A Nuffield Farming Scholarships Trust

Report

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Yorkshire Agricultural Society



External Capital in Global Agriculture

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The views expressed in this report are entirely my own and do not represent the views of the Nuffield Farming Scholarship Trust, or my sponsors, or any other sponsoring body.

Please note that I am a Yorkshire farmer, not a financial adviser, and the contents and data in this report is for information only. It is not intended to be investment advice of any form. Before making any kind of investment it is advisable to speak to a suitably qualified financial service provider.



1. Executive Summary

I live on an arable farm in East Yorkshire with my wife Julie and our two young sons James and William. We farm over 320 hectares (ha), part owned, part tenanted and part contract farmed, on flat heavy land where we grow wheat, oilseed rape and vining peas for Birds Eye. I started actively farming at the age of twenty four following the sudden death of my father. Before returning home I had worked as a fertiliser trader for Cargill plc, after having studied agriculture at Newcastle University.

So why a Nuffield Farming Scholarship? Having farmed since 1993, an element of routine had set in, and I felt the need to push my boundaries and challenge what I was With a commercial background, I doing. wanted a stimulating topic that would challenge me, but would also allow me the opportunity to visit farmers and businessmen alike. I wished to see underlying principles and concepts that I could hopefully bring home to Yorkshire and that would potentially lead to future opportunities for our business. The subject I decided upon was therefore: 'External Capital in global Agriculture'. Since the global financial crisis of 2008, which brought turmoil to the financial and residential/commercial property markets in much of the developed world, there has been renewed interest from corporate investors in agriculture, particularly in land ownership.

Why farmland for investors? There are many reasons; an increasing world population that is estimated by the U.N. to be 9 billion by 2050, a trend to increasing meat consumption in developing countries like China due to higher disposable income, the loss of land due to urbanisation, degradation and climate change and the use of coarse grains for energy production. The combined effect is a mounting pressure on the production capability of remaining, or potentially virgin, agricultural land.

During my study I spent time in the UK as well as in Southern Russia, Chicago, Argentina, Uruguay, South Island New Zealand, Australia and Singapore. I have been fortunate enough to attend conferences, talk to land agents, investors, asset managers and visit corporate farms.

Liquidity of money in agriculture is a problem to investors, but is best achieved when the corporate farms are listed on the stock market in vehicles such as Black Earth When it comes to corporate Farming. farming, they do not come much bigger than Black Earth Farming with 318,000 ha in southern Russia. It enjoys professionally run farms with large fields of quality land at affordable prices. A panacea it is not, with similar problems of labour, climate and politics to those in UK farming, though magnified. Foreign exchange is of the utmost importance in global agriculture, and Black Earth Farming attributed US \$5 million out of their US \$41 million 2011 loss to currency exchange rates.

Though not a mainstream investment, there are a number of agricultural funds which offer direct exposure to agriculture worldwide. These tend to be for high net worth individuals or institutions, who own a proportion of the fund. Having spent time with Jim McCarthy and his Fondomonte operation in Argentina as well as Calyx Agro, who farm not only in Argentina but Uruguay, Paraguay and Brazil – what was obvious was the professionalism of these corporate farms.

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Their routine use of technology, direct drilling techniques and GM crops was to be admired; however they carried high costs associated with the administration and accounting of their businesses. The need for a 'Big 4' accountant and different corporate vehicles add greatly to overheads in these corporate farms, even though they may have very low direct production costs. Therein lies the paradox.

Where the investor has direct ownership, the traditional landlord/tenant model is the most common format throughout the world. The US pension fund TIAA-CREF with US\$2.5 billion invested in land worldwide, was renting out wheat growing land for about 5% return on land capital value in Australia. This is far in excess of the UK's rental potential of about 1% for Agricultural Holding Act (AHA) tenancies, and the slightly higher figures yielded from Farm Business Tenancies.

Around the world, the Middle Eastern Sovereign Wealth Funds and the Chinese are certainly active in the land market as well as the agricultural funds. However land ownership by foreign nationals is definitely a very political issue in most countries.

For investors, land as a rule has offered good returns over the long term, especially in times of high inflation. It also offers investors the opportunity to diversify their investment portfolio from the traditional asset classes of equities, bonds and commercial property.

Investors are currently very interested in agriculture and food production. It is unlikely

however to become a mainstream sink for funds as investors are wary of the lack of liquidity as well as the issues of climate and commodity market volatility.

My Nuffield journey has taken me out of my comfort zone and will certainly impact upon the way I view and manage my own farming business in the future. As a Yorkshire farmer, the main commercial and business lessons I learnt were:

- The financial returns from the bare land asset need to be identified and separated from the financial returns from actively farming.
- 2. The benefit of having a non executive director, assuming the correct skill large scale corporate set. in agriculture. Likewise is access to a trusted third party (a farmer/consultant) at UK farm level to, at the very least, carry out a reality check. This could easily be a reciprocal relationship - though absolute honesty is paramount. This difficult shouldn't be in Fast Yorkshire!
- The use of benchmarking to help analyse your business by comparing financial data.
- Grass can look greener elsewhere, but land ownership rights, political stability and our legal system in the United Kingdom are exceptional.
- 5. As with most investments, agricultural investments with higher risks often offer the potential for greater rewards as well as losses.



2. Introduction

I live on an arable farm in East Yorkshire with my wife Julie and our two sons James aged 14 and William 12. After studying agriculture at Newcastle University in the late 80s, I took a job as a commercial management trainee with Cargill Plc, working as a fertiliser trader in their UK agricultural head office in Lincolnshire.

Following the sudden death of my father in December 1992, I started farming, becoming fully involved in the family farming businesses. With the help of my mother, sister and wife Julie the farm has grown to over 800 acres. The area is part owned, part tenanted and part contract farmed and spread over a four mile radius. The businesses are run by the family with the help of Gary Houlder working fulltime on the farms. The land is very flat with heavy clay and warp soils which are drained. Cropping is based on winter wheat with oilseed rape, vining peas and sometimes beans for a break in the rotation. Machinery policy is based on running low-houred second hand equipment to keep fixed costs under control.

Why a Nuffield Scholarship? On a personal level, having farmed since 1993, I wished to challenge myself and question what and how I do things on the farm and in life. Having now undergone the Nuffield journey – it has done all of these, and more.

I have always been particularly interested in the commercial aspects of agriculture, so the topic 'External Capital in Global Agriculture' was chosen for 3 main reasons:

1. After the global financial crisis of 2008, and the boom in soft



commodities, it has been a highly debated and topical subject which I find interesting and stimulating.

- 2. I wondered about the possibility of farmers aligning themselves with these investors to expand their own operations, to gain scale and reduce costs. Ultimately, after having met managers, investors and fund opportunities may occur to expand our own farming operations in Yorkshire. or possibly become involved in a fund or consortium with a range of farms in the UK or overseas - we will see!
- 3. On a personal level I wished to see if any lessons could be learnt from corporate agriculture that could be used in my own farming businesses.

During this Nuffield Scholarship I have been extremely grateful for the doors that have been opened to me, and the amount of confidential and private detail that has been discussed. So although some readers may at times feel aggrieved at my lack of detail on a particular business, I have made the decision in this report not to give any more information than is available in the public



domain. This is generally due to the sensitive commercial nature of these businesses.

I start my report by analysing why farmland is of interest to investors, reviewing investment performance against other assets, the diversification of portfolios and ways in which investors can gain indirect exposure to agriculture. I have looked at the various different formats that investors can use to invest directly into agriculture, and the different types of farm business structure which would be of interest to farmer readers. I have also touched on the emotive issue of foreign investment in another country's land and restrictions on its ownership. The importance of water, sustainability and other factors affecting large scale agricultural investments are discussed, before concluding with business and commercial recommendations for Yorkshire farmers.



Irrigated corn in New Zealand

3. Why Farmland?

"Buy land, there're not making it any more" (Mark Twain)

Since the global financial crisis of 2008 there has been a largely renewed interest in soft commodities. The U.N. estimates that the world population will be 9 billion by 2050. Coupled with increasing population, the fact is that as average incomes increase in countries such as China, India and Brazil, so do dietary requirements and aspirations. The expected increase in meat consumption will place more demand on agriculture to produce this high protein food source.

Land is being lost to urban sprawl and construction, especially in rapidly expanding countries like China. The loss of farmland and its productivity due to further land degradation is also a worrying trend. It is far more prevalent in the developing world due to soil erosion and deforestation. Current estimates are that an area the size of Singapore is lost every week to degradation alone. The effects of climate change and the global demands on fresh water, all put pressure on agriculture.

The biggest single increase in demand for soft commodities in recent years has been the increase in use of biodiesel and ethanol. The U.S. has ordained a mandatory increase from 9 billion gallons in 2008 to 36 billion by 2022 for its usage in transport fuel, and the E.U. has targets for a 10% inclusion of bio fuels into transport fuel by 2020. Although there is more land slowly coming into agricultural production in developing countries, and there may be less legislative control on the use of modern science - for example genetically modified (GM) crops - only time will tell if the increasing demands can be met.



Feed Conversion Efficiency: lbs of usable protein yield per acre

Source :USDA: FAO/WHO/UNICEF Protein Advisory Group. Diet for a New America. John Robbins.2004



4. Performance against other Assets

Agricultural land has performed well against other asset classes. Though not perceived as 'sexy', its performance has been consistently good, even though there have been significant bull runs (high performance) for shorter periods in equities and residential property.

See chart below, plus charts on the next page



Source: IPD/Savills Research (2011)





Source: Savills, HighQuest Partners, NCREIF (1991-2009)



Source: IPD Australian Property, ABARE, UBS Composite Bonds, ASX data and Warakirri (1990-2009)



Figures in the public domain are very hard to obtain, but in the UK, the Church Commissioners, who manage £5.2 billion for the Church of England, have a target return on assets of:

Retail Price Index (RPI) + 5% per annum

This is averaged over the long term to meet its pension obligation, and maintain growth of the fund. The balanced fund in 2010 comprised 55% equities, 8% alternative securities, 7% fixed income and cash and 30% in agricultural land.

In their report at the end of 2011, the Church Commissioners stated: "We continued to diversify our investments, reducing our equity holdings and investing further in multi-asset strategies and timber". Interestingly, by November 2010 they had allocated £200 million (about 4% of the portfolio) for potential investments in timber, with £43 million of that spent by the end of 2011 in a UK portfolio of eight forests, all operating to sustainability high and management standards.

I was very grateful for the time Chris Bourchier (Director of the Rural Estate, one of the four sub divisions of The Crown Estate in the UK) gave me. The Crown Estate is a diverse property portfolio of about £8 billion, with all profits going to the UK Treasury.

In the UK, land has a high capital value and income return is relatively low compared to most other countries. The capital value is based on productivity, but affected by many outside influences - inheritance tax, EU agricultural policy and future potential development being to the fore. Over Chris Bourchier's 15 year tenure, the Rural Estate has risen in value from £250 million to £1.2 billion + £400 million drawn out. Through active management, total returns have averaged over 14% per annum – which ranks very highly against any agricultural or other investment in the world.

Diversification of Investment Portfolio

As far as institutional investors are concerned, over the years there has normally been a low correlation in performance between land and other asset classes, including equities, which has had the effect of diversifying their portfolios.

See chart below.

Total return % p.a.	20 years	15 years	10 years	3 years	1 year
	1992-2011	1997-2011	2002-2011	2009-2011	2011
Commissioners' total assets	9.5	8.4	7.0	11.1	2.9
Global equities mandates	8.1	6.4	3.8	10.2	-5.5
UK equities mandates	8.5	5.8	4.0	12.3	-7.1
Commercial property	10.3	9.7	7.9	9.9	6.6
Residential property	15.7	18.1	15.5	14.8	14.9
Rural let land property	15.3	15.2	17.8	15.4	24.6
Rural strategic land	n/a	19.3	16.2	19.3	11.4
Indirect property	10.6	10.5	7.6	1.9	10.7
Value linked loans	7.2	8.5	5.7	11.1	0.00

Church Commissioner's Main Asset Class Returns

Source – Church Commissioners Annual Report 2011 page 20

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Australian Asset Class Return Correlation

Class	All Property	Retail	Office	Industrial	Agriculture	Australian	Bonds
All Broporty	1.00					Equities	
All Floperty	1.00						
Retail	0.69	1.00					
Office	0.98	0.56	1.00				
Industrial	0.93	0.66	0.89	1.00			
Agriculture (ABARE Grain)	0.28	0.15	0.22	0.48	1.00		
Australian Equities	0.46	0.66	0.40	0.52	0.19	1.00	
Bonds	-0.73	-0.40	-0.71	-0.68	-0.27	-0.18	1.00

Source: Warakirri, IPD Australia Property, ABARE, UBS Composite Bonds and ASX data (1990-2009)



Futures pit in CME (formerly Chicago Board of Trade)

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5. Indirect Agricultural Investments

A number of different routes are available to give an investor exposure to agriculture. Probably one of the simplest is the 'unit trust type' of investment, which contains a basket of equities made up of large international companies with an agricultural interest: such as Potash Corp, Monsanto Co and Deere Co.

These products are often referred to as Exchange-Traded Funds (ETFs)

Details of DAX Global[®] Agribusiness Index: as at May 2011

Largest Components	Index Weighting	Free-float market capitalisation €billion
Monsanto Co	8.1 %	20.7
Potash Corp	7.3%	18.5
Deere Co.	7.0 %	18.0
Wilmar Intl Ltd	6.7 %	17.2
Syngenta Ag	6.1 %	15.5

(Shown for example only and no financial advice is implied or intended)

The derivative markets offer investors an exposure to agriculture through the use of commodity futures and options traded on exchanges such as the London Commodity Exchange and the CME Group in Chicago (formerly the Chicago Board of Trade). I must thank Chris Mann of Traders 8 who gave me an enlightening experience allowing me to observe the trading floor of CME Group in Chicago first hand, and discussed with me how one would reduce physical exposure of crops on farm with futures and options. The use of these futures is often employed by agricultural merchants to reduce their exposure to the volatility of the physical grain

It is estimated that, in the Chicago exchange, over 40 times the volume of soft commodity futures are traded compared to the physical commodity.

price. Futures contracts are used when buying, from farmers, grain that cannot immediately be offset into the physical market; as is well known, they are also used by commodity traders and speculators. Over recent years the amount of activity in futures trading has increased, probably adding increased volatility to these products, and therefore increasing potential for large returns or losses.

To put this into perspective: presently it is estimated that, in the Chicago exchange, over 40 times the volume of soft commodity futures are traded compared to the physical commodity.

As a more passive investment, some investment banks offer products in which investors can buy a basket of soft commodity futures contracts. UBS bank offers one of these in the product called the Exchange Traded Access Securities (ETRACS) CMCI Agriculture Total Return.



6. Land Values

Throughout the world land values vary enormously and have many factors that affect them. The basic and most fundamental factors which affect cropping options and yield must be the physical productive capacity of the soil type and climate. Location in relation to markets for produce is intrinsic, but the stability of the country's political system and economy greatly affects land prices. Of immense importance, and often taken for granted in the UK, is security of title. This cannot always be relied upon in other countries around the world.

Country	Price notes	Average price US\$/hectare	Price change in 2010
England	Average all land types	22,000.00	13%
Romania	Price dependent on size of holding	1560-3250	0
Poland	Price dependent on size of holding	4550-8125	0
Ukraine	Five to 10 year lease rights	150-350	0
Russia	Price dependent on size of holding and	300-1000	-10%
	progress of freehold application		
Brazil	Dryland double-cropping in Matao Grosso	7,000.00	20%
Brazil	Native bush with high cattle potential in the	300.00	11%
	northern state of Parά		
Argentina	Northern provinces	1200-2500	10%
Argentina	Central provinces	5000-10000	10%
Canada	Saskatchewan province	1,300.00	7%
Australia	Dryland arable with reliable rainfall	1600-1700	2%
New Zealand	Dairy Farms	23,000.00	-3%
United States	Quality dryland in cornbelt states	16,000.00	8%

Average farmland prices and appreciation by country in 2010

Source 'The Wealth Report 2011' by Knight Frank and Citigroup



Source: Savills

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Source: Margenes Agropecuarios



Source: Landgate and Savills

Exchange rates (July 2012) UK £1 = 1.51 Aus \$ UK £1 = 1.57 US \$



7. Restrictions on Foreign Ownership of Agricultural Land

Restrictions on foreign ownership vary greatly from country to country. Sovereign control affects foreign investment, and is a very political issue in some regions. Unlike many other countries the UK has a robust legal system, and no restrictions on foreign investment in land.

See chart below



Source: www.oecd.org/investment/index



7a. New Zealand

In New Zealand any parcel of agricultural land over 5 hectares, that is bought by a foreigner, is subject to the Overseas Investment Act 2005. In New Zealand, 98% of applications from foreign investors are approved, but 10% are withdrawn during the process. No one will know how many applicants are put off applying through this public process.

In New Zealand 600 dairy farms are sold each year, of which only 0.5% have gone to foreigners (*Dave Heatley pes.comm*)

7b. USA

The US Federal Government does not restrict land ownership by foreign nationals, but The Agricultural Foreign Investment Disclosure Act of 1978 makes it necessary for foreigners who acquire or dispose of agricultural land to report it within 90 days. The owner's names are not made public. Foreign owned holdings cover about 1.8% (according to U.S.D.A. 2011) of all private agriculture and forestry in the USA.

In the U.S., although there are no federal restrictions in relation to foreign ownership, there are local restrictions which vary from state to state. Foreigners at the moment cannot own any land at all in Nebraska, North Carolina or Oklahoma. In Colorado, Hawaii, Iowa, Michigan, Minnesota, Missouri, New Hampshire, North Dakota and Vermont, foreign nationals must reside in the US to own land. Some states have area limits, while other states insist on buyers intending to become citizens, whereas the states of Massachusetts and Connecticut have no restrictions at all.

7c. Canada

Foreign nationals in Canada can in general buy and sell agricultural land under the same conditions as any Canadian citizen, but provinces can place restrictions on non Canadian citizens and residents if they wish. Saskatchewan, Manitoba and Prince Edward Island are very restrictive on foreigners purchasing land, whilst British Columbia, Quebec, Nova Scotia, Newfoundland and New Brunswick have no restrictions on foreigners buying farmland.

7d. Brazil

In each municipality, foreign ownership of its farmland is limited to 25%, with no more than 10% to be owned by any single nationality. The reason for these new rules is to give Brazil a greater understanding of its sales to foreigners.

In Brazil over 4.4 million ha, 1.6% of farmland, are owned by foreigners

In Brazil over 4.4 million ha, 1.6% of farmland, are owned by foreigners. This however does not include land owned by Brazilian companies which are backed by foreigners (*Gomes 2010*).

7e. Argentina

Argentina had no restrictions and did not record any farmland sales made to foreigners, but in April 2011 a bill that would manage such sales was placed before the parliament of President Cristina Ferrandez. In December 2011 the Bill was passed and it limited foreign ownership to a maximum of 15% of Argentinian land. No single nationality is allowed to own over 30% of the total foreignheld land. The maximum for any foreign



individual or company is now 1000 hectares in the 'core regions' that cover some of the more fertile areas of the Pampas. Foreign land owners have 6 months to declare their holdings, which enables the government to acquire the base farmland data. Unofficial

Unofficial estimates suggest that foreign ownership of land in Argentina is currently 7% of available land

estimates suggest that foreign ownership of land in Argentina has grown from 3% in 2000

to its current level of 7% of available land, accounting for about 20 m ha (*Mecopress 2010*).

Press reports imply that US millionaire Douglas Tompkins owns approximately 700,000 hectares, mostly in Corrientes and that the Benetton family owns 900,000 hectares in Patagonia.

7f. Uruguay

Foreign ownership of land is relatively straightforward, even though purchases have to be approved by the President himself.

Source:- This chapter's information is based on ABARES report into Foreign Investment and Australian Agriculture (Nov 2011)



8. Study Tour

My study tour was spent in the following countries/dates:

United Kingdom	January 2011 to June 2012 Individual visits/meetings
New Zealand	March 4th – 18th 2011 Contemporary Scholars' Conference Large farming operations on the Canterbury Plains
Chicago	May 7th – 11th 2011 World Agriculture Investment Conference (by George Kiley) CMT (formerly Chicago Board of Trade)
Southern Russia	June 23rd – 26th 2011 Black Earth Farming
Argentina & Uruguay	November 27th – December 19th 2011 Calyx Agro Fondomonte Adecoagro MSU Kilafen
Australia	January 8th – February 5th 2012 Large scale corporate farms Agricultural fund managers
Singapore	February 6th – 7th February 2012 Fund managers – Duxton Asset Management Investment Bank Morgan Stanley

The World Agricultural Investment Conference which I attended in Chicago, thanks to George Kiley, provided an excellent insight into my subject and was invaluable regarding contacts.

I think it is important to describe in more detail the areas I visited whilst in southern

Russia, Argentina and Uruguay as well as in Australia.

I would like to detail the agricultural systems used in the countries I visited and describe how they differ from those of the UK, as well as stating any lessons that can be learnt.



9. Russia

Thanks to Richard Warburton, CEO of Black Earth Farming, I was lucky enough to spend two days last June with Mark Randall who is a production director for the company, which operates 318,000 ha in Southern Russia.

Chernozem soils in the 'Black Earth' area of southern Russia are high in humus/organic matter, and are very friable. The climate is of extreme importance as the extremely harsh winters and lack of unreliable rainfall in the spring growing season can be a huge problem. Water and irrigation are consequently of immense importance; 10 mm of rain in a dry spring/early summer period could easily be worth US \$4 million to the bottom line of this company. *(See photo on next page)*

Economies of scale in farming are easy to achieve in this environment. Black Earth Farming commonly operates machinery on a 24 hour shift system in the intense five week period in spring, and then again from mid July through to the end of October. Combines are often worked on 16 hour days in 2 shifts, and the huge 18 meter wide drills worked 24 hours sowing on average 220 ha per day. Machinery for Black Earth Farming was operated on a very complicated piece rate system in order to increase efficiency, but this then creates more paperwork. Labour issues that occur in all countries are exacerbated due to language and cultural differences.

No GM crops were officially grown in Russia, though some smuggled material from the Ukraine may be grown in the area immediately alongside the border. Yields of wheat in Russia are often low, with production based on long straw/bearded varieties with genetics at least 25 years old. Spring barley varieties had better genetics, but were supplied by companies like Cargill and Soufflet who had buy-back contracts for the malting barley that was produced. Logistics from field to store are manageable, but transport from store to port can pose problems and significantly affects the price back at the farm.

Politics and local government in Russia have a great influence. Land in Russia can be purchased, but the time span is protracted (normally taking 3 to 5 years) and requires a team of lawyers. Government interference is widespread and not run to the same transparent rules westerners would expect. 'Charity' donations every year, may be seen as expensive, but are they cheaper in the long run?

Russian farming can be described as full of potential, but in a hostile environment

In Russia, teams of inspectors regularly assess what you are doing. Russia is an importer of meat and milk, and when you purchase land you agree to have livestock on it (although this is not legally binding). Absence of livestock leads to fines, but these are by no means set in stone. Even having a large dairy herd does not make you exempt from these fines and you will probably be asked to increase numbers. Any non compliance will also lead to fines.

Russian farming can be described as full of potential, but in a hostile environment: 'hostile' in the sense of climate, politics and hassle: 'potential' due to the opportunities of large areas of good quality land in large fields at affordable prices.

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Russia - 400 ha field of sugarbeet and potential pests



Cultivations in Russia – see page 25, Black Earth Farming

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10. South America

In South America, I was fortunate to travel to and visit some of the large corporate organisations, land agents and farmers based in Argentina, as well as Kilofen which was based in Uruguay.

10a. Argentina

In Argentina I found a land of contrast. Whilst in Buenos Aires I questioned a young Argentinian hotel receptionist about the practice of manually recycling the bagged rubbish that had been deposited by offices on the street corners as night fell. He explained that I must remember Argentina was a Third World country whilst the UK was First World. Well there is nothing Third World about Argentinian agriculture; all farming, it seemed, was carried out to a very high standard. In Argentina, unlike the EU, there is no subsidy net or government support and conversely the government taxes any crops that are exported. These are levied at various rates - soya 25%, maize (corn) 15% and wheat 15%. This has the effect of reducing commodity prices and drives the consistent professionalism that is needed to survive in Argentinian agriculture.

Politics is a major issue in Argentina. The financial crisis of 2002 when the federal government effectively quartered the value of savings in all banks based in Argentina has had a huge effect on the population. A large monetary black market operates in Argentina, and banks are generally not trusted any longer as safe havens for money. The average family with savings is as likely to hide cash in their house as use a bank, so real assets like property and land offer a safe haven for money; this is compounded by a high inflation

rate – currently 20% per annum. Farmers nearly always have to buy land with cash reserves (no borrowing).

In Argentina, I was lucky enough to visit the excellent La Dolores farm in Santa Fe Province owned by Calyx Agro (which is backed by Louis Dreyfus) with thanks going to Axel Hinsch. Whilst there I also looked at 2 impressive farms belonging to Fondomonte in the Buenos Aires province which Jim McCarthy kindly showed me around.

In Argentina, unlike the EU, there is no subsidy net or government support and conversely the government taxes any crops that are exported.

Agriculture has altered dramatically with the introduction of Genetically Modified (GM) crops, especially GM soya. This coincided with the uptake of direct drilling techniques which are now used for 85% of the crop. Direct drilling has increased the amount of organic matter in the surface layers of the soil and the intact stubble helps with moisture conservation. Direct drilling and GM soya bring agronomic benefits as well as the commercial benefits of reducing the cost of production.

GM maize (all purchased seed) has a triple stacking gene which protects it against European Corn Borer and Rootworm which previously required insecticide inputs to control, often spraying up to three times with organophosphorus chemicals. Not only is the cost of chemicals and that to the environment saved, but as there is no initial damage, pre spray threshold, by such pests, completely

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unaffected crops will ultimately be less stressed and hence yield better. The GM soya is 'Roundup Ready' but can be legally retained for seed the following year as it was never patented when first launched.

Maize, soya and wheat now dominate the Argentinian plains and have replaced the herds of cattle which used to dominate their agriculture. On the fertile land I visited in the Buenos Aires and Santa Fe provinces, soya and wheat could be double cropped. It is very common in Argentina to use contactors for arable operations; these contractors run very professional outfits. Specialist contracting gangs appeared to choose either combining or drilling, and due to the long seasons and multiple crops, they are used to covering large areas per annum.

The combines here are realistically able to achieve 1,000 hours/year, which is far in excess of expectations for a machine in the UK. Corporates like Fondomonte would typically offer to pay a percentage of crop yields, often 7–8.5%, to the harvesting contractor while the combine driver would receive about 12.5% of that income. This obviously incentivises the contracting gangs.

Low operating costs are certainly the order of the day, and the use of silo bags for temporary grain storage, and even relatively long term storage (6/8 months) is common. With costs of about US \$4/tonne to fill and around US \$3/tonne to unload, their use in Argentina and Uruguay is very common. *See photo on next page.*

Rents are normally based on the soya price and fixed on the price of 2 tonnes of soya for better land in Santa Fe, down to 0.8 tonnes of soya per hectare on poorer ground.

10b. Uruguay

Agriculture in Uruguay was largely grassland based until the mid 1990s, but since the introduction of GM soya there has been a big increase in cropping. However, due to the undulating nature of the landscape and the relatively poorer quality of land compared to that in Argentina, the farming is best described as mixed. Land prices in Uruguay have risen sharply, and now trade at only a small discount to those in Argentina, rather than at the 50% discount they did in previous decades.

The combines here are realistically able to achieve 1,000 hours/year, which is far in excess of expectations for a machine in the UK

Thanks to Alberto Capurro, I was lucky enough to be able to visit the professional corporate Kilofen in Uruguay, who own and rent land totalling approximately 20,000 ha and also operate a grain merchanting and storage facility very close to the post of Nueva Palmira.

Uruguay, like Argentina, operates cropping units on a similar basis but the large professional contractors are not as common. Unlike the corporate farms in Argentina which effectively only had managers with contactors used for the whole cropping operation, corporates like Kilofen have some of their own farm staff and machinery as well as making use of contractors,.

10c. Brazil

Calyx Agro have large farming operations in Brazil as well as Argentina, Uruguay and Paraguay. Brazil benefits from large areas of fertile land, but problems lie in the great distances from market, therefore

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freight/transport costs can be huge. Professional agricultural contractors were also very hard to find due to the distances involved and the isolation of farms, but such businesses are beginning to develop.

Paraguay is certainly now attracting a lot more interest from foreign investors and corporates, with large areas of lower cost farmland ideal for development

Brazil, though, does have problems as well as fundamentally a lot of good land and a friendly climate. Land reclamation offers investors the potential for the greatest return. Reclamation costs approximately US \$2,500/ha and takes about 5 years, but problems often exist with minor nutrients/elements; aluminium levels often being too high and those of phosphorus being too low. Cerrado (scrub/small trees) is often reclaimed, but some natural vegetation has to be left depending upon the state involved; 50% in Amazonia and 20% in Bahia.

10d. Paraguay

Paraguay is certainly now attracting a lot more interest from foreign investors and corporates, with large areas of lower cost farmland ideal for development. Investment in Paraguay, though, comes with the disadvantage of a relatively unstable political system.



Temporary grain storage in South America



11. Australia

Due to the amount of land available, Australian agriculture, unlike that of the UK, offers farmers greater opportunities for economies of scale. The lack of urbanisation and the much lower capital value of land, which in Australia is related to its productive capacity, make valuations more earnings based. As in South America, direct drilling of arable crops is the norm, and is carried out in order to reduce establishment costs, improve the organic matter of the soil and make large areas manageable by fewer staff and machinery.

Cropping in **Western Australia** (WA) is fundamentally dryland wheat and canola; huge opportunities for scale exist here. Rainfall is the dominant factor; there are generally higher and more consistent returns from cropping in the higher rainfall areas nearer the coast. This reduces as you head east into the Eastern Wheat Belt, about 300 km inland, where land trades at about Aus \$2,500/ha.

Northern Tasmania: - it is very scenic here with rolling hills and a more temperate climate. It is about as close to English conditions as you can get in Australia! Good light bodied soils were in evidence on the farm of my host Rob Nichols in the Sassfrass area in Northern Tasmania, 80 km to the west of Launceston. This area has smaller, more intensive farms than that of the Australian average, but they benefit from the combination of good soils and have the ability to irrigate, subject to entitlements and In this immediate area I saw allocation. carrots, onions and vining peas grown for Simplot Pty, plus potatoes and poppies, with pyrethrum grown to produce the chemical pyrethroid. All these crops, as well as wheat,

yield well above the normal Australian average, with the local wheat producing about 9 t/ha.

On the dairy front in Tasmania, I had the good fortune to visit Paul Lambert, who had just sold two of his dairy units to the 'Sustainable Agricultural Fund'. These farms were about 20 km S.E. of Sassfrass in Northern Tasmania and set in valley bottoms. Dairying here was based on the simple but intensive New Zealand style system, with huge centre pivots helping to maximise grass growth.

After spending a few days in Tasmania, I flew to Brisbane and drove over the Great Divide to Moree, and headed south towards Dubbo and Wagga Wagga. The Moree region has some very large scale farming operations to the west of the Great Divide. They were on good soils: large operations using no till, mainly GPS and some controlled traffic systems to grow wheat and canola. The area also appeared to be the nucleus for the Australian cotton industry, both irrigated and non irrigated. Here I was fortunate enough to visit PrimeAg, a company listed on the Australian stock exchange, and Australian Food and Fibre which is now delisted and back in private hands.

See photo of irrigated cotton on next page.

The Auscott Limited (a J Boswell subsidiary) 200 ha dam with adjoining 400 ha field of cotton really was impressive as far as scale was concerned. Whilst in the area I also met Rob Blatchford who farmed about 4,000 ha and grew 1,400 ha of dryland cotton which was direct drilled by a 36 meter seeder. He used millet as a green manure, grown as a catch crop between two crops of cotton. This

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was equally impressive, if not however quite on the same scale.

As with most of the agriculture I viewed whilst travelling in Australia, water is key. Whether as irrigation in order to give a stable yield, or preserved by direct drilling techniques, it is the staff of life.

The opportunity to achieve economies of scale, and the use of precision farming technology in Australia, were so marked in

comparison to the UK. Operations comprising two fulltime workers and farming 1,600 to 2,000 ha were employing this technology with 2 cm accuracy to sow crops in between cereal stubble rows.

Australian agriculture is efficient and operating at world prices; it creates opportunities for growth and return on capital. Its adoption of modern technology and the use of rainfall/water conservation are impressive at the very least.



Irrigated cotton in Australia



12. Structures for Investors in Agriculture

I would like to spend some time explaining about and expanding upon the different methods by which outside investors can access directly into agriculture, and particularly farming, and relate this to the corporate type businesses I engaged with and visited.

12a. Listed Companies

Public listed farming companies offer the optimum in the form of liquidity for investors, as they can alter the value of their holdings quickly as sentiments and the markets alter. Unfortunately, though, due to their smaller capitalisation, they are often excluded from the investment criteria of some of the large financial institutions.

Shares are publicly listed on stock exchanges, for example those of Prime Ag in Australia (Australian stock exchange), Black Earth Farming in Russia (Swedish stock exchange), Adecoagro based in South America (New York stock exchange) and Continental Farms Group in Eastern Europe (London stock exchange). I will describe each of the companies above, but more detail is available in their public reports.

PrimeAg

PrimeAg is the only cropping-based agricultural company listed on the Australian stock exchange. Its head office is in Toowoomba, Queensland, where Peter Corish kindly gave me some of his time. Conceived in 2004, but listed in 2007 before the global financial crisis, 30% of the investors are registered offshore and 70% are Australian. Out of the twenty largest holders of PrimeAg Australia Ltd securities listed in the 2011 Annual Report, the names of the big investment banks: - Citicorp, J P Morgan, HSBC and UBS nominees all occur. External capital in global agriculture: by Mark Falkingham Interestingly, the UK registered FTSE 100 company Glencore owns 1.79% of PrimeAg.

PrimeAg has around Aus \$300 m worth of cropping land in Northern N.S.W. and Southern Queensland. Its locations are based on the prime farming areas, producing a geographic spread and therefore dispersing the associated risk. Cotton is the primary crop grown; it occupies about 7000 ha out of the 11,000 ha of irrigated land that is farmed, the remainder being made up of wheat and sorghum. There is a further 20,000 ha of non irrigated land with a mixture of about 5,000 ha cotton, 6,000 ha wheat, 5,000 ha fallow, with sorghum and chickpeas on the remaining 4,000 ha.

PrimeAg established an unlisted structure in July 2011. The unlisted fund is made up of Aus \$125 million from the 'Future Fund Australia', and Aus \$125 million was raised by a rights issue from shareholders. Fee structures on these unlisted funds vary, but PrimeAg's management fees of 1.15% of an investor's stake - plus a 10% performance fee on over 10% of annual fund growth (operational and capital growth combined) - seem to be in line, or on the conservative side, in this sector.

Like similar funds, broadly 7% per annum capital growth and 7% from active farming was a budgetary target, which would net down to about 12% per annum after charges. Assets of land and water entitlements are valued every second year.

PrimeAg made a profit of Aus \$7.9 million for the year 2011 whilst a loss of Aus \$12.6 million was recorded for 2010 when the area was badly affected by flooding. Shares were floated at Aus \$2.00 in December 2007 and

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now stand at Aus \$1.15 (June 2012). The share price stands at a big discount to that of assets (65 to 70% of valuation).

Black Earth Farming

See photo on page 18

Black Earth Farming's share price stands at 9.0 Swedish kroner (SEK) (as at July 2012) after floating at 50 SEK in December 2007 and peaking at 73 SEK (February 2008) on the Swedish stock exchange.

- Currency is of great importance and foreign exchange exposure issues can be problematic. Black Earth Farming attributes US \$5 m of its total US \$41 m loss in 2011 to currency issues.
- 2. The problems and costs of reporting and administration are high.
- Water is of extreme importance, in Black Earth's case due to their large cropped area, 10 mm of rain in a dry spring can add US \$4 m to their bottom line.
- 4. There is huge potential, but Black Earth Farming has never made money. If they could consistently make money in Russia there should potentially be a large increase in their land values. Russian land prices are particularly hard to get consistent and accurate figures for; in the Black Earth Farming accounts the land values are based upon the purchase price. Obviously profitability in their active farming operation plus the associated likely increase in the value of their land would alter the share price significantly.

Adecoagro

In Buenos Aires, I was fortunate enough to visit Adecoagro which farms in Brazil, Paraguay, Uruguay and Argentina. These units are made up of owned and rented land. Adecoagro was mainly seeded by capital from George Soros, and then after a second fundraising round it was floated on the New York stock exchange via an Initial Public Offering (IPO) in 2011. Though very professional and well thought of, their share price has suffered from initial floatation in January 2011 at US \$11 per share to its current value of US \$10.10 (July 2012).

Liquidity is still a problem, even though it has been floated, because its level of capitalisation is relatively small. Large financial institutions and pension funds are interested in the agricultural sector, but are unlikely to invest in such businesses. This is mostly due to their self imposed requirements of minimum capitalisation levels within their internal investment criteria.

Selling a farm property per year has the effect not only of consolidating gains (or losses) on the asset, but also gives shareholders the confidence and security that valuations on their books are in line. This is very important to investors, potential investors and analysts and should not be underestimated.

When in Argentina, Adecoagro impressed me by how well they were regarded within the industry. In these agricultural businesses, the valuation of agricultural land they operate on is a very important issue. Adecoagro have a policy of selling a farm property per year. This has the effect not only of consolidating gains (or losses) on the asset, but also gives shareholders the confidence and security that valuations on their books are in line. This is very important to investors, potential investors and analysts and should not be underestimated.

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Continental Farmers Group (CFG)

CFG started farming in Poland in 1994. They now own about 1,600 ha and lease an additional 1,100 ha. In 2006 they began leasing land in Ukraine, where they rent approximately 21,000 ha around Lviv in Western Ukraine (foreigners cannot own land in Ukraine).

Its shares were floated on the London Stock Exchange in June 2011, and from the flotation documents you can see the last 3 years' financial information.

	Period	Year ended	Year
	ended	31 Dec '09	ended
	31 Dec '08	\$000	31 Dec '10
	\$000		\$000
Revenue	6,098	12,331	21,118
Profit (loss) before tax for period/year	619	(1,907)	3,163
EBITDA	2,076	348	6,341

Source Page 15 CFG.flotation document

Flotation on the London Stock Exchange (LSE) at £0.24 (€0.26) has increased the liquidity of its shares, and allowed shareholders such as Origin PLC (an Irish agribusiness) to alter their holding easily. Though Origin invested €19 m in 2008, by the time of flotation in 2011, its shareholding was worth only €9.3 m which is an over 50% loss.

After having spoken to Alastair Stewart (finance director of CFG) I was made aware of the importance of corporate governance, and so the need for a 'Big 4' accountant and costs associated with retaining such a service are a necessary requisite. Alastair's view was that Initial Public Offerings (IPOs) are getting harder and harder to carry out in the UK at the moment due to the current financial climate. In the UK. a nominated adviser is often used, and a good broker is a must. The valuation has to be supportable, and IPO funds are often trading at a 30-40% discount to the asset value. In the case of CFG, the major new investors were investment houses External capital in global agriculture: by Mark Falkingham such as Artemis, Blackrock and F&C. They are looking for 20% capital growth per annum for the float to be a credible investment for them. Investment houses like Artemis and Blackrock operate a large number of funds, so having access to the relevant manager is a necessity. The cost of IPOs is very expensive. The IPO for Continental Farmers Group (CFG) cost approximately £2 m to raise the £16.7 m for the placement, so a 10% benchmark for smaller placings is not uncommon.

12b. Funds

Whilst in Australia I had the good fortune of being able to visit and talk to the agricultural managers of Macquaire Bank Agriculture Fund, Warakirri, Kilter, Cowbank, Agman and the Sustainable Agriculture Fund and, when returning from Australia, Duxton Asset Management in Singapore.

High net worth individuals or family offices also invest in unlisted direct agricultural funds. Fondomonte and Calyx Agro, whom I visited in Argentina, would fit into this class, while Kilafen whom I visited in Uruguay were in the process of developing a fund.

All funds have different fee structures, but some of the hedge funds in London certainly charge 1.5% fees and will then take – as a bonus - 20% of income over any return that exceeds 12% per annum. In global agriculture, nearly all gains of over 12% are mainly due to the appreciation of asset value. It is debatable how much of this growth is due to a fund manager's selection of assets, and how much is due to being in the right sector at the right time.

Duxton Asset Management

In Singapore I had the pleasure of spending some time with Scott Weldon of Duxton,

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thanks to the help of Murray Gmeiner. Duxton Asset Management (Duxton) is now 100% owned by the management and is regulated by the Monetary Authority of Singapore.

Duxton manages about USD 300 million of agricultural investments. Clients like land as an asset class because of the food/commodity connection, and the fact it is a long term inflation hedge, but do not particularly like its Duxton's active farming illiquid nature. operations consist of 90,000 ha of farmland operating in Argentina, Australia, India, Tanzania, Vietnam and Zambia. Some of their funds have liquid assets in the form of cash, agricultural equities and commodity futures. Merchant banks such as Deutsche Bank, Morgan Stanley and Credit Suisse will offer clients exposure to these funds. There is however a minimum investment of US \$100,000, with a fixed term of 10 years in certain funds.

Fondomonte

Fondomonte was a fund that had invested directly in farms for long term capital growth on the land as well as returns from active farming. With funds there must be a potential exit strategy, either by sale of farms after 7 to 10 years, or by gaining sufficient size to go for an IPO which would produce liquidity.

It is reported that the original funds of Fondomonte were raised mainly within the UK and Ireland. US \$56 million was raised in 2005/2006 when 12,000 ha were acquired over 3 farms in the Buenos Aires province of Argentina. The initial plan was for a 5-7 year investment, with an exit strategy to either sell the farms or to go for an IPO if sufficient scale had been gained. In the case of Fondomonte it was sold to Almarai, a Saudi based company, for US \$83 m in December 2011 so gaining a capital growth of 48% over six years (about 8% per annum).

See photo on page 30: Direct drilling soya immediately into wheat stubble.

12c. Rental Model

This can be seen all over England with traditional UK estates based on the landlord and tenant system. The asset, being the land, offers an inflation hedge whilst the rent provides a yearly income. This model is used by UK institutions such as the Church Commissioners and The Crown Estate. I was particularly impressed by The Crown Estate's attitude to rents. They were trying to pilot a new rental system consisting of a base rent and secondary element based upon production costs on any new lettings.

One of the largest institutions offering this type of model is TIAA-CREF, one of the biggest US life insurance companies, with US \$400 billion in combined assets under their Within their agricultural management. portfolio they have 400 agricultural properties (worth US \$2.5 billion) in North America, South America, Australia and Eastern Europe. In Australia they use the specialist agricultural investment firm 'Westchester' in which they bought an 85% stake in 2010. Through Westchester they were definitely very active in buying farmland and renting it out in Australia. They were particularly active in New South Wales, in the region from Moree to Albury. Here an annual rental income of 6% of asset value was achievable for the more intensive irrigated cropping land, and 4-5% for the broadacre (cereal) cropping land, mostly growing dryland wheat.

These figures are in stark contrast to England, where traditional Agricultural Holding Act (AHA) tenancies yield about 1% return on capital. The newer Farm Business Tenancy



(FBT) arrangements yield a greater return but still significantly less than that in other countries for broadacre cropping land.

12d. Farming Partnerships

In Western Australia I visited a very well run farming partnership. A single high net worth individual had invested directly in land, and farmed in partnership with a respected local farmer.

These joint venture farming agreements, as we refer to them in England, have to be structured in a fair manner to incentivise all parties. In Western Australia the farmer and investor had formed a company to do the contracting with an agreed write down of machinery for depreciation with diesel and labour accounted for by operation. The investor's land holding was over 8,000 ha, the farmer's significantly less, but the benefit of scale was apparent. Modern combines, seeders and sprayers were operated, and given the scale now involved they could be utilised efficiently. This business structure will pay up to 6% of the value of the land holding directly to the investor out of farming profits.

Any return over this threshold is split $2/3^{rd}$ farmer, $1/3^{rd}$ investor, incentivising the farmer to achieve profits over 6%. Would a more sustainable model be the farmer taking a basic management fee and only $1/3^{rd}$ of profits over a 6% threshold?

As an English arable farmer, the consideration of a threshold rate of 6% would be monumentally difficult to achieve. Australia certainly offers the potential for higher returns based on asset value.

The key to success of this farmer/investor partnership in Western Australia

- 1. Single Investor
- 2. Very long-term policy, so much so that land is not sold.
- 3. Long-term environmental approach.
- 4. Profit made, will invest some back into the holding.
- 5. No overbearing management structure (visited only twice a year).
- 6. Understanding that agriculture is a cyclical industry.
- 7. Achievable threshold/share farming split



Source ABARE and Warakirri

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12e. Contract Farming/Share Farming

This is a commonly used business agreement in the UK, allowing expansion for ambitious farm businesses whilst retaining active farming status for the landowner. The contractor is responsible for all mechanised operations involved in growing and harvesting the crop, whilst the landowner, who retains ownership of the crop at all times, funds its growing and storage costs.

Often, similar charges are drawn by each party to cover machinery costs for the contractor and a notional rental figure for the farmer (landowner). A profit share on the remainder is on an agreement basis.

I did not personally visit any units operating under this structure abroad; however I am led to believe that a similar model to contract farming is used in Australia. In Australia 'share farming' has the problem of more variable returns. Here the landowner provides the land and finances the seed and base fertiliser, whilst the contractor provides the machinery, labour and diesel. Unlike the UK, often the contractor and land owner share the chemical costs and late season nitrogen fertiliser before dividing up the income 50:50. With all contract farming or share farming arrangements each one can vary.

12f. Syndication of Farms

Myfarm in New Zealand offers syndicated dairy farms and I appreciated the time Grant Rowan spent discussing the subject with me. This dairy farm investment company manages 43 dairy farm syndicates covering 14,000 ha and milking 32,000 cows. They are targeting investors with at least NZ \$2 million who can invest a minimum of NZ \$ 250,000. Here, members of the syndicate own a share in the farm managed by the company Myfarm. The investor has direct exposure to land values, agricultural commodities and to dairy productivity and efficiencies. Like all direct agricultural investments, they are potentially affected by many factors including climate, changes in commodity prices and currency as well as the essentials of animal husbandry and farm management. Myfarm charges 3.75% on value of assets for one-off syndication fees, then a sister company has the initial three year farm management contract.

The statistics for farm land value increases around the world are impressive; in New Zealand, Canterbury farmland has increased in value at an average of more than 8% per annum since 1954.

Since 2010, Myfarm has bought 19 farms with a total asset base of NZ \$ 270 million funded with NZ \$ 44.7 million (16%) debt. Their average EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization) was 7.8% p.a. for the 2010/11 operational year with a range of performance from 3.4 % for a newly purchased property undergoing development, to 13.3 % for a more mature property.

Myfarm Investment 1990 to today

Years	Internal Rate of Return (IRR)	Average N.Z. Dairy Farm IRR
1990-2007	24%	16%
2007-2010	10%	6%

In 2010, 50% of money invested was from repeat investors often investing in different properties to add diversity.

Syndicates like Myfarm offer young managers scope to invest their own leveraged capital in a farm they can manage, therefore



incentivising them for mutual benefit and offering them a route into the industry.

Investor purchasing a farm, but leaving a buy back option

The UK specialist real estate investment company called DGC Asset Management is involved in buying and developing farm properties for clients in Australia, Argentina and the UK.

This UK investment company offers another model for farmers and investors which aims to be sustainable.

Principles of the model

- Farmer is paid 80% of valuation (Royal Institution of Chartered Surveyors and one independent).
- Farmer agrees to pay 4-6% of purchase price as rental to the investor each year.
- 3. Farmer has right to buy farm back in 7 years, but at 80% of its valuation, or

the original investor purchase price, whichever is the greater.

- 4. The correct farmer selection is essential.
- 5. Intend that the farmer will make the 4-6% annual rental payments and will then be able to buy back the farm in order to crystallise the gains (or possibly losses) in the capital value of the farm over that 7 year term. This creates a very clear cut exit strategy and return model for both parties. Of course the value of land will most likely have changed in this period.

Challenges with this strategy

- Finding farmers with a real need/desire for a solution and who are able to overcome the prospect of selling their hereditary assets.
- Taxation issues as farmers may lose tax relief or incur capital gains tax in the UK.



Direct drilling soya immediately into wheat stubble in Argentina

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13. Sustainability

All the corporates I met attached great importance to sustainability, and the aesthetics of their properties. The planting of trees, improvement of habitat and the look of their farms is viewed as important. With time, the residential appeal increases, and therefore so does the value of the property.

Ingleby Farms are a worldwide group with livestock, arable and mixed farms. They operate in Argentina, Uruguay, Australia, New Zealand, Romania and United States. I came across them when travelling and found that they practised high levels of environmental, economic and social sustainability.

"We do not inherit the earth from our ancestors; we borrow it from our children". (Native American proverb used by Ingleby Farms)

Kilter Pty Ltd is the investment manager for VicSuper Ecosystem Services Pty Ltd to deliver Vic Supers' 'Future Farming Landscapes' (FFL) projects.

Kilter has a target of establishing projects worth Aus \$350 m over the next five years, and has already invested Aus \$110 m in land.

Kilter manages 8000 ha of agricultural land in northern Victoria that they would refer to as 'landscapes'. Here they have purchased, consolidated and re-invested in agricultural land to produce 'scale for efficiency and sustainability'. Eventually they wish to sell on or lease redeveloped assets over the medium to long term but intend to "protect and restore environmental assets across 5-40% of the landscape with protective covenants in place prior to on sale". Kilter profits directly from sustainability with returns from carbon sequestration, vegetation protection offset payments, flood mitigation payments as well as water trading.

13a. Water

Kilter is currently managing over Aus \$80 million worth of water and entitlements. Trading of water became easier in 2007, when land and water were unbundled in Australia. There is now an established market for water entitlements, and an annual allocation to the entitlement owners.

Water, like land, is intrinsic to agriculture and investors can offer to purchase and lease back water entitlements in the future

In Victoria, entitlements in early 2012 were trading at Aus \$800/mega litre, but have been as high as Aus \$2,000. Federal government in recent years has been a large buyer of entitlements in the Murray Darling river system in S.E. Australia. They are endeavouring to reduce the water extracted, and keep an environmental equilibrium. The government has stated that it wished to take 20% of the entitlements on the Murray Darling system. Annually, the allocation that is based on your entitlements can be traded, but its value can vary enormously. In early 2012 in Victoria, allocations, the actual usage, were trading at Aus \$20 mega litre but have been as high as Aus \$2000/mega litre in times of extreme drought. It is normally around Aus \$50-150/mega litre.

Water, like land, is intrinsic to agriculture and investors can offer to purchase and lease back



water entitlements in the future, whilst trying to achieve yields of $7 \rightarrow 9\%$ per annum.

13b. Biodiversity Investment

In Victoria, vegetation can be extremely valuable. Housing and infrastructure projects often have to remove native trees, and as part

of their planning permission they often have to buy vegetation offsets. Black Box trees (a tree species) as offsets have recently been sold by Kilter for Aus \$1,500/tree, and as Melbourne housing moves westwards some native Western Basalt Plains grassland is being destroyed. This is rare in Victoria and offsets may cost nearly Aus \$1,000,000/ha.



Kangaroos in the Australian bush



14. Currency

The exposure of a business to foreign exchange rates is very relevant, and how and if this can be mitigated will depend upon individual circumstances.

Whilst speaking with Simon Weaver, a director of Magyar Farming Company Ltd in Eastern Europe, he informed me that his business initially took a long term view on currency when it was set up by eight UK investors. As with any investment, at some time this currency will have to be returned to the domestic denomination.

Suffice to say, every investor should be fully aware of the potential for gains or losses that can occur from currency movement. In the

Every investor should be fully aware of the gains or losses that can occur from currency movement

UK the Church Commissioners, for example, employ a specialist currency hedging manager. Black Earth Farming, whom I visited in Russia (farming 318,000 ha), stated in their annual report that, out of a total loss of US \$41 million, US \$5 million of that was due to loss on currency movement.

15. Valuation

Valuations need to be done on a regular or rolling programme basis. It is usual for a large national firm to be used due to its local knowledge, status and likely sufficient indemnity cover. In Australia firms such as Herron Todd White, M3 and Colliers are often used by the corporates.

Formal valuations in the UK are done to the 'Red Book' standard, which is a highly regulated valuation process governed by RICS.

A valuation is obviously only a subjective observation, and unfortunately one which can be questioned.

In South America, Adecoagro have a general policy of selling a farm a year. This has the effect of consolidating gains (or losses) and gives shareholders the confidence and security that the valuations in their books are in line.

16. Taxation

Tax is an important issue when farming. In Poland and Ukraine corporates are normally taxed at 23%, but can opt for a fixed land tax option which is often at a nominal rate, and based upon the land farmed rather than the profits. When returning funds to the UK, different account structures are required to account for tax regimes. For instance, Continental Farmers Group use a holding company in the Isle of Man, because if UK based it would be subject to a statutory 10% deduction on dividends.



17. The Ease of Doing Business and Ethics round the World

In the UK, we as farmers often think that the level of bureaucracy is growing and we are often frustrated by our own government and the E.U. However in the context of global agriculture, farmers in the UK are probably not too badly off in this regard. In the Ukraine, government control is very high. For example, invoices have to be perfect and original to recover VAT.

To put this into some kind of context, I have graphed part of the World Bank's table of 'The Ease of Doing Business'. The lower the score on the scale on 'The Ease of Doing Business' index, the more it suggests that the regulatory environment is conducive to the starting and operation of a local firm.

In order to add another dimension to problems facing business around the world I have added the 'Corruption Perception Index'. This ranks countries/ territories based upon how corrupt their public services are perceived to be by Transparency International UK.

I was pleased to see that, in the list of the nineteen industry sectors covered, the agricultural sector was the most likely never to bribe.



The Ease of Doing Business and Corruption Perception Index

Source:- World Bank and Transparency International UK



18. Middle Eastern Sovereign Wealth Funds and the Chinese

Middle Eastern Sovereign Wealth Funds

During my study tour I became aware that the Middle Eastern Sovereign Wealth funds were looking to purchase commercial, corporateorientated farms. In December 2011, just days after Jim McCarthy had shown me around Fondomonte SA in Argentina, the Saudi company Almarai paid US \$83 m (€65 m) for the three farms totalling 12,306 ha that I had visited. As a UK arable farmer, these farms were a pleasure to visit, and would be classed as very commercial. Based in the Buenos Aires province of Argentina, they were growing maize, wheat, soya and double cropping opportunities were available. There were large fields blocked by land type with very few fences. These units would offer reasonable returns on capital and could only be described as "professionally run commercial farms". Operations were based on the Argentinian system of using contacting gangs for harvesting and sowing. These farms may be four or five hours' drive from the Argentinian ports of Rosario and Buenos Aires, long distances in UK terms, but short in South American. Produce could easily be exported to the Middle East if necessary and therefore offer the element of food security to the buyers as well as investment growth.

In 2010 Hassad Foods of Qatar announced its intention to invest US\$700m in agriculture around the world to help ensure its food security. Whilst in Australia, I came across their presence in the commercial farming areas of NSW and Victoria. These farms, whilst offering food security, would also stand on their own as an investment decision.

Hassad Australia now has a total of 250,000 ha in the states of Queensland, NSW, Victoria and Western Australia supplying 30-35% of Qatar's needs. In early 2012, it bought 40,000 ha of mainly grassland at Telopea Downs in Western Victoria totalling 10 different holdings. This included 1,300 mega litres of irrigation entitlement and 25,000-30,000 sheep that were run mainly for sheep meat production. Farms were recently changing hands for Aus \$750 to \$1,125/ha, but the rumours indicate that people were offered Aus \$1,250 to Aus \$1,750/ha. This raises the contentious issues of whether institutional funds or foreign money have the effect of increasing land values in a local area? Conversely it could be seen as injecting capital into the rural economy, with the benefits that may bring to the local community.

Chinese Interests

I actually came across little evidence of Chinese land buying in the areas where I travelled in Australia, but they have certainly been concentrating in the Northern Territory, buying large extensive grassland stations.

Chinese involvement in Africa is of great interest and speculation around the world. They are certainly actively getting involved in infrastructure projects in return for access to agricultural land

In Argentina I found no evidence of Chinese interest in the intensively farmed area of the Santa Fe and Buenos Aires provinces. Again rumours were circulating about an agreement between the Chinese and the Provincial Government of Rio Negro (in the southern Patagonia region). China's Beidahuang food company was trying to lease 300,000 ha of land, and would agree to invest in local

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infrastructure and put capital investment into the local irrigation systems.

Chinese involvement in Africa is of great interest and speculation around the world. They are certainly actively getting involved in infrastructure projects in return for access to agricultural land. Hard information is difficult to come by, but sites like www.landcoalition.org/land-matrix and www.farmlandgrab.org offer an insight.

Food Processing Businesses

When in New Zealand the presence of Chinese investment was in evidence. Bright Dairy of China had recently purchased a 51% stake of Synlait's milk processing facilities.

The press appeared to be obsessed with the Chinese buying farmland, but at the end of the day of far greater concern must be the buying of secondary processing facilities

The Chinese firm Shanghai Pengxin eventually won approval in April 2012, at its second attempt, for its plans to buy Chaffer farms. This is around 8,000 ha in New Zealand's North Island, a deal worth £106 million (NZ \$ 210 million). In March 2011 the Chinese were trying to acquire a 51% stake in P G Wrightson (NZ's largest real estate agent and agricultural merchant). Ultimately were the Chinese after the prestigious real estate department or the intellectual property of the company's grass seeds breeding business?

Since deregulation of the Australian wheat export arrangements in 2008, influence by foreign investors has increased significantly, with half of the 23 licensed wheat exporters being foreign owned. In dairying, since the deregulation of 2000, Fonterra (New Zealand) and Lion (Kirin, Japan) process about 45% of Australian national milk production. In meat processing, Brazilian-owned JBS Australia is Australia's largest meat processor. In the sugar industry, three foreign owned milling groups account for nearly 60% of Australia's sugar production (*Australian processing details from ABARES report Nov 2011*).

While travelling in Australia and New Zealand the press appeared to be obsessed with the Chinese buying farmland, but at the end of the day of far greater concern must be the buying of secondary processing facilities. By owning secondary processing facilities in countries like Australia, the Chinese would ultimately have a far greater control on food and the potential to secure food products of the right quality and price for their own country.



19. United Kingdom Environment

UK agriculture revolves around high land capital values and a relatively low annual return. This is in contrast to many other countries like Argentina and Australia where land prices bear more relevance to the agricultural return capacity. UK land prices are dominated by many factors, as well as the fundamental agricultural capabilities. Major factors affecting UK land are EU agricultural policy, the tax regime of inheritance, and rollover reliefs available. These all distort the value of land in the UK in relation to its earning capacity. The high population density of the EU, especially in England, may lead to and diversification development opportunities, thus further distortions.

UK agriculture was once dominated by the traditional estates and their tenant farms; these still exist but have declined in area significantly since 1900. Institutions such as The Crown Estate, Church Commissioners and many Oxbridge Colleges still have significant land portfolios as part of their overall investment strategy.

There is definitely a case for land to be part of a large diverse investment portfolio

The 1970s saw a large influx of pension fund money into land, generally operating on the traditional landlord/tenant model. The inflationary times of the 1970s saw huge gains in land prices but since then there has been a gradual withdrawal from land by this institutional sector. This is partially due to complexities of valuation and administration within their portfolios, and also the excellent performance of equities during the 1980s and 1990s. It could be argued that the institutions also lacked real long term vision. The London Stock Exchange has no companies actively farming in the UK, the last being Sentry PLC which was bought back off the stock market in 2001.

Though there are a few very small agricultural funds with UK portfolios one mentioned earlier in the report is 'DG Asset Management'. Investors in such funds struggle with the concept of the high asset cost of land and the relatively low income return of investing in farms in the UK.

What the UK has seen, is a large number of private property companies and high net worth individuals, who can see beyond the high capital cost and low income return and who may also benefit from our present tax system, buying farms in their own right. Smaller farms purchased by individuals are often let out or contract farmed, while very large units are often farmed in hand, even in East Yorkshire. Warter Priory Estate farms about 10,000 arable acres in hand and is owned by Malcolm Healey who bought it in 1998 for a reputed £48m. Albanwise Limited also farm approximately 10,000 acres in hand in East Yorkshire, much of it owned.

Whether it is for agricultural, sporting or tax reasons, UK farmland has seen a large inflow of capital from individuals rather than agricultural based funds in recent years, and as the table on the next page shows, there have been rewards.

With the recent big increases in land values in the UK, whether now is the right time to buy – we will see!

But there is definitely a case for land to be part of a large diverse investment portfolio.

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UK Annual Investment Returns to December 2011

Source: IPD/Savills Research (to Dec 2011 – 2011 Let Land, Residential & Forestry estimated)



Cows in Australia, grazing New Zealand style

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20. Conclusions for Investors

- 1. Population growth and a perceived rise in the wealth of the middle classes in developing countries has driven demand for agricultural commodities, accelerated by the increased use of bio fuels.
- 2. Land is regarded as an inflation hedge and generally has a low correlation with other asset classes and acts to diversify an investment portfolio.
- 3. Investors need to balance risk versus potential gain.
- 4. The opportunity for investors to be able to develop the production potential and infrastructure of a farm is of great importance.
- 5. The barriers of culture, language and politics need to be understood and embraced by investors.
- 6. The understanding of one's financial exit strategy is essential.



21. Conclusions re Agricultural Structures for Investors

Listed stock exchange companies	Relatively liquid and easy to access especially for smaller investors, but assets often trade at a discount.
Agricultural funds	Often include a portfolio of farms and therefore spread an investor's risk but fee structures need to be right and often aimed at high net worth individuals with a five to ten year time frame.
Landlord/tenant model	Simple stable system, if investors aim for the highest rents it may lead to short cuts being taken by the farmer which long term could lead to the devaluation of the land
Partnership	If the correct partner is chosen, often the best for farmer and investor if a long term view taken.
Contract Farming and Share Farming	Brings tax advantages to non farmers and opportunities to farmers to spread overheads.
Syndicates	Similar to funds, but this model offers young managers the scope to invest their own leveraged capital in a farm they can manage, therefore incentivising them for mutual benefit and offering them a route into the industry.
Farming in own right	To achieve scale a high capital requirement is needed. Farming is complex and will need a manager or consultant, but may suit an individual with personal interest, or offer tax benefits.



22. Recommendations for Yorkshire Farmers

What relevance has my study been to a Yorkshire farmer? Many clear messages come from seeing how the corporates operate.

I came back inspired by what can be achieved from professionally run commercial operations. Large operations can come with unwieldy management and high structural costs. Yes, we in the UK may struggle to gain economies of scale, but sometimes diseconomies emerge. Due to the high capital cost of land in the UK we need to be ultra professional.

Expansion of farms to create economies of scale will involve increasing numbers of partnerships/contract farming arrangements in the future.

Opportunities for younger farmers to develop an operation are likely to come from non traditional structures.

- 1. The financial returns from the asset of bare land need to be identified and separated from the financial returns of actively farming.
- 2. There is benefit in retaining a non executive director, assuming the correct skill set, in large scale corporate agriculture. Likewise, access to a trusted third party (a farmer/consultant) at UK farm level, to challenge, develop new ideas and provide clear focus with no family axe to grind is highly beneficial though absolute honesty is paramount. This should not be difficult in East Yorkshire!
- 3. The use of benchmarking to help analyse your business by comparing financial data.
- 4. Don't underestimate a strong legal system with recognised, well established land occupation rights and political stability.
- 5. We are in a global market, beware of complacency; risk management is more important than ever.

23. Post Nuffield



I would like to thank my sponsors, the Yorkshire Agricultural Society, and the Nuffield Farming Scholarships Trust, for giving me the opportunity to operate out of my comfort zone and allowing me to meet many interesting and progressive farmers and figures from the financial world.

Undertaking a Nuffield Scholarship involves spending a significant period of time away from your family and business. It will definitely affect the way you view your business in the future, as well as your family. I would like to think that I am now a more open minded person; able to view things from a different perspective and that it has ultimately changed me for the better!

Post Nuffield, I have already become involved in benchmarking our farms against other English arable farms. Though not a big enough business to employ a non executive director, I do intend to have an outside individual challenge what we do and look at our strategic direction on a more regular basis. I will continue to improve the aesthetics, biodiversity and environment in which we farm. I intend to increase my involvement within the NFU, and hopefully get involved with one of their committees in the future.

I intend to be more supportive of GM crops in the future after seeing first hand the advantages of their use in Argentina and Australia. The huge potential to reduce chemical usage and improve crop yields by the ability to adopt new techniques was indeed an eye opener.

On our own farm I will continue to look for opportunities to expand, not only through the traditional methods of buying or renting, but also contract farming/partnership opportunities. The high capital cost of land ownership in the UK will certainly limit our ability to expand if purchasing is the only option!

Hopefully there will be some opportunity to get involved with agricultural investment funds in the future – we will see.



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continued overleaf



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