Emerging investment trends in primary agriculture

A review of equity funds and other foreign-led investments in the CEE and CIS region

FAO INVESTMENT CENTRE

DIRECTIONS IN INVESTMENT

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Ian Luyt
Agribusiness Expert, Novirost Limited

with contributions from:

Nuno Santos
Economist, Investment Centre Division, FAO

Arianna Carita
Economist, Investment Centre Division, FAO

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For further information on this publication, please contact:
Director
Investment Centre Division
Food and Agriculture Organization of the United Nations (FAO)
Viale delle Terme di Caracalla, 00153 Rome, Italy

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FOREWORD

The increase in agricultural commodity prices, and in particular the 2007–2008 spike, has led to notable growth in public and private investment in primary agriculture. This reassessment of the case for investment in primary agriculture has translated into a relatively new phenomenon of private and quasi-private large-scale acquisitions of farmlands. Such investors in farmland originate from different sectors, including pension funds, equity funds and sovereign wealth funds.

In many instances these large-scale investments enhance efficiency and productivity. They contribute to modernizing the primary sector through new technologies and skills, and facilitate access to inputs and output markets. However, this phenomenon also raises a number of concerns regarding inclusion, sustainability and social impact.

FAO is contributing to a deeper understanding of this phenomenon through a series of research studies and associated activities. This study is part of a broader group of knowledge products recently developed by FAO focusing on the potential and impact of agricultural investment in different regions. In particular, it directly contributes to analytical work carried out in 2010 by the Organization's Rural Infrastructure and Agro-Industries Division (AGS), published as *Agricultural Investment Funds for Developing Countries*, and by the Trade and Markets Division (EST) in 2012. In this context, FAO is also exploring both economic aspects and social trends and impacts of foreign investment in developing country agriculture, as well as food security dimensions of agricultural land-based investments. This includes analysis of both potentially negative aspects of agri-investment, such as concern over "land grabbing", and positive investments in value addition, agro-infrastructure and/or services that strengthen agricultural competitiveness and inclusiveness of agri-food chains. In addition, FAO is encouraging the development of voluntary standards and guidelines for socially and environmentally sustainable agricultural investments.

While a wide range of actors are investing in primary agriculture globally, this study focuses on the relatively recent phenomenon of investments by private equity funds and other institutional investors in selected European and Central Asian countries. In particular, it analyzes the nature and operations of such funds, including associated risks and returns from the investors' point of view.

The study was presented and discussed in its preliminary version at the Global Forum for Food and Agriculture (GFFA) in Berlin, 2013, during a round table session on "Agricultural equity funds" organized by the FAO Investment Centre and FAO's Regional Office for Europe and Central Asia (REU) at the invitation of the German government. The session included stakeholders from civil society, private and public sectors, and the final version of the study incorporated useful comments and suggestions made by the audience.

Eugenia Serova,
Director,
Rural Infrastructure
and Agro-Industries
Division, FAO

Gustavo Merino,
Director,
Investment Centre
Division, FAO

Gilles Mettetal,
Director,
Agribusiness, EBRD

Anne Fossemalle,
Director,
Equity Funds, EBRD

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The main author of the study is Ian Luyt, Agribusiness Expert, Novirost Limited. Nuno Santos and Arianna Carita, Economists, Investment Centre Division, FAO, wrote the Executive Summary and Chapter 1, and made revisions to the overall document. Emmanuel Hidier, Senior Economist, Nuno Santos and Ece Filiz, Associate Banker at the EBRD, coordinated the implementation of the study.

Iain Henderson, Senior Advisor; Todd Nalven, Senior Advisor; and Marika Saridi, Senior Analyst (all from Novirost) contributed to drafting sections of the report, while Austin Peat, Novirost, contributed to editing the report. Yaroslav Udovenko led the analysis of companies with the support of Ivan Panin and Oleksandr Lozovyi, all from Fovil Securities.

The study was reviewed by Pascal Liu, Economist, Trade and Markets Division, FAO; Erik Jesper Karlsson, Foreign Direct Investment Expert, Trade and Markets Division, FAO; Calvin Miller, Senior Officer, Rural Infrastructure and Agro-Industries Division, FAO; Michael Marx, Credit and Rural Finance Officer, Investment Centre Division, FAO; Ece Filiz, Associate Banker, EBRD; Lyudmyla Lishchenyuk, Alejandro Trenor, Laurence Bahk and Meltem Ankara, Bankers, EBRD; and Emmanuel Hidier.

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ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
AIM	Alternative investment market (LSE segment)
AUM	Assets under management
Bnl	Billions of litres
CAP	Common Agricultural Policy
CBoT	Chicago Board of Trade
CEE	Central and Eastern Europe[1]
CIS	Commonwealth of Independent States[2]
CPI	Consumer Price Index
DFI	Donor-funded initiative
DIS	Direct income support
EBITDA	Earnings before interest, taxes, depreciation and amortization
EBIT	Earnings before interest and taxes
EBRD	European Bank for Reconstruction and Development
EU	European Union
EU-27	Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom
EXW	Ex-works
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	A database by the Statistical Division of the Food and Agriculture Organization of the United Nations
FDI	Foreign direct investment
FMCG	Fast moving consumer goods
GDP	Gross domestic product
GMO	Genetically modified organism
Ha	Hectare(s)
HNWI	High net worth individual
IFC	International finance corporation
IFI	International financial institution
IMF	International Monetary Fund
IPO	Initial public offering
Kcal	Kilocalorie
Kg	Kilogram
KPI	Key performance indicator
KZT	Kazakhstan Tenge
LIFFE	London International Financial Futures and Options Exchange
LSE	London Stock Exchange
M&A	Mergers and acquisitions

1 Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Kosovo, Latvia, Lithuania, Former Yugoslav Republic of Macedonia, Montenegro, Poland, Romania, Serbia, Turkey

2 Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyz Republic, Moldova, Mongolia, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan. Georgia and Mongolia are not members of the CIS but are included in the group "for reasons of geography and similarities in economic structure" (IMF classification)

MENA	Middle East and North Africa
Mt	Metric tonnes
NFRS	National Farmer Registration System
NYSE	New York Stock Exchange
OECD	Organisation for Economic Cooperation and Development
p.a.	Per annum
PE	Private equity
R&D	Research and development
REIT	Real Estate Investment Trust
ROE	Return on equity
ROIC	Return on invested capital
SDR	Swedish Depository Receipt
SFRY	Socialist Federal Republic of Yugoslavia
SG&A	Selling, general and administrative expenses
SMP	Skimmed milk powder
SWF	Sovereign Wealth Fund
TRY, TL	Turkish Lira
UN	United Nations
US	United States of America
USD	United States Dollars
USDA	United States Department of Agriculture
USSR	Union of Soviet Socialist Republics
WMP	Whole milk powder
WSE	Warsaw Stock Exchange
YTD	Year-to-date

EXECUTIVE SUMMARY

In recent years, private equity funds that invest a substantial part or all of their capital in primary agriculture have increased both in number and volume globally. Investment in primary agriculture is an emerging asset class among private equity funds and other institutional investors, one that has attracted increasing attention following the commodity price spikes and associated warnings on food security from 2007 to 2008.

The European Bank for Reconstruction and Development (EBRD) is now considering investment in such funds as part of its operations. The purpose of this study, conducted under the FAO/EBRD cooperation, is to help the EBRD understand and assess the benefits and risks of investment in primary agriculture, in particular through private equity funds, in selected countries which are significant producers of agricultural commodities.

The study addresses existing investments by equity funds and other similar structures[3] and the potential for these in ten countries within the EBRD region of operations in Central and Eastern Europe (CEE) and the Commonwealth of Independent States (CIS) (the "selected countries").[4] These countries were selected because of their significant agricultural potential and not necessarily because of any existing or prospective investments in private equity funds in primary agriculture.

The CEE and CIS regions are significant players in global agricultural production, and all of the selected countries are significant exporters. Their combined agricultural GDP of over USD 230 billion represents around 5.5 percent of the global agricultural GDP of USD 4.2 trillion (pers. comm. with FAO). The Russian Federation and Turkey are among the top ten agricultural producers in the world.

The selected countries also have 417 million hectares (ha) of combined agricultural land, which represents about 9 percent of global agricultural land, and 233 million ha of combined arable land, or 17 percent of global arable land.[5]

The study estimates that fund, institutional and other foreign-led private investments in primary agriculture in CEE and the CIS have, since transition, totalled some USD 8.0-9.0 billion.[6] These investments cover about 4.2 million ha of farmland, which represents approximately 1.0 percent of the agricultural land and 1.8 percent of the arable land in the selected countries.

Of these investments, some USD 2.1 billion has been invested by private equity funds either as dedicated primary agricultural sector funds (six funds) or as portfolio investments within sector or regionally focused funds (four funds). Almost all fund

3 "Other similar structures" refers to investments being made by private equity groups (non-fund structure) generally with similar investment objectives to that of private equity funds.

4 The selected countries are: Belarus, Bulgaria, Croatia, Kazakhstan, Poland, Romania, The Russian Federation, Serbia, Turkey and Ukraine.

5 The major CIS agricultural producers, Kazakhstan, The Russian Federation and Ukraine, account for over 75 percent of the arable land within the selected countries, but produce under 50 percent of the combined agricultural GDP – an indication of their unexploited potential.

6 In the context used in this study, investment in primary agriculture comprises farmland (as an asset play) and farming (as an operational play).

investments have been made since 2006. These investments cover some 1.1 million ha, which represents about 0.2 percent of the agricultural land and about 0.4 percent of arable land within the selected countries.

While there are a wide range of actors investing in primary agriculture globally and within CEE and the CIS, this study focuses on the relatively recent phenomenon of investments by private equity funds and other institutional investors. Moreover, the study focuses mainly on large-scale arable agriculture, as this segment of primary agriculture has been the primary focus of private equity funds and institutional investors in CEE and the CIS.

In addition, this study emphasizes several new elements in support of a deeper understanding of this emerging asset class. Firstly, it provides a comprehensive overview of private equity fund investments today in large-scale primary agriculture in the selected countries within the EBRD region. Secondly, it introduces insights from global experience with fund investments in this asset class in terms of common practices and the scale and context of the investments. Thirdly, the study includes an evaluation (as an asset class) of the performance of seven publicly listed farmland companies active in CEE and the CIS (of which five are foreign-led investments). Finally, the study reviews the current status and prospects for private equity fund investments and the asset class in general within the selected countries.

The methodology for the study consisted of both primary data collection and use of secondary sources and research (including FAO, OECD and World Bank, publications). Primary data collection mainly took the form of interviews with private equity funds, financing institutions, farmland companies (including farmers/ farm managers), and other parties across the region, as well as a comprehensive review of literature, media and other material on recent equity funds and institutional investments in primary agriculture in CEE and the CIS, and globally.

The term "investment in primary agriculture" is used in this study to describe an investment where the investor has an active strategic and operational management role. "Investment in farmland" implies a mostly passive investment in the asset itself.[7] A distinctive feature of most recent investments in primary agriculture and farmland in CEE and the CIS is the requirement for the investor to play a hands-on management role in the investments.

In view of the small number of private equity funds invested in primary agriculture, in particular in CEE and the CIS, and the lack of data on the performance of these funds, an analysis was conducted of seven publicly listed farmland companies invested predominantly in the Russian Federation and Ukraine.[8] The objective of this analysis was to provide an empirical basis as well as insights into key drivers affecting the performance of the asset class in the regions. However, while providing useful insights into performance to date, the relatively short period of existence of

7 The terms "primary agriculture" and "farmland" are used interchangeably throughout the study.

8 There are 11 "pure play" farmland companies active mostly in The Russian Federation and Ukraine. Their predominant business activity is arable crop farming. The companies are listed, variously, on exchanges in Warsaw, Stockholm, London, Frankfurt, Vienna, Dublin and Paris. The seven companies selected for the sample control a land bank of about 1.1 million hectares (in total, about 0.7 percent of the total arable land in The Russian Federation and Ukraine) and have a market capitalization of about USD 850 million (as at December 2012). Operations are located predominantly in The Russian Federation and Ukraine, and to a very small extent in Poland. These seven companies and three others are grouped within the CIS Farmland Index managed by Foyil Securities.

these companies (as reporting public companies), as well as the small sample size, limited the development of more comprehensive conclusions.

Performance during the period under review was also impacted dramatically by several extraneous events, notably the extreme drought in the region in 2010 and the direct and indirect impact of recent macroeconomic conditions in Ukraine. Consequently, insights developed must be viewed within this context and a longer period of performance is needed to fully understand the performance and prospects of this particular category of asset class.

The relatively recent nature of investments by private equity funds means that no major funds have reached mandated tenures. Consequently, there is no information available publicly or otherwise on completed fund performance and disclosures from existing funds are sparse at best or held as proprietary information. Generally, the analysis in this study suggests that a further period of performance is needed before any clear conclusions can be drawn.

The case for investment in primary agriculture

Until recently, historical evidence suggested that the productive potential of global agriculture was sufficient to meet demand growth. The trend has clearly reversed following the spike in agricultural commodity prices in 2007–2008, when global food supply and demand were placed at the top of most policy agendas. Additional factors, such as the emergence of biofuels, contributed to exacerbating existing supply-demand tensions.

Global food demand has grown significantly over the past 35 years, mainly as a result of population growth and rising per capita incomes in developing countries. Global per capita food consumption measured in terms of calories consumed has increased significantly, by 17 percent from some 2 370 kcal/person/day in 1970 to 2 770 kcal/person/day in 2006. Additionally, there have been significant qualitative and quantitative changes in dietary patterns, including a major shift from staple foods such as roots and tubers towards more value-added products, such as livestock products and vegetable oils.

These trends are expected to continue in the short to medium-long term and will increase demand for vegetable oils, meats, sugar and dairy products, as well as increase demand indirectly for coarse grains and oilseeds in livestock feeds. Additionally, preferences will continue to shift towards healthier sources of animal protein and food – for example, switching from red meats, butter, milk powders and sugar towards poultry, fish and cheese.

Recent FAO-OECD projections indicate that countries in the CEE and CIS regions are expected to play an important role in producing the additional agriculture output, in particular in livestock, dairy products, grains and oilseeds. For example, Kazakhstan, the Russian Federation and Ukraine offer substantial unrealized grain production potential compared to other regions of the world, and are projected to expand agricultural production and trade capacities significantly by 2021: for example, the Russian Federation is projected to achieve the highest share of global wheat exports (17 percent) by 2021 and Ukraine is expected to gain increasing global export shares of milk products and oilseeds.

Global population is projected to increase by 34 percent from the 2010 level to reach 9.3 billion in 2050. The additional food supply needed is significant: for example, annual cereal production needs to increase by 46 percent and meat production by some 76 percent. Overall, agricultural production needs to grow by at least 60 percent by 2050 in order to meet demand growth. This increase represents projected net investments of USD83 billion per annum.

Global economic growth and stronger demand for agricultural products are expected to help maintain prices of agricultural commodities at relatively high levels over the next 10 years at least. However, and in spite of higher prices, the growth rate of agricultural production is projected to fall from the 2.2 percent per annum achieved during the past decade, to an average 1.3 percent per annum during the period from 2005/07 to 2030, and to 0.8 percent per annum from 2030 to 2050.

Production increases during recent decades have overall been achieved mostly from increases in crop yields. In relative terms, crop yield increases have slowed over the past 50 years and this declining trend is projected to continue in most countries. However, crop yields are still well below their potential in many regions, including the CEE and the CIS, and there exists significant opportunity for yield improvements. Globally, limitations in the expansion of agricultural land suggest that most of the expected increase in production will continue to come from crop yield improvements.

In summary, global food supply and demand projections indicate an increasing role and significant opportunity for primary agricultural production in CEE and the CIS, and in particular in the major arable cropping regions in Kazakhstan, the Russian Federation and Ukraine. These regions have significant utilized and untapped potential for the production of meat and dairy products, oilseeds and coarse grains, which exhibit some of the strongest demand growth prospects. Additional incentives to invest, which vary in emphasis among the countries of the regions, include growing competencies in the production of specialized and niche products, comprehensive export networks, and proximity to European, Middle Eastern and Asian markets.

Finally, discussions with the above-mentioned stakeholders in the region indicate that, as a broad estimate, agricultural output could be improved by at least 30-40 percent overall in the ten countries covered by the present study, assuming adequate levels of investment and full utilization of arable farmland, and in conditions of efficient operational scale, skilled management and technology, and open markets.

The issue of "land grabbing"

Agricultural land is often viewed as an emotive asset class, more so than most other investment categories. The issues of rural land ownership and food production often raise political concerns. In particular, the issue of "land grabbing"[9] has received media attention in recent years. This term has been used with different meanings,

9 A commonly used description of "land grabbing" is "the contentious issue of large-scale land acquisitions: the buying or leasing of large pieces of land in developing countries, by domestic and transnational companies, governments, and individuals" (*Wikipedia* contributors, 2013). The International Land Coalition, which defines itself as "a global alliance of civil society and intergovernmental organisations working together to promote secure and equitable access to and control over land for poor women and men through advocacy, dialogue, knowledge sharing and capacity building", defines "large-scale land grabbing" as "acquisitions or concessions that are one or more of the following: (i) in violation of human rights, particularly the equal rights of women; (ii) not based on free, prior and informed consent of the affected land-users; (iii) not based on a thorough assessment, or are in disregard of social, economic and environmental impacts, including the way they are gendered; (iv) not based on transparent contracts that specify clear and binding commitments about activities, employment and benefits sharing, and; (v) not based on effective democratic planning, independent oversight and meaningful" participation (International Land Coalition, 2012).

and is sometimes even applied to socially, environmentally and financially sound land acquisitions in highly structured agricultural markets. The term is, however, mostly used to characterize land acquisition and other investment proposals negotiated between governments and foreign investors, sometimes without consultation with local communities, or to refer to more serious situations that may lead to substantial negative social and environmental impacts. Until now, studies on international land grabbing have focused almost exclusively on large-scale acquisitions of farmland in Africa, Central Asia, Latin America and Southeast Asia that followed the global food price crisis in 2007–2008. These developments were viewed initially as a new pathway towards agricultural development, but have since been criticized by a number of civil society and governmental organizations who argue that the developments may have negative impacts on local communities and the environment. An increasing body of evidence on the impacts of land grabbing in developing countries now reinforces this viewpoint.

There are, however, important differences between land acquisitions and investment processes in CEE and the CIS and some developing countries (namely those that gave rise to the widely criticized land grabbing phenomenon). Foreign investment in primary agriculture in CEE and the CIS has taken place since the early 1990s with governments being generally supportive of foreign investment, in particular at regional level where these investments are seen as important for attracting skills, technologies and capital, and stabilizing and developing rural economies. Furthermore, most transactions have taken place between private actors with the objective of obtaining financial returns or a higher degree of vertical integration. This is unlike the experience of some developing countries where transactions took place mostly through state and private or sovereign companies and with a focus on securing food, raw materials, feedstock and also biofuels supply for the investors' home market.

In fact, the present study identified only two instances of non-purely private to private transactions in the region: an investment by a Chinese company[10] in Bulgaria and a recent agreement made between the governments of Abu Dhabi and Serbia to finance and produce agricultural commodities on existing state farms. This latter instance is currently the only known investment where the motive is the export of agricultural products to the investor's home country.[11]

Furthermore, the issue has been less politically charged than elsewhere because of the relatively small presence of foreign investors in most countries in the region and also, importantly, because agricultural reform and consolidation of small farm plots has been actively encouraged by governments.

Despite the fact that land rights in the CEE/CIS seem to be better defined and clearer than in many developing countries, there are often weaknesses in the practical implementation of regulations tied to the use of land. Moreover, it is important to note that the CEE/CIS region has arguably more potential than most areas in Africa or Asia, and has attracted the attention of many investors in the past few years. This results in the growing risk of "land grabbing", as documented by some authors and reviews. These seem to be particularly relevant at local level; for example, local

10 Tianjin State Farms Agribusiness Group Company reportedly controls 2 000 hectares of farmland in northwestern Bulgaria. There are also Chinese, Japanese and Korean farmers active in some regions of the The Russian Federation Far East, but as far as is known these are private ventures.

11 A very recent announcement made as this study was being concluded concerns an offer made by a consortium of Saudi Arabian investors for the total shareholding of Continental Farmers Group Plc. The consortium includes SALIC which is the agricultural investment arm of the Saudi Arabian sovereign wealth fund. This will be the first major investment by sovereign investors in primary agriculture in CEE and the CIS (CFG, 2013; see also other references to this acquisition within the study).

authorities bypassing official regulations or infringing the rights of local landholders and exploiting informational advantages vis-à-vis the local population.

The experience with equity funds and other institutional investments in primary agriculture

Global overview

Investments by funds and other institutions in primary agriculture globally have in recent years expanded beyond farmland to include investments in private equity (for example, in large-scale farming companies, and associated storage and logistics firms), public equities and commodity index funds.

Investments in primary agriculture by equity fund and other private institutional investors are driven mostly by two fundamental factors: (i) potential gains from farmland value appreciation and (ii) potentially attractive operating returns.

Other key drivers that influence institutional investors in particular, include: (i) inflation hedging (farmland prices in the United States have shown a high correlation to the consumer price index); (ii) low correlation to broader capital markets (these two factors are leading motives for institutional investment in farmland); (iii) attractive risk-adjusted returns from own and lease investment models ("the comfort of direct farmland ownership combined with a model of advance cash rents" (AgCapita, 2012)), and (iv) diversification into alternative (real) assets.

The study identified some 57 equity funds and other similar structures that invest predominantly or exclusively in primary agriculture worldwide. There is generally very little information available publicly on the scope and activities of these structures; none of the funds is publicly listed and most are in early stages of their mandated tenure. Consequently, estimates of the size and scope of these investments have been developed mostly from media and literature research and, in limited instances, from interview sources. The study estimates that total funds committed or being targeted for investment in primary agriculture within these structures are currently between USD22-24 billion.

The study also identified 17 funds that are fully or mostly invested in listed public equities in the agricultural sector and/or agribusiness-related companies globally (few if any of these funds are invested in primary agriculture). The total amount invested by these funds exceeds USD2.9 billion.[12]

Institutional investors have a relatively very small presence in primary agriculture globally: a recent estimate made by TIAA-CREF (2012a) places this investment at "less than 1% of global farmland". The institution notes that this is "due to historically high barriers to entry, such as relatively low liquidity and limited reporting and research, and a large number of off-market transactions". Additionally, the paucity of institutional quality asset managers limits the scope of investable opportunities.[13]

12 The study also identified 55 Exchange Traded Funds (ETFs) or Exchange Traded Notes (ETNs) focused on the agriculture sector, either exclusively or as part of a wider commodity platform. Funds invested in these instruments exceed USD5.86 billion.

13 Macquarie Agricultural Funds Management (MAFM) estimates that funds have so far invested in only USD30-40 billion of the "USD1 trillion investible potential in farmland worldwide" (Macquarie, 2012). Oakland Institute, an independent policy institution, estimates institutional investments in farmland worldwide at USD10-25 billion since 2007–2008 and forecasts that this figure "might double or triple in the coming years" (Oakland Institute, 2012b).

Most institutional investors focus on one or several of four regions. These are Australia/New Zealand, Brazil, Canada and the United States.[14] These regions account for more than 80 percent of the current and targeted value of investments globally and over 64 percent of the number of individual funds and other institutional equity structures invested in primary agriculture.

Table 1: Number of funds and funding amounts

Region	Number of funds	Share of total funds (%)	Funding (USD billion)	Share of total funding (%)
North America, Latin America, Australia/New Zealand	37	64.9	18.8	83.2
EBRD region	16	28.1	2.4	10.5
Africa	4	7.0	1.4	6.3
Total	**57**	**100**	**22.6**	**100**

Source: research from publicly available information and interview sources.

Note: Fund amounts include a mix of committed and targeted funding and should therefore be regarded as indicative only. There is no significant presence of equity funds invested in arable crops farming in Asia.

The four most favoured regions are also seen as accounting for "about 65-70% of the current investable market in farmland globally". The regions have in common the following key features: (i) strong agricultural potential, (ii) well-developed farmland markets, (iii) significant depth in farming expertise, and (iv) effective legal and contracting processes. Other significant agricultural producers, such as Argentina, currently have limitations on foreign ownership of farmland. Moreover, in the case of Africa, the smaller scale of operations, availability of skilled expertise and potential risks concerning ownership of land, limit the current scope of investment opportunities. Most countries in CEE and the CIS are, at this stage, generally not significant investment priorities for most large institutional investors for various reasons, including perceived complexities in doing business and country risk perceptions.

Global investment vehicles

Investments in primary agriculture and farmland by institutional and other private investors are being made through various structures. Globally, there is no predominant structure and this depends largely upon investor perspectives and the local investment context. Commonly used structures include closed-ended private equity funds and private investment companies. In the United States, Real Estate Investment Trusts (REITs) are a popular structure for direct investments in farmland.

Private investment companies have been the favoured investment structure in primary agriculture in Central European countries, the Russian Federation and Ukraine. The private investment company structure accounts for about 80 percent of the value of investments made since transition by institutional investors, with the balance of investments being made through private equity funds.

Most funds and other equity investment structures in North America operate an "own and lease" model where the land is leased to third-party operators. The depth of farming skills and other features of the markets means that these structures almost never have to manage farming operations directly.

14 There is no significant presence of the listed funds invested in arable crops in Asia.

Funds invested in Africa, Australia, New Zealand and Latin America generally own or lease the land and operate their ventures, either through direct farming management or by managing third-party farming contractors.

The strategy among Latin American investors/farming companies is generally to own or lease and operate farmland, or to buy, develop and sell farmland. Capital monetized in this latter manner is then re-deployed into new land with high transformational potential. Land sales are also common: for example, Adeco Agro reports that the company has sold at least one of its mature farms in each of the past seven years.[15]

In Africa, there are four major funds invested predominantly in primary agriculture. In all instances, the investment model is mostly or entirely an "own and operate" model. Farmland under control is generally much smaller in extent than, for example, areas controlled by similar structures in Eastern Europe and Latin America, because of topographical features and the generally more fragmented structure of farming in Africa. In most instances, investments are planned to act as a hub around which small out growers can develop.

Returns

Information on the performance of investments in primary agriculture is limited to disclosures by publicly listed companies and a few listed REITs (mostly in Bulgaria). "Pure play" listed farmland companies comprise a relatively small universe of companies invested in Argentina, Australia, Brazil, the Russian Federation and Ukraine (totalling about 15-20 companies).[16] There is significant heterogeneity in local operating conditions, including agronomic and climatic potential, as well as in significantly different business models. Comparisons on a global basis therefore should be made with care and viewed mainly as just broad indicators of performance.

Regarding the publicly listed companies, performance has been characterized by volatility and poor or non-existent profitability. Most of the underperformance can be attributed to management's inability to cope with the pace of investment and in some cases the business per se, and partly to climatic and market conditions. Farming on a large scale has proven to be much more complex than initially anticipated and the learning process has been an expensive one for shareholders.

There are, however, exceptions and examples of success in companies that have managed their business models in competent fashion. Industrial Milk Company (IMC) is an example of a successful and well-managed company amongst the CIS-listed companies.

Stakeholder perceptions suggest concerns about the harm done to the sector's image from overly optimistic predictions at launch and ensuing (and continuing) underperformance of many funds and listed companies. Current global liquidity limits further restrict appetite for these assets and the particular fund's ability to exit portfolio investments at satisfactory prices.

15 AdecoAgro (2013) reported that their most recent farm sale announced in January 2013 yielded an IRR of 34.2 percent. The company reported that the land was purchased for USD625 per hectare in 2002 and sold in 2012 for USD7 058 per hectare. In October 2012, BrasilAgro (2011) reported a farm sale at almost double the acquisition price and an IRR of 27 percent over two years. Other private investors in Latin America, which follow this strategy of sourcing, developing and selling farms, include Calyx Agro, Campos Orientales, Cazenave and El Tejar.

16 This estimate refers to companies cultivating more than 100 000 hectares. There are several smaller listed companies in these regions, which often follow a more diverse strategy. Examples include Agrowill (Lithuania), First Farms (Romania, Slovenia), KTG Agrar (Germany, Lithuania) and Linas Agro (Lithuania).

There is little or no information available publicly on the performance of equity funds. In addition, most fund structures are in the early stages of investment, none have reached maturity, and there have been no major investments exited. As a consequence of the absence of performance data, indications of returns are still mostly reliant upon an assessment of projections made by funds themselves. These generally indicate investment tenures of 7 to 10 years and indicative returns from 8-25 percent. The standard response to questions about anticipated returns is "10-15 percent" but this has yet to be demonstrated in any investment that has gone to full cycle.[17] The following table provides an overview of anticipated returns as stated by funds.

Table 2: List of funds showing stated anticipated returns

Fund	Anticipated annual return (%)	Investment model	Geographic focus
Emergent Africa Land Fund	~20	Own and operate farms and related assets	Central and Southern Africa
Futuregrowth Agri-Fund	CPI + 10	Own and operate farms, mostly fruit and vegetables	Southern Africa
Greenfield Investments	15-25	Own and operate farmland, dairy, viticulture	New Zealand
JPT Capital Agrifund	9.25	Own and operate wheat farms	Australia
Lumix AgroDirect Fund	10-25	Lease and operate farms	Paraguay, Brazil, Uruguay, Argentina
Rabo Farm Europe Fund	8-9	Own and lease farmland	Central and Eastern Europe within the EU
Silverlands Fund	15-20	Own and operate farms/other investments	Central and Southern Africa

Sources: fund fact sheets and other reports.

Increasing interest of institutional investors

A survey of private financial sector investment in agriculture conducted in 2010 (Highquest Partners, 2010) found that endowment funds, high net worth individuals (HNWIs) and family offices have historically been the principal source of capital in private equity funds and other institutional investment vehicles investing in primary agriculture. This has reportedly changed in recent years with hedge funds and large institutions, including pension funds and other endowment funds, investing in the asset class through existing vehicles such as private equity funds and publicly listed companies, or in some instances sponsoring their own structures to attract co-investors to invest alongside them.

The recent development of a set of Principles for Responsible Agricultural Investment that Respect Rights, Livelihoods and Resources (PRAI), by FAO, IFAD, UNCTAD and the World Bank, has facilitated a framework for governance and reporting and a more harmonized approach to investments in farmland.

17 Research indicates that returns from investment in farmland in the United States have exceeded 10 percent per annum over the past decade. The Farmland Property Index, managed by the National Council of Real Estate Investment Fiduciaries (NCREIF) in the United States, covers 548 properties owned exclusively by "qualified tax-exempt institutional investors", mostly pension funds. In 2012, the index indicated an annual return on annual cropland of 17.41 percent, of which 12.62 percent was land appreciation and 4.39 percent was income return (NCREIF, 2012).

In addition to PRAI, several initiatives are ongoing to facilitate the development of agricultural investment principles and guidelines. In this context, it is worth mentioning that the Committee on World Food Security has also initiated a process to develop and ensure broad ownership of principles for Responsible Agricultural Investments that contribute to food security (PRAI principles) (see FAO, 2013), which is supported by FAO. Moreover, a number of institutional investors have developed the Principles for Responsible Investment in Farmland ("Farmland Principles") (see UNPRI, 2012).

It is important to note the differences between investing in direct freehold ownership of farmland and investing through equity positions in agricultural enterprises, funds or other form of securitized structures. Direct investments in farmland exhibit in most instances the characteristics of real estate investment, providing potentially stable lease income and capital appreciation – with an important proviso being the ability to source competent farming operators to lease and manage the land. However, a feature of most funds and other institutional structures investing in primary agriculture, more so in the CIS than in CEE and elsewhere, has been the need to actively manage the investments (farming operations) through the creation of specialist management platforms because of the general lack of suitably competent and experienced independent farming operators in many regions.

Globally, investors in primary agriculture can therefore be grouped broadly into three groups: (i) investors viewing agriculture as a real estate investment and seeking returns from rentals and land value appreciation with no active farm management, (ii) investors focused on active operational management and seeking returns from both operational profitability and land value appreciation,[18] and (iii) investors investing in primary agriculture as an upstream source of raw materials for related agro-processing activities. Moreover, there are several categories of institutions investing in primary agriculture:

Pension funds and endowment funds are increasingly investing in primary agriculture as part of an alternative or real asset allocation strategy. Examples include TIAA-CREF (US),[19] APG (the Netherlands),[20] PGGM (the Netherlands), AP2 (Sweden),[21] PKA (Denmark),[22] BT Pension Scheme, Railpen (UK),[23] Environment Agency Pension Fund (UK), the Pension Protection Fund (UK), the New Zealand Superannuation Fund, and Harvard University's Endowment Fund.

Hedge funds active in farmland investments include Insight Investment (global focus), Ceres Partners (US focus), Galtere Limited (Australia, South America),

18 The first two groups are those more pertinent to the recent institutional foreign led investments in primary agriculture observed in CEE and the CIS.

19 In May 2012, TIAA-CREF launched a new venture, Global Agriculture LLC, which plans to invest USD2 billion in farmland in Australia, Brazil, Eastern Europe and the United States. Co-investors include Swedish pension fund AP2, British Columbia Investment Management Corporation (bcIMC), an independent investment management company, and the Caisse de dépôt et placement du Québec, which manages funds for public and private pension and insurance plans. The USD2 billion in farmland investments proposed by the new venture represents less than 0.3 percent of the combined total of assets under the management of these four entities, of over USD700 billion.

20 APG (2013) reports that 0.25 percent of the fund's total assets is invested in farmland, in Australia, Eastern Europe, India and Latin America.

21 AP2 currently has a threshold of 10 percent of the fund portfolio invested in alternative assets, which include real estate, agricultural land and timberland. These assets are viewed as a diversification from the predominant equity risk in the overall fund portfolio (IPE, 2013).

22 PKA (2013) reports that it has earmarked DKK1.3 billion (EUR150 million) of its DKK160 billion assets under management for investment in primary agriculture (these include investments in funds investing in Africa and Australia).

23 Railpen (2012) invests in farmland as part of a 25 percent allocation to alternative investments (mainly infrastructure, private equity, hedge funds and commodities) worldwide.

Ospraie Management (South America), Passport Capital (US) and Vulpes Investment Management (New Zealand, South America, US).

Sovereign wealth funds are now active investors in primary agriculture and agribusiness. Examples include Qatar's sovereign wealth fund, which is invested in Latin America (AdecoAgro) and through a subsidiary, Hassad Food, in Australia and Sudan. Recent media reports link the Qatar Investment Authority to farmland investments in Turkey and Ukraine, while sovereign wealth fund structures from Abu Dhabi have recently signed an agreement with the Serbian government to develop state farmland. The terms of agreement reportedly include the exclusive right to export the farm products back to Abu Dhabi.

There are also initiatives in Saudi Arabia and other Gulf countries, which are intended to support investments by local companies in agribusiness investments in overseas countries. These include "King Abdullah's Initiative for Saudi Agricultural Investment Abroad", which seeks to enhance food security in Saudi Arabia by investing in target countries that include Ukraine and Kazakhstan; the Saudi Agricultural and Livestock Investment Company (SALIC), whose objective is to become a global agricultural investor and which targets Bulgaria, Hungary, Kazakhstan, Kyrgyzstan, Poland, Romania, the Russian Federation, Ukraine and Uzbekistan as potential investment "target geographies"; and the Food and Agribusiness Fund set up by the Islamic Corporation for the Development of the Private Sector, which funds equity investments in companies in the Islamic world including Kazakhstan and Turkey. However, while these initiatives have attracted media attention, there are so far no investments from these sources of any significant scale in the CEE and CIS regions.

A newly established venture, United Farmers Holding Company (UFHC), recently announced an offer to buy the total shareholding of Continental Farmers Group, a leading listed farmland company invested in Poland and Ukraine. UFHC is owned partly by SALIC, which is the agricultural investment arm of the Saudi Arabian sovereign wealth fund.[24]

Diversified investment companies are hybrid structures that invest in agri-funds or pure-play investment companies; they can be publicly listed or privately held. They operate like hedge funds or family offices with actively managed investment portfolios and often hold long-term positions. Examples include AB Kinnevik and Vostok Nafta, which are invested in Black Earth Farming in the Russian Federation.

Investments by international financing institutions

The International Finance Corporation (IFC) is one of a few international financing institutions (IFIs) invested in equity funds invested in primary agriculture. IFC views its investment as playing "a catalytic role in mobilizing (international) capital into an underfunded asset class" as well as "facilitating the alignment of fund and asset management with international best practices". IFC is invested in two fund structures investing in primary agriculture: Altima One World Agriculture Fund, which has invested in four portfolio companies in Africa, Australia, Europe and Latin America; and Advance Terrafund REIT, which is listed on the Bulgarian Stock Exchange. IFC views this latter investment as supporting "the expansion of an innovative asset class that will have significant benefits by providing a private sector solution to the

24 For further details of UFHC's offer for Continental Farmers Group, announced 28 March 2013, see Hemscottir (2013).

urgent need for consolidation of agricultural land in Bulgaria and further support the development of the real estate and farming markets". Furthermore, IFC notes that "farmland consolidation is expected to create opportunities for investment and growth of efficient, modern farming companies, which, in turn are key to a competitive Bulgarian agriculture." (IFC, 2008)

In Africa, examples of IFIs invested in equity funds include the African Development Bank, the Development Bank of Southern Africa, Banque Ouest Africaine Développement and the ECOWAS Bank for Investment Development, which are invested in the African Agriculture Fund, and KfW, which is a lead investor in the Africa Agriculture and Trade Investment Fund. However, neither of these funds has any particular focus on primary agriculture.

The experience of the CEE and CIS region

Foreign-led investments in primary agriculture in CEE and the CIS region have been underway since the early 1990s (in the Russian Federation and Ukraine, predominantly from about 2002 onwards). Accession to the European Union has also played an important role in driving investor interest in those countries affected. Most investments in Central European countries have come from smaller investors and vertically integrating companies. Investments in the CIS countries have come mostly from private investment groups funded by institutions with a bias towards Scandinavian sources. However, the largest single private equity group invested in primary agriculture in the CIS is NCH Capital Inc, based in New York.

Investments by funds and other institutions in large-scale primary agriculture in the region are a recent phenomenon, starting in about 2006. While investments from these sources have increased significantly since then, these still constitute a very small share of total investment in primary agriculture in the region and also a small fraction of total private equity investments.

The scale of investments in the large-scale production countries, the Russian Federation and Ukraine, has also been small relative to their potential, and investment continues to lag most other regions for reasons including the complexity of doing business, uncertainties about investment performance in the sector, and country risk perceptions.

The study identified ten equity funds and six REITs that invest predominantly or exclusively in primary agriculture in CEE and the CIS. Again, there is very little information available publicly on the scope and activities of these funds; none of the funds is publicly listed and most are in the early stages of investment. Consequently, estimates of the size and scope of their investments have been developed mostly from media and literature research, as well as interviews. The study estimates that total funds committed or being targeted for investment within these regions is approximately USD2.4 billion.

The study also identified 17 funds that are fully or mostly invested in listed public equities in the agricultural sector and/or agribusiness-related companies globally (very few of these funds are invested in primary agriculture). The total amount invested by these funds exceeds USD2.9 billion.

Investments in CEE and the CIS have been driven mostly by farmland value appreciation and operating profits. In Central European countries, increases in land valuations are premised upon convergence with comparable valuations in mature

farmland markets within the European Union. EU subsidy payments have also placed a floor under prices in accession countries. Valuations in CIS countries are benchmarked against land prices in comparable large-scale farming environments in Latin America.

Climatic and soil conditions and local operating conditions vary significantly across the selected countries. Furthermore, varying historical circumstances and approaches to land reform have also resulted in different farmland ownership and control structures. Consequently, there are important differences in the characteristics of investment opportunities in primary agriculture among these countries. Table 3 highlights some of these characteristics.

Table 3: Farmland issues and fund investments in the ten selected countries

Country	Jurisdiction	Basis of farmland reform/ownership	Status regarding foreign ownership of farmland	Funds currently invested
the Russian Federation	CIS	Land shares	Ownership through company structure	Yes
Ukraine	CIS	Land shares	Lease through company structure	Yes
Belarus	CIS	State control	No foreign ownership	No
Kazakhstan	CIS	Land shares	Ownership through company structure	Yes
Poland	EU	Restitution	Ownership through company structure	Yes
Romania	EU	Restitution	Ownership through company structure	Yes
Bulgaria	EU	Restitution	Ownership through company structure	Yes
Croatia	EU acceding	Restitution	Ownership through company structure	No
Serbia	EU candidate	Restitution	Ownership through company structure	Yes
Turkey	EU candidate	Inheritance	No foreign ownership	Yes

Source: Novirost Limited derived from author's analysis.

In particular, there is wide variation in the nature and structure of farmland markets among the selected countries:

In the Russian Federation, farmland remains undervalued relative to its global agro-peers and to its inherent production potential. Abundant supply, low levels of operational profitability, a lack of depth in market actors, and demand impacted by sector and country risk perceptions, has kept the market at low levels.

In Ukraine, only leasehold is currently allowed. The timing and the eventual outcome of lifting the moratorium on the purchase and sale of farmland present significant uncertainties.

Farmland in Belarus remains under state control, but there have been initiatives to make farms more commercial and independent of state funding.

Land and rental prices in Poland, Bulgaria and Romania have in many instances been underpinned by EU subsidies. More recently, prices are being driven by domestic sale and rental markets. Prices have increased significantly since EU accession and are converging slowly on those in mature EU markets. As in all markets, consolidated tracts of land attract premium prices.

Serbia and Croatia are to some extent affected by EU accession prospects, but more significantly by strong local demand for large tracts of high-quality farmland. There is a very small presence relatively of foreign investors in primary agriculture.

In Kazakhstan, domestic investment in large-scale primary agriculture is significant, despite imperfect lease conditions. Ownership of farmland is allowed but uncommon with most large-scale farmers preferring to lease land on attractive rates.

In Turkey, the fragmentation of farms, high farmland prices and foreign ownership restrictions hinder opportunities for institutional-scale investments.

However, investments in the selected countries are also conditioned by some common features, of which the following are the most important:

Land fragmentation. In most instances, individual citizens own most of the farmland in small lots. Land rights have been gained through historical restitution processes (in CEE countries) or the award of land shares (in CIS countries). In Turkey, the highly fragmented ownership of land derives overwhelmingly from common inheritance practices. This is seen as an impediment to productivity improvements – consequently, land consolidation is a priority in most countries. Generally only fully consolidated land has any meaningful collateral value.

Agriculture is supported by most governments in the region. Primary agriculture enjoys high priority from government in all the selected countries – the sector benefits, in most instances, from state support; additionally, direct subsidies, taxation incentives and other supports are in many instances important catalysts for investments.

Limitations to foreign property. There are prohibitions or restrictions on foreign individuals owning farmland in all the selected countries.[25] However, in most instances, foreign investors can control farmland (either owning or leasing the land) through locally registered company structures. Investment in primary agriculture and farmland is in most instances driven overwhelmingly by local private investors.

Skills, technology, and access to finance and markets. These have improved in almost all countries since transition, although major needs remain. As a general observation farming remains significantly undercapitalized.

There is, in most instances, significant potential to improve average crop yields and overall productivity, as well as total production.

Investment vehicles and investors

Most recent foreign-led investments in primary agriculture in CEE and the CIS have been made through closed-end private equity funds or private investment companies with additional capital being subsequently raised through stock market listings. REITs have been popular in farmland investments in Bulgaria.

Private equity fund structures account for about 20 percent of the total investments made in primary agriculture in the regions. Table 4 shows the extent of investments made through equity funds.

25 The limitation on ownership by foreign individuals (other EU citizens) in Bulgaria, Poland and Romania will fall away when the current European Union derogations end.

Table 4: Investment by equity funds in primary agriculture in CEE and the CIS since 2006

# of funds	Fund type	Dates launched	Estimated investment (USD million)	Countries invested in	Land under control (hectares)
6	Dedicated funds	2006–2008	1 620	the Russian Federation, Ukraine, Poland, Romania, Bulgaria	774 000
4	General funds	2005–2007	460	the Russian Federation, Ukraine, Kazakhstan	320 000
10	**Total**		**2 080**		**1 094 000**

Source: fund documentation and media research.

Note: "Dedicated funds" are those funds investing only in primary agriculture (farmland). "General funds" are regionally focused funds, which include investments in primary agriculture (farmland) as part of a wider portfolio. Land under control includes an estimate for Rabo Farm Europe Fund whose land holdings not publicly disclosed.

Private equity funds. There are ten private equity funds invested in primary agriculture in the region. Of these, six funds invest only in primary agriculture with total funds committed of about USD1.62 billion. These are: Altima One World Agriculture Fund (which is invested in Spearhead International, which has activities in Poland, Romania and Serbia); Ceres Agrigrowth Investment Fund, NCH Agribusiness Partners Fund I; North Bridge AgRoInvest Fund; Rabo Farm Europe Fund and QVT's investment in Vostok Agro.[26] Investment models include combinations of owning, leasing and operating the land, with the decision to lease out farmland or manage it directly generally driven by the availability of competent independent farming operators (within the region or country of investment).

The remaining four equity funds are only partially invested in primary agriculture, which constitutes only one of several portfolio investments within the fund. These funds include Egeli & Co Agriculture Investment Trust, NCH New Europe Property Fund II, SigmaBleyzer Southeast European Fund IV and UFG Real Estate Fund.[27] The total value invested in these funds is approximately USD460 million. The investment model in all instances is to own (or lease) and operate the farmland.

There are a number of small closed-ended and open-ended funds active in the region. Funds committed by these do not exceed USD10-20 million. Other examples include fund-like structures such as that used by Jantzen Development to make agricultural investments in the Czech Republic, Romania and Slovakia.[28]

REITs in Bulgaria. There are six REITs with a current market capitalization of approximately USD285 million invested in farmland in Bulgaria (December 2012). These structures are listed on the Bulgarian Stock Exchange. The investment model is generally an own and lease model.

26 Northbridge AgRoInvest Fund is managed by North Bridge Agri Invest, a fund of funds invested in agri-funds in the European Union. Vostok Agro is a portfolio investment made by QVT Financial, a New York-based hedge fund.

27 Egeli & Co Agriculture Investment Trust is a closed-end fund listed on the Istanbul Stock Exchange.

28 Mintridge International and Velcourt Group recently announced a similar concept, which will invest in primary agriculture in Romania (Bloomberg, 2013).

Private investment companies. This has been the preferred model for foreign investment in primary agriculture in CEE and the CIS. Examples include foreign-led companies such as AgroGeneration, Alpcot Agro, Black Earth Farming, Continental Farming Group and Trigon Agri, and domestic players such as Agroton, Industrial Milk Company, KSG Agro and Mriya. Most of the major farmland companies formed in this way have subsequently listed on European exchanges.

The funds managed by NCH Capital represent the largest single foreign investors in primary agriculture in the region, with funding from mostly North American investors. Pension funds and other institutional investors, mostly European, have funded most other investments. There are no strategic or trade investors present in any of the funds or other investment structures,[29] and no capital has been raised on local or regional markets. Table 5 lists known institutional investors investing in the region.

Table 5: Current sources of institutional investments in primary agriculture in CEE and the CIS

Investor	Fund location	Amount invested	Investee	Description
TIAA-CREF	United States	Not disclosed	Invested in Rabo Farm Europe Fund	Fund invests in farmland in Eastern Europe within the EU
AP2	Sweden	USD 40 million	Alpcot Agro, Black Earth Farming	Listed companies invested in the Russian Federation and Ukraine
APG	Netherlands	Not disclosed	Invested in Rabo Farm Europe Fund	Fund invests in farmland in Eastern Europe within the EU
PFZW (PGGM)	Netherlands	Over EUR 50 million	NCH Capital Rabo Farm Europe Fund	Funds invest in farmland in Eastern Europe within the EU, and in the CIS
CalPERS	United States	Over USD 1.2 million	Black Earth Farming (BEF)	Listed company invested in the Russian Federation
Nordea Investment Funds	Sweden	Not disclosed	Alpcot Agro	Listed company invested in the Russian Federation and Ukraine
Swiss Life	Lichtenstein	Not disclosed	Alpcot Agro	Listed company invested in the Russian Federation and Ukraine
Alecta Pensions försäkring	Sweden	Not disclosed	Trigon Agri/BEF	Listed companies invested in the Russian Federation and Ukraine
Holberg Funds	Norway	Not disclosed	Black Earth Farming	Listed company invested in the Russian Federation
Varma Mutual Pension	Finland	Not disclosed	Black Earth Farming	Listed company invested in the Russian Federation

Sources: Fund data and media research.

Returns

Based on the evaluation of seven publicly listed companies active in the region and whose core focus is primary agriculture, the study highlights a number of further insights into the performance of the asset class. This group of companies controls a land bank of some 1.1 million hectares and has a combined market capitalization of about USD850 million.[30] Operations are located predominantly in the Russian Federation and Ukraine. These companies are grouped within the "Foyil CIS Farmland

29 There are a few exceptions. Examples include Sucden's investment in farming in The Russian Federation (vertically integrated into sugar processing), Olam's recent investment in Rusmolco (and associated farming operations), and Glencore's investment in farming in Ukraine. In this study, a strategic investor is defined broadly as an investor from the same industry sector as the firm in which they hold a stake.

30 There are 11 publicly listed "pure play" farmland companies active in CEE and the CIS. These companies control a land bank of some 1.6 million hectares and have a market capitalization of some USD1.6 billion (as of 22 December 2012). The combined land bank represents less than 0.5 percent of the total farmland in the region.

Index", a share performance index developed by Foyil Securities in Kyiv.[31] The evaluation was intended to identify and evaluate key performance drivers in order to provide indications of what has driven and will drive performance of the companies individually and as a group (or "asset class") in future.

Table 6: Key data on the selected companies

Company	Location of operations	Exchange listing	Date listed	Date established	Land bank (hectares)	Market cap (USD millions)
Agrogeneration	Ukraine Argentina	Paris	May 2010	2007	50 000	73.5
Agroton	Ukraine	Frankfurt	November 2010	1992	171 000	63.1
Alpcot Agro	the Russian Federation Ukraine	Stockholm	October 2009	2006	281 300	101.7
Black Earth Farming	the Russian Federation	Stockholm	December 2007	2005	318 000	286.5
Continental Farming Group	Ukraine Poland	London and Dublin	June 2011	1994	23 700	64.7
Industrial Milk Company	Ukraine	Warsaw	May 2011	2007	82 700	159.1
Trigon Agri	the Russian Federation Ukraine Estonia	Stockholm	May 2007	2006	172 000	100.8
		Total			**1 098 700**	**849.4**

Sources: Bloomberg; London Stock Exchange, 2012. Market capitalization as at 22 December 2012.

Some key insights emerge from the detailed analysis of this group of companies, namely:

- The companies have as a group (or "asset class") underperformed in terms of market valuation relative to global agricultural benchmarks.[32] During the five-year period of review, the CIS Farmland Index has underperformed relative to global agricultural indices. The performance of the companies within the index has overall been volatile, and this is to a great extent due to the impact of climatic influences on operations and markets.
- Underperformance is due to the weak performance of the larger companies in particular. There may also be some market discount applied to the asset class and country risk though neither of these impacts is considered highly significant in the analysis.[33] Furthermore, liquidity of the shares (or lack thereof) has had little or no impact on performance and other, mostly operational issues significantly outweigh this factor.

31 The number of companies in the index increased from one company in 2008 to currently ten companies in 2012.

32 These companies are grouped within the Foyil CIS Farmland Index developed by Foyil Securities, Ukraine. Three other indexes are used as benchmarks: the Rogers International Commodities Index - Agriculture Sub-Index (RICI-A), the DAX Global Agribusiness Index and the S&P GSCI Agriculture & Livestock Index.

33 A recent corporate credit rating assigned by Standard & Poor to Ukrlandfarming highlights some of the sector, country and governance risk issues impacting market perceptions: "We base our view of Ukrlandfarming's weak business risk on the company's exposure to supply and demand of commodity-type products within the volatile agribusiness industry. In addition, the company generates its revenues and earnings within Ukraine, where all its operating assets are located. We consider the company's exposure to Ukraine as a key risk factor. We view Ukrlandfarming's corporate governance as 'weak', owing to the dominance of its owner … [and] the lack of independence of the board of directors, and material related-party transactions." The report further notes that, "A revision of the outlook to stable, all else being equal, would depend on pronounced improvement in UkrLandFarming's corporate governance structure, discontinuation of related-party transactions, and moderation of its expansion strategy." (CBonds, 2013)

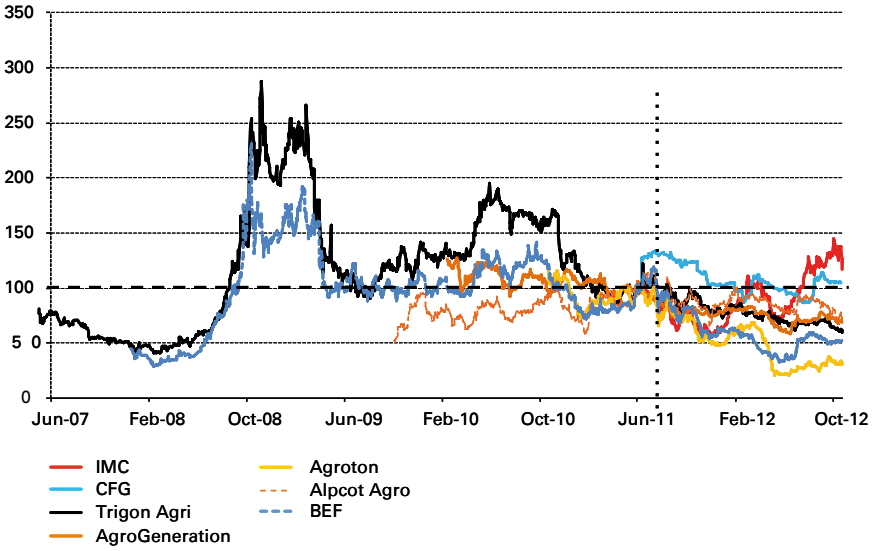
- Performance during 2012 demonstrated that an index made of these companies can match the results of global indices. During 2012, the CIS Farmland Index performed closer to the other indices (though with greater volatility), demonstrating that this group can match the results of the more mature indices.
- Companies whose share prices have fared best are those that have pursued disciplined business models that emphasized efficiency and performance, over the achievement of scale in a short time frame. Top performing companies expanded from a relatively modest scale in manageable steps. The best performing companies are all located in Ukraine.
- Equity capital raised prior to the global financial crisis in 2008 was done at extraordinary valuations with the valuation basis being the scale of the land bank and expectations about its potential (rather than operating profitability). However, the basis of valuing farmland companies changed following the crisis to traditional measures of operating profitability.
- Two of the sample companies conducted initial public offerings in 2007 during a period of market exuberance and relatively accessible debt. In spite of the economic slowdown and the food price shocks of 2008, interest in the sector has remained strong and the rest of the companies achieved public listings by June 2011.

The figure below shows the relative stock price performance of the seven companies since listing. While the period of analysis and sample are limited, an interesting trend emerging is that companies whose share prices have fared best are those that have pursued disciplined business models emphasizing efficiency and performance from the start, through a staged expansion process, and which kept costs under control (e.g. Continental Farmers Group (CFG), Industrial Milk Company (IMC)). Conversely, the share prices of companies that acquired large tracts of land in a short time continue to struggle (e.g. Alpcot Agro, Black Earth Farming).

The analysis further indicates correlations between financial performance and scale of operations, location and mode of expansion. The most highly rated companies IMC and CFG have operations based mostly in Ukraine, where only leasing of farmland is possible, and expanded their operations in manageable steps from a relatively modest starting scale. The two companies with the weakest performance to date control the largest land banks, each with over 250 000 hectares. During the period of analysis, these companies operated mostly (Alpcot Agro) or entirely (Black Earth Farming) in the Russian Federation.

The sample companies were further evaluated within a framework using the following five key performance drivers: location of assets, infrastructure (storage), business model (implementation and intensity), governance (reporting and transparency) and financial management (overhead cost control and other measures). The company IMC is ranked first and constitutes an example of the potential of the sector, when managed properly.

Figure 1: Share price performance of the selected companies since listing



Sources: Bloomberg; Foyil estimates, 2012.

Note: The companies are anchored at index value 100 at the date of the last IPO (June 2011 - Continental Farming Group).

Table 7: Financial performance showing company ranking

Company	Ranking	EBITDA per ha, USD, 2011	ROIC 2011	Ave ROIC 2007–2011	ROE 2011	Ave ROE 2007–2011	Share price since IPO
IMC	#1	422	24%	28%	16%	21%	9%
CFG	#2	506	7%	3%	5%	2%	4%
Trigon Agri	#3	169	5%	-2%	1%	-3%	-50%
AgroGeneration	#4	146	4%	-7%	6%	-59%	-10%
Agroton	#5	98	4%	16%	0%	-13%	-65%
AlpcotAgro	#6	-2	-8%	-10%	-9%	-11%	-63%
Black Earth Farming	#7	-40	-8%	-7%	-21%	-13%	-76%

Sources: Company data; Foyil estimates.

Note: Share price as at 19 November 2012.

Share price performance in comparison to other approximate peer groups

Comparison of CIS farmland companies to approximate peer groups indicates that investors currently discount the CIS farmland companies substantially against both CIS vertically integrated peers and global farmland peers.

For example, the median EV/EBITDA multiple for the CIS farmland group (5.3X in 2012) is less than 50 percent of global agro-peers (11.8X). Similar differences are shown in comparing price/earnings and EV/land ratios. These discounts indicate a lack of faith in future earnings and/or a discount being applied to this group in general.

In comparison to EV/EBITDA multiples in CIS vertically integrated peers, analysis shows that the CIS farmland group is valued higher at 5.3X versus 5.1X in CIS vertically integrated companies (2012 EBITDA), but lower at 3.3X versus 4.6X in 2013 projections. These year-on-year differences are likely the result of more

aggressive improvements in profitability forecasted for the farmland group than for the more mature vertically integrated peers. This conclusion would also apply to the comparison of P/E multiples. Finally, EV/land multiples are much higher for the CIS vertically integrated group (naturally as land holdings play a lesser role in their overall operations).

Table 8: CIS agro peers vs. vertically integrated and global agro-peers

Company	MCap, USD million	Price/ book	Price/earnings			EV/EBITDA			EV/land 2012
			2011	2012 estimate	2013 forecast	2011	2012 estimate	2013 forecast	
CIS agro peers									
Black Earth Farming	287	1.6	NMF	NMF	20.6	NMF	14.8	8.4	1.1
IMC	159	1.2	9.2	6.1	3.9	7.2	4.3	3.1	2.1
AlpcotAgro	102	0.5	NMF	12.4	3.5	NMF	3.9	2.1	0.4
Trigon Agri	101	0.6	NMF	NMF	3.9	8.8	8.0	3.5	0.8
Agroton	63	0.4	NMF	2.4	4.4	9.5	2.6	2.6	0.6
CFG	65	0.7	15.1	9.9	NA	7.9	6.4	5.1	2.6
AgroGeneration	74	1.4	22.5	NA	NA	14.8	NA	NA	1.9
CIS agro peers, *median*		**0.7**	**15.1**	**8.0**	**3.9**	**8.8**	**5.3**	**3.3**	**1.1**
Global agro peers									
AdecoAgro	1 024	1.0	18.3	19.5	13.1	7.8	8.4	5.4	4.4
SLC Agricola	940	1.0	19.2	25.2	16.9	6.9	10.7	9.9	3.5
Vanguarda	689	1.1	NA	NA	NA	87.7	NA	NA	3.0
PrimeAg Australia	316	0.7	61.3	37.8	21.9	27.8	16.7	9.0	NA
BrasilAgro	277	1.0	NA	23.5	35.2	121.1	13.0	14.8	1.7
Global agro peers, *median*		**1.0**	**19.2**	**24.3**	**19.4**	**27.8**	**11.8**	**9.4**	**3.2**
CIS vertically-integrated agro peers									
Kernel Holding	2 264	1.8	10.0	10.4	9.2	9.8	8.1	7.0	13.3
MHP	1 632	1.5	6.3	4.6	3.9	5.6	4.4	3.8	8.5
Astarta Holding	447	1.0	3.7	6.5	4.3	3.3	4.5	3.5	2.3
Razgulay	84	0.2	NA	NA	NA	11.6	5.8	5.4	1.8
CIS vertically integrated peers, *median*		**1.2**	**6.3**	**6.5**	**4.3**	**7.7**	**5.1**	**4.6**	**5.4**

Source: Foyil analysis (market capitalization CIS companies as at 22 December 2012; other companies 19 November 2012).

In summary, the overall analysis above suggests that the sector is showing signs of maturity and an ability to perform alongside the leading developed markets with conventional performance drivers emerging in significance, namely: (i) the physical attributes of the assets (location and infrastructure) and (ii) management (business model, governance and financial management). Unique conditions of instability characterized much of the period during which the companies under review were listed publicly. The performance of the asset class may take a more predictable path under more stable economic and climatic conditions.

Exit strategies

There have been no fund exits or exits from other comparable major institutional investments since the start of the recent investment phase. There have, however, been several foreign-led institutions investing in and exiting small investments in farmland in the Russian Federation and Ukraine, as well as a number of foreign-led mergers and acquisitions. Table 9 illustrates some of these transactions. None of these transactions have been reported publicly in any detail and conclusions on investment performance are not possible. However, anecdotal evidence suggests that few have matched expectations.

Table 9: Examples of recent foreign-led private equity farmland transactions in the Russian Federation and Ukraine

#	Year	Country	Seller	Buyer	Description
1	2009	the Russian Federation	Heartland Farms (UK)	Volga Farming (Sweden)	Merger with Volga Farming. Terms not disclosed.
2	2010	Ukraine	Morgan Stanley (USA)	Finch Investments (UK)	Sale of interests (~40 000 ha). Terms not disclosed.
3	2011	Ukraine	Kinnevik (Sweden)	TAS (Ukraine)	Sale of interest in Ro-Gro LLC (farmland company). Terms not disclosed.
4	2011	the Russian Federation	Och-Ziff Capital Management (USA)	Private buyer (the Russian Federation)	Sale of AgroVista Tambov (45 000 ha). Terms not disclosed.
5	2012	Ukraine	Finch Investments/ Talis Capital (UK)	Kernel (Ukraine)	Sale of interests (~22 000 ha). Company reports 2X cash on cash return and IRR "over 60%".
6	2012	the Russian Federation	Rusmolco (the Russian Federation)	Olam International (Singapore)	Purchase of 75% of Rusmolko (133 000 ha + 4 000 dairy cattle) for USD 75 million with commitment to invest USD 320 million to expand operations.
7	2012	the Russian Federation	Sistema (the Russian Federation)	RZ Agro (Sierentz Group) (France)	Merger to create 90 000 ha farming operation. Terms not disclosed.

Source: author's collected data.

In a recent announcement (28 March 2013), United Farmers Holding Company (UFHC), a Saudi Arabian consortium, which includes sovereign fund interests, announced an offer for the total shareholding of Continental Farmers Group. On the basis of the offer, investors at IPO in June 2011 have made a 56 percent return in the 20 months since the IPO. The EV/EBITDA multiple is 7.9x for 2013, which is more than twice that shown by other agro peers.[34]

Risks and mitigation

Country risk may include generic issues of doing business like corruption and efficacy of legal processes. A key regulatory risk is trade restrictions (grain export bans). However, the restraint in the Russian Federation in not imposing restrictions after the 2012 drought is seen as a positive sign of a maturing regulatory environment. In Ukraine, uncertainty regarding the timing and outcome of lifting the moratorium on farmland ownership adds a potentially significant risk.

Climatic risk is ever present in primary agriculture, but can be mitigated to some extent through management practices (e.g. addressing long term soil compaction

34 This is based upon projected EBITDA and a net income of USD14.9 million and USD7.7 million for 2013. On this basis, the offer also represents a P/E multiple of 11.8x, which is more than double the current P/E multiple on which agro peers are trading (Foyil Securities, 2013).

and pH levels, minimum tillage cultivation practices and crop selection) and crop insurance, as well as geographic diversification of farms.[35] There are very basic climatic gradients running north to south through the Russian Federation and Ukraine and also west to east through Ukraine, but locations along these lines have yet to prove an effective risk mitigation option in these countries.[36] There are few risk management options available; crop insurance and market price hedging are at early stages of development in the region.

Management risk. Operational management competencies are key to success and the frequent lack of a significant voice with a strong operating background at the executive level has served to heighten risk levels. Most investors have gained experience and a better understanding of the complexity of large-scale farming in the region, albeit at significant expense. Consolidation and rationalization of operations are now the priorities.

Market risk. There are few options available at present to manage market price risk, and hedging tools are still being developed.[37] Most producers have invested in storage and drying facilities to enable greater flexibility in timing of sales. Other aspects, such as Russian Federation's recent entry to the WTO, will reduce the probability of trade distortions through, for example, the reduction of export tariffs on oilseeds.

Future trends and potential for EBRD involvement

The analysis in the report helps to identify several key trends that will impact further investments in primary agriculture and the performance of these investments.

The overall macro case is positive

- Market fundamentals for agricultural commodities are positive and growing demand and tighter supply will keep prices firm. This scenario provides a favourable macro-context to investments in the asset class. This is particularly true for many CIS/CEE countries, which according to most estimates have particularly attractive conditions to further boost their role as global suppliers of key agricultural commodities.

The nature of investors and investment vehicles is changing

- Foreign and institutional investments are a relatively small part of primary agriculture in most of the selected countries. These investments have almost exclusively been made for financial motives. However, the recent entry of investors endeavouring to secure strategic food sources adds a new dimension to the investment landscape. It remains to be seen to what extent this raises domestic political concerns.

35 The response to the study by a very large primary agricultural producer in Latin America to the question of spreading (mitigating) risk through geographic dispersal of farms was that this practice "did not work" in those conditions because most of the crops were soybeans (50-80 percent) and there was also not enough climatic heterogeneity between regions.

36 Trigon Agri's strategy is to invest in distinct farmland clusters running north to south through The Russian Federation. NCH manages risk by spreading farms across the west-east axis in Ukraine. Enhanced risk is apparent in Black Earth Farming's assets, which lie entirely within The Russian Federation's central black earth region.

37 CBOT are developing a Black Sea Wheat Futures contract as a price-risk management mechanism for wheat produced in the Black Sea region (see www.cmegroup.com). Current technical challenges include managing currency and delivery options, and exchange controls.

- Private equity in the form of funds and/or other private institutional investors will become increasingly important in driving investments in large-scale primary agriculture. There is likely to take the form of significantly more investment from institutional investors, as deeper understanding is developed of opportunities in CIS markets, in particular. The extent of this will be dependent upon profit performance and country risk perceptions, and most importantly, ability of management to perform. The major producing countries in the CIS hold most of the global institutional-scale farmland investment potential.
- No clear model has emerged so far for any downstream integration in large-scale farmland companies. However, most new fund proposals are hybrid concepts, which are focused on all parts of the agricultural value chain, and not only on primary agriculture. There has been only one major new farmland fund proposal in CEE and the CIS since the 2008 global financial crisis.
- Climatic and market price risks remain key risks. There are significant advances being made in futures and options markets, as well as the tools available to producers to access liquidity and manage market price risk more effectively. These measures can facilitate a more efficient and reliable price discovery process and will also enable significant reductions in price volatility. However, significant market awareness and contract technical issues remain to be addressed. The experiences in 2012 in the Russian Federation and Ukraine show a maturing approach by the authorities to market regulation.

Business models are still at the trial and error stage, but are consistently improving

- The limited data available on funds and the relatively short period of performance precludes comprehensive conclusions. Nevertheless, the analysis undertaken on listed companies shows that while many have performed poorly there are also well-managed companies that have outperformed benchmarks. Competent management, both strategic and operational, continues to be key to success.
- The achievement of higher crop yields on a consistent basis ("closing the yield gap") will have the most significant impact upon profitability. The ability to afford the higher level of inputs (fertilizer, other inputs) needed to reach higher yields will be a key factor in the achievement of improved yields. The current priority for most recent investors is to rationalize assets, optimize crop yields and costs, and manage earnings volatility. Most have now created effective management platforms from which to drive these initiatives.
- There is significant potential for both public and private investment in irrigation and related water systems, and also in increasing efficiency of water usage within these systems. The extent of land under irrigation in the selected countries is a relatively low percentage and is less than half the global average of around 18 percent of arable land.
- The model for successful large-scale farmland management has still to be proven on a long-term basis, in most instances, and in particular in the very large-scale players (>250 000 hectares under management). Experience from other regions has shown that companies that grew too quickly have lost money and are scaling back, at least temporarily.
- Farmland prices in Bulgaria, Poland and Romania will continue their convergence towards those on mature EU markets. However, current farmland prices in markets like Poland (when added to the complexities of achieving economic scale

of operations) are making those markets relatively expensive investment options for fund and similar institutional investors.

Exit options may increase

- There will be increasing M&A activity in CEE and the CIS as further experience is gained, strategies are refined and farmland markets continue to mature. There will also be further consolidation of the industry, accompanied by a gradual withdrawal from the market of less efficient players. There is scope for new players in specialist niches (high value, high intensity crops).
- Current fund exit options include sales to other farmland players, sales to non-farmland investors (other funds and/or institutions) and IPOs. No interest has been shown so far by commodity trading groups or major banking and industrial groups, and there are no indications that this will change in the foreseeable future. The role of sovereign wealth groups as investors is an open question, as is the likely response of domestic interests to these groups acquiring controlling positions in significant tracts of primary agricultural production. Local political concerns are unlikely to permit these groups to take significant controlling positions in primary agriculture. The most probable exit options will therefore be sales to other farmland investors, sales to non-farmland investors (in particular, institutions) and IPOs on stock markets.

Given the context and expected evolution in the sector, this study suggest that there is potentially a role for EBRD to invest in primary agriculture in CEE and the CIS, for the following key reasons:

- EBRD's presence as an investor would elevate the investment profile of an undercapitalized and high potential asset class;
- investments by EBRD would improve the institutional investment case and act as a catalyst for attracting further investments;
- EBRD has the capacity to select funds capable of increasing land productivity and improving agricultural practices, with potentially significant demonstration effects;
- EBRD has the status and capacity to articulate and drive a reform agenda that might include further land reform, improving legal and institutional frameworks, corporate governance, agricultural banking and lending practices, and the development of best practice social and environmental governance standards. Such practices and standards might build on existing international agreements, like the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT), which were endorsed last year by the CFS; and various tools developed by intergovernmental organizations (including the above-mentioned PRAI).

Chapter 1 - The case for investment in primary agriculture

The big picture on supply and demand of food

Until recently, historical evidence suggested that the productive potential of global agriculture was sufficient to meet demand growth. This was particularly true prior to the emergence of biofuels as additional demand. There had been a long-term decline in real prices of agricultural commodities until the mid-1980s and near constant prices thereafter until 2005. According to most analysts, world agriculture had been operating in a demand-constrained environment, a situation that co-exists in many regions with millions of people having insufficient food to eat. Following the spike in commodity prices in 2006 to 2008, coupled with civil unrest in many countries, world food supply and demand rose to the top of most policy agendas.

Analysis suggests that there is an overall risk that supply will not meet global food demand over the longer term. Complex socio-ecological systems such as the food system are unpredictable, especially with regard to long-term horizons. A number of factors contribute to uncertainty about the world's ability to meet the food demand of an increasing population: (i) average living standards are rising; (ii) land use is shifting from agriculture to urban and industrial uses; (iii) the production of non-food crops for biofuels is rising; (iv) investments in increasing agricultural productivity are growing slowly; (v) water and arable land are becoming increasingly scarce; and (vi) global warming is making it more difficult to produce food in some developing countries. However, such risk is still considered to be moderately low.

The reasons for this moderately low risk assessment are as follows:

- Firstly, there is an upper limit to global demand. While incomes may continue growing, income growth becomes largely irrelevant beyond certain levels (when per capita food consumption approaches saturation) and will not create additional demand for food. Additionally, the slowdown in global population growth, which started in the 1960s, will continue;
- Secondly, under most current assumptions, supply growth should meet demand growth. This is due to yield growth requirements being below historical increases and within what is feasible with a favourable policy environment. Additionally, estimates of land availability show that, despite high regional heterogeneity, there is scope for further increases in cultivated land.[38]

Major demand drivers will be: population growth; urbanization, income growth and consumption trends; and legislative, technological and market developments in biofuels.

Major supply drivers will include: prices of crude oil/energy, availability of water and land, impacts of climate change, trade restrictions and other macro-economic factors.

Finally, most analysis suggests that global consumption of agricultural products will be driven by developing countries with major differences according to individual commodities and regions. Developing countries will also drive growth in global production and trade because of their greater potential to increase cultivated land and improve productivity.

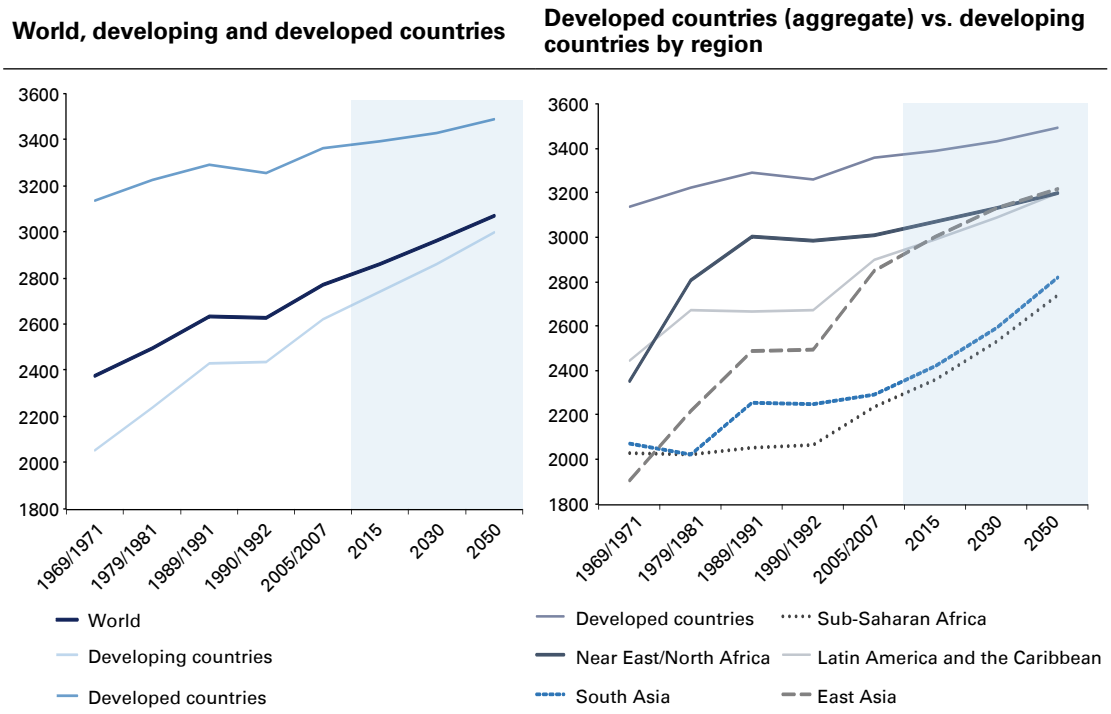
Global food consumption – what is to be expected?

Historical growth and consumption trends: 1970 to 2006

Global food demand has seen massive changes over the past 35 years, mainly as a result of: (i) rising per capita incomes, (ii) population

38 Some 1.4 billion ha of land globally is available for agricultural production (FAO estimate). There is, however, some discussion regarding this figure as, for example, the World Bank (2011a) states that about 0.5 million hectares of non-forested, non-protected agricultural land with less than 25 persons/km^2 is uncultivated and possibly available for cultivation.

Figure 2: Trends in per capita food consumption (kcal/person/day)



Source: OECD/FAO (2012).

growth, (iii) changes in the income distribution (a growing middle class), (iv) urbanization (and its impact on food consumption habits) and, more recently, (v) biofuels (impacts of legislation and other factors).

Over this period, increases in supply have almost equalled increases in demand for agricultural products at the global level. FAO reports that simple growth accounting shows that increases in global demand come from:

- population growth (about 70 percent);
- increased availability of calories per person (22 percent); and
- other factors, mainly changes in commodity composition driven by dietary changes (8 percent).

The latter two factors are affected mostly by increases in per capita income. Global demand is therefore determined by population growth (70 percent) and per capita income growth (30 percent).

Global food consumption (as measured in calorie consumption) rose significantly from around 2 370 kcal/person/day in 1970, to 2 770 kcal/person/day in 2006[39] (see Figure 2). This trend was driven by a 27 percent increase in per capita calorie consumption in developing countries, while only 7 percent growth was recorded in developed countries over the same period.[40]

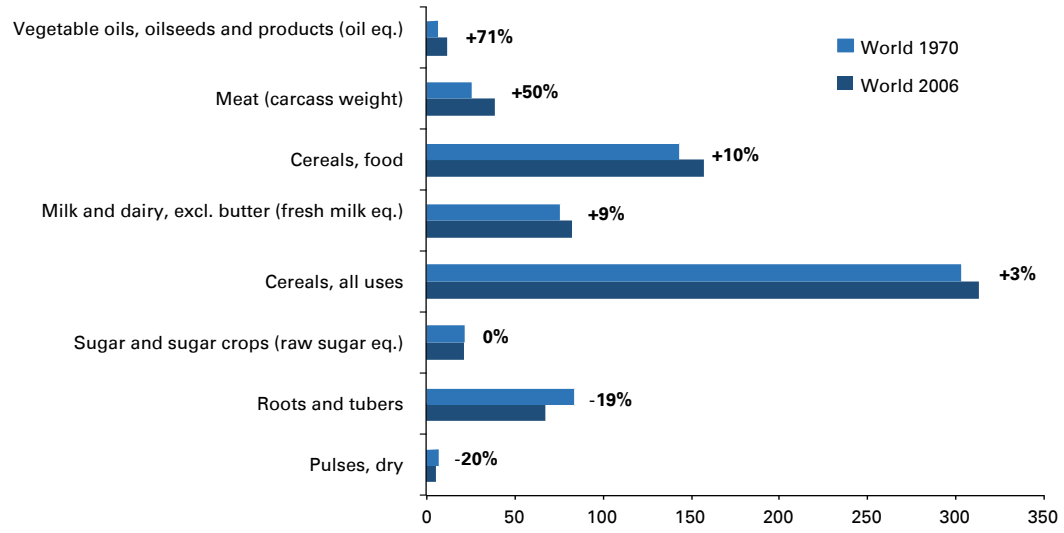
Growth patterns in calorie consumption differ substantially across regions and countries: East Asia, Near East/North Africa and Latin America recorded increases of 49 percent, 28 percent and 19 percent respectively, while in sub-Saharan Africa and South Asia calorie consumption increased by only 11 percent and 10 percent respectively.[41]

39 The data used throughout this section refer to the middle-year data in a three-year average. For example, 1970 refers to the average for the period 1969 to 1971.

40 There was a small decline in developed countries in the 1990s followed by a recovery, which is due to the transitions that occurred in Central and Eastern Europe.

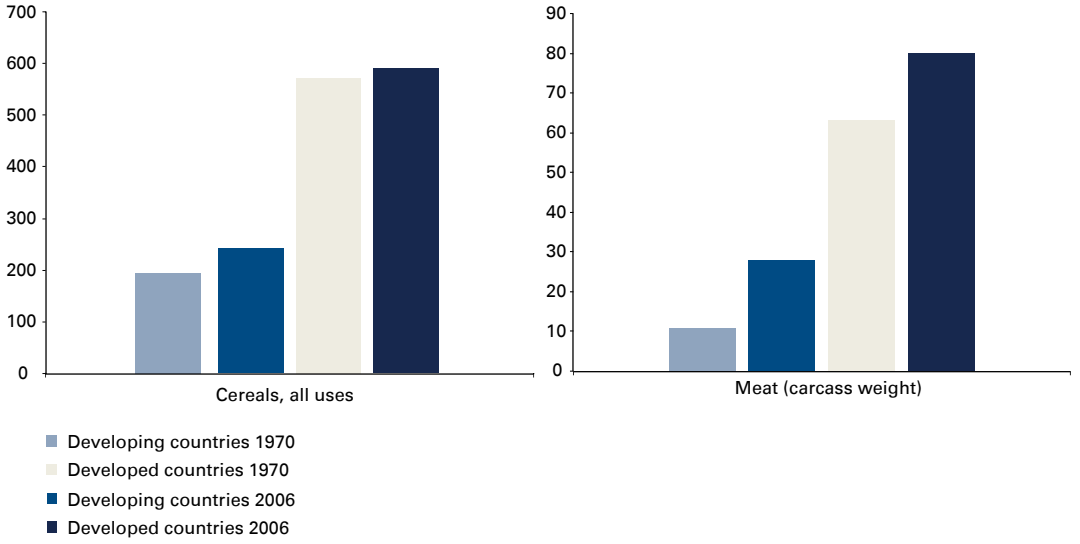
41 Larger population countries such as Brazil, China, Mexico and Nigeria have driven consumption growth: per capita calorie consumption has increased from a range of 1 920-2 580 kcal/person/day in 1970, to a range of 2 700-3 240 in 2006. A different pattern is observed in India, which is estimated to have stagnated for about 25 years at approximately the same low kcal/person/day of 2 300. India currently accounts for some 30 percent of undernourished people in developing countries (OECD/FAO, 2012).

Figure 3: Growth in global per capita consumption by commodity group, ranked highest to lowest (1970–2006) (kg/person/year)



Source: OECD/FAO (2012).

Figure 4: Growth in cereals and meat consumption in developing and developed countries (1970–2006) (kg/person/year)



Source: OECD/FAO (2012).

According to FAO, global food consumption during the period 1970–2006 was characterized by major dietary changes, notably, a shift from staples such as roots and tubers towards more livestock products and vegetable oils (Figure 3). Key features include:

- Global per capita cereal consumption, which increased by only 10 percent to 158 kg per capita with approximately similar growth rates in developing and developed countries (Figure 4);
- Meat consumption, which registered an overall increase of 50 percent to 39 kg per capita with a significant 155 percent increase

in developing countries from 11 kg per capita in 1970 to 28 kg in 2006[42] (Figure 4);

- Milk and dairy products consumption, which also increased significantly in developing countries by 79 percent to 52 kg per capita, though still well below the level in developed countries, which increased by 7 percent to 202 kg per capita; and
- Global per capita vegetable oil consumption, which increased by some 70 percent to 12 kg per capita in 2006, and more than doubled in developing countries to 10.1 kg per capita in 2006.

Higher per capita consumption in developing countries has been accompanied by higher population growth: between 1970 and 2006 population in developing countries doubled to some 5.2 billion people, while the population in developed countries grew by only 25 percent to 1.35 billion people.

Most importantly, population growth is decelerating, particularly in developed countries, from an average annual population growth of 2 percent and 0.7 percent respectively for developing and developed countries in the 1970–2000 period to an average growth of 1.5 percent and 0.4 percent in the 2000–2006 period. Growth rates are expected to slow down substantially in the future (see "Longer term outlook" below).

Short and medium-term projections

In the short to medium term,[43] global food consumption is expected to follow a similar pattern to that of the recent past, with continued change from staple foods towards more fats and oils and more animal protein. This in turn will result in increases in demand for vegetable oils, meats, sugar and dairy products, including indirect demand for coarse grains and oilseeds in livestock rations.

Moreover, as in the recent past, consumption growth will continue to be driven by trends in developing countries because of population growth, stronger per capita income growth and faster urbanization rates. In developed countries, consumption growth will be more limited as food expenditures generally represent only 10-15 percent of disposable incomes,[44] and basic dietary needs have long been satisfied. Still, it is expected that diets will continue to evolve in these countries towards more variety both in range and composition of foodstuffs (including processed and other foods). In particular, preferences will continue to shift towards healthier sources of animal protein and food in general, for example, switching from red meats, butter, milk powders and sugar towards poultry, fish and cheese.

The FAO-OECD outlook for 2011–2021 estimates that consumption in the short to medium term will increase for all products and in all regions (Figure 5) but with different patterns in developing and developed countries for the reasons explained above.

- In developing countries, poultry meat (39 percent), sugar (34 percent), vegetable oils (32 percent) and selected dairy products of butter (38 percent), cheese (32 percent) and skimmed milk powder (39 percent) will enjoy the highest increase in consumption.
- In developed countries, the major increases are forecast only in vegetable oils (23 percent) and oilseeds (20 percent) with consumption growth in all other products forecast below 20 percent.

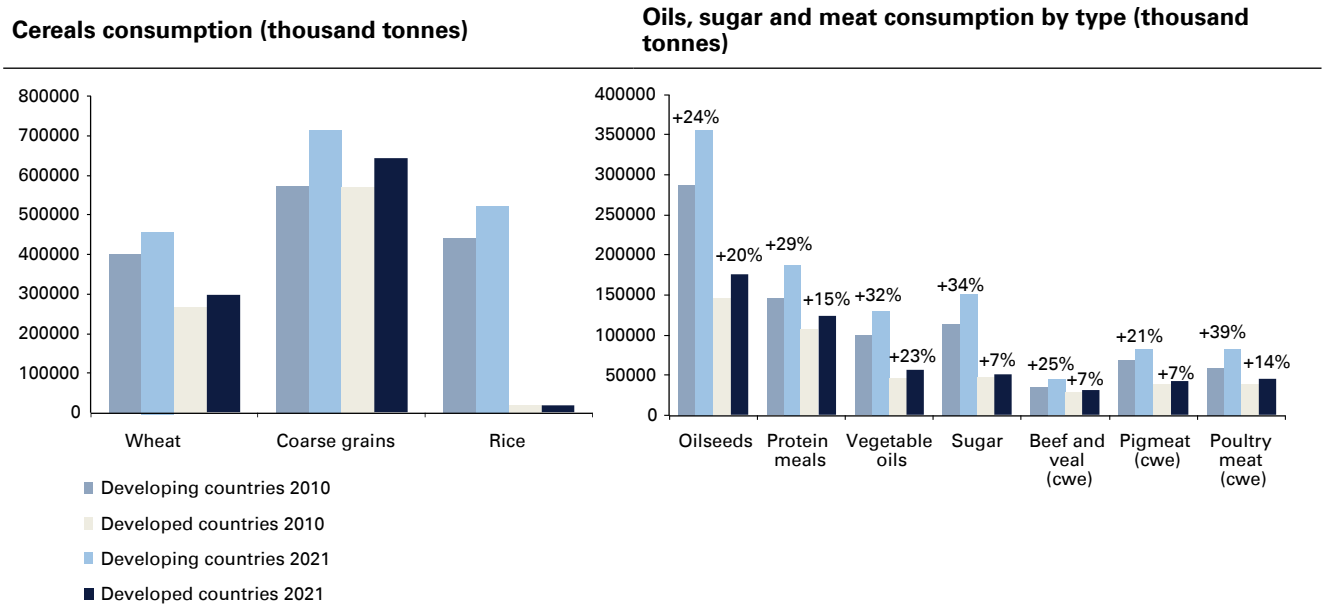
Biofuel production is increasingly impacting agricultural commodity markets. Biofuels create a competing source of demand for cereals, oilseeds and sugar. Currently some 65 percent of vegetable oil produced in the European Union, 50 percent of Brazilian sugarcane and 40 percent of US corn production is used as biofuels feedstock. Coarse grains and vegetable oils consumed in biofuels currently account for,

42 Most of the 155 percent increase in per capita meat consumption in developing countries is accounted for by trends in China and Brazil. Excluding growth in these two countries produces a 55 percent increase over the same period.

43 Medium-term estimates refer to 2012–2021 and are based on FAO-OECD forecasts (OECD/FAO, 2012).

44 The share of household budgets allocated to food expenditures has declined in most countries in recent decades. For example, a number of African and South Asian countries have experienced significant decreases in food expenditure shares, often from 50 percent, or more, to approximately 30-35 percent (OECD/FAO, 2012).

Figure 5: Forecast medium term trends in consumption of key commodities in developing and developed countries 2012–2021 (thousand tonnes)



Source: OECD/FAO (2012).

Note: 2011 represents the average estimated value for the years 2009–2011.

respectively, about 9 percent of their total global production (OECD/FAO, 2012).

Biofuel production is highly dependent on policy measures, most notably the US Renewable Fuel Standard (RFS2) final rule and the EU Renewable Energy Directive (RED). Biofuel production in Brazil is also closely linked to development of the flex-fuel vehicle industry. Anticipated trends are as follows:

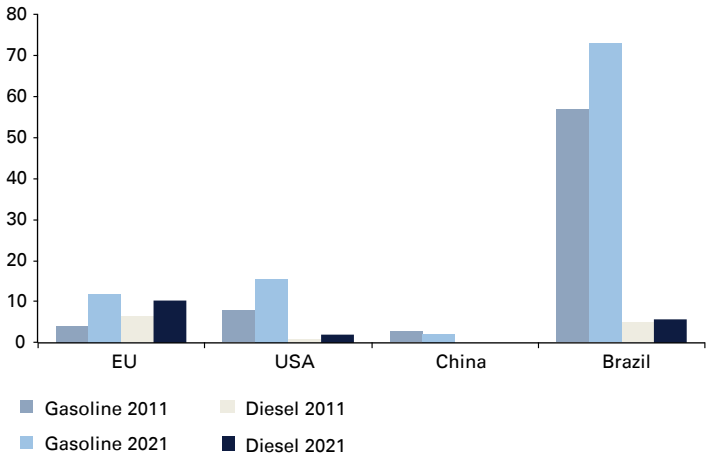
- biofuels as a percentage of total transport fuels are set to increase substantially in the short to medium term with gains expected in most key countries (Figure 6);
- china will remain the major producer and consumer of ethanol in developing countries with production forecast to increase from 8 to 10 billion litres per annum over the period 2012–2021;
- coarse grains are forecast to remain the major feedstock and are estimated to account for 44 percent of global ethanol production in 2021 translating into a projected 14 percent increase in global coarse grain production;
- ethanol production will consume some 34 percent of global sugarcane production by 2021 (representing some 28 percent of global ethanol production);
- ethanol produced from wheat and molasses will decrease, as will the percentage of biodiesel produced from vegetable oil (a 10 percent decrease is expected between 2011 and 2021, but will still represent 70 percent of biodiesel production);
- biofuels production is driven by crude oil prices and policy incentives. Around 35 countries now have mandates in place to produce biofuels, with consumption in Brazil, China, the European Union and the United States driving demand. Most projections anticipate continuing high crude oil prices and consequently a favourable environment for biofuels production.[45]

Longer term outlook

Upper limits on demand will be reached in the longer term. These include a slowdown in population growth and a growing share of global population reaching stable levels of per capita food consumption. Moreover, widespread poverty will at least in the medium term continue

45 Uncertainties surrounding the commercial viability of current technological developments means that projections do not take account of: (i) second-generation biofuel technology, which may replace feedstock from food materials with non-food feedstock such as waste materials and lingo-cellulosic biomass; or (ii) other advanced biofuels developments such as bio-butanol.

Figure 6: Projected medium-term share of biofuels in total volume of transport fuel usage for key countries (%)



Source: OECD/FAO (2012).

Note: 2011 represents the average estimated value for the years 2009, 2010 and 2011.

to play a role in potential demand for food not being matched by effective demand.

FAO's long-term scenario assumptions are based upon average global population growth of 0.75 percent per annum between 2006 and 2050. This is made up of rates declining from 1.7 percent per annum in 1970–2000 to 0.97 percent in 2006–2030, and further slowing down to 0.48 percent per annum between 2030 and 2050.

Again, population growth will be driven by developing countries, which are expected to grow 0.88 percent per annum in the period 2006–2050, while growth in developed countries will be virtually stagnant (0.14 percent growth per annum over the same period).

While differences in the projected total world population figure do not have a major impact on total projected food and agricultural variables, regional disparities in particular arising from higher population growth expected in sub-Saharan Africa imply that undernourishment projections are clearly affected.[46]

In terms of GDP growth, FAO projections indicate slow overall convergence between developing and developed countries over the long term: in the period 2005/07 to 2050, developed country per capita GDP is expected to grow at an annual average of 1.2 percent versus 2.7 percent for developing countries. Strongest growth is expected from developing countries in East Asia and South Asia.[47]

These assumptions result in per capita consumption and total consumption growing more in developing countries than in developed countries. In developing countries, the average kcal/person/day in 2005/07 stood at 2 620, which is not low when compared with the minimum dietary energy requirement (MDER) of 1 820.

However, inequality results from many countries not having reached that level and the consequently high prevalence of undernourishment (aggravated by within country inequality). Developing countries are projected to converge on developed countries, reaching an average of 2 740 kcal by 2015, 2 860 kcal by 2030 and 3 070 kcal by 2050, which represents about 86 percent of the level projected in developed countries in 2050. This is a major increase compared to 1969/71 when developing countries were at 65 percent of the level of

46 Population growth projections have been revised in 2002, 2008 and 2010. The latest revision projects a higher total population figure, which is now expected to reach 10.1 billion in 2100 instead of peaking at 9.4 billion in the second half of the 2070s, essentially resulting from revisions to growth in sub-Saharan Africa (without the growth in sub-Saharan Africa, world population would peak in 2055 at 7.4 billion) (UNDESA, 2010).

47 Average annual per capita GDP growth during the period 2005/07 to 2050 is projected at 3.85 percent and 3.14 percent in East Asia and South Asia respectively.

Table 10: Projections for global consumption and production of key agricultural commodities

Indicator	2005/07	2050	2080
Population (million)	6 584	9 306	9 969
Calorie consumption (Kcal/person/day)	2 772	3 070	3 200
Cereals, food consumption (kg/capita)	158	160	161
Cereals, all uses consumption (kg/capita)	314	330	339
Meat, food consumption (kg/capita)	38.7	49.4	55.4
Oilcrops (oil equiv.), food consumption (kg/capita)	12.1	16.2	16.9
Oilcrops (oil equiv.), all uses consumption (kg/capita)	21.9	30.5	33.8
Cereals, production (million tonnes)	2 068	3 009	3 182
Meat, production (million tonnes)	258	455	524
Cereal yields (tonnes/ha; rice paddy)	3.32	4.3	4.83
Arable land area (million ha)	1 592	1 661	1 630

Source: FAO (2012) (Population data - UN 2010 revision).

developed countries, and about 86 percent of the global average.

As indicated in Figure 2 above, there is some disparity in the expected long-term evolution of per capita food consumption within developing countries: from 2005/07 to 2050, growth in daily kcal consumption per capita is expected to be stronger in sub-Saharan Africa and South Asia (a compound annual average of 0.5 percent growth in both regions). As a result an increasing share of people will live in countries with medium to high levels of per capita food consumption.

FAO's long-term trends report that "in 1990/1992, 55% of developing countries' population lived in countries with less than 2 500 kcal/person/year. As noted, the proportion had fallen to 44% in 2005/2007. It is projected to continue to fall to 42% by 2015 and to only 3% by 2050, with 44% of their population living in countries with over 3 000 kcal" (Alexandratos and Bruinsma, 2012).

In the long term, individual commodities are expected to show different consumption patterns. As shown in Table 10, per capita consumption of cereals is expected to show little growth (5 percent difference between 2005/07 and 2050 for all uses), while meat and oil crops are expected to register strong per capita growth in consumption.

Per capita consumption of cereals peaked in the mid-1990s in both developing countries and globally, and while many developing countries have not reached adequate per capita consumption levels, their aggregate evolution reflects developments mainly in China and, to a lesser extent, India.

Global food production – is there a binding constraint?

Past evolution of agricultural production

Global agricultural output has grown by 2.4 percent per annum over the past decades (as measured by FAO's net production index).[48] Global agricultural output grew by 2.6 percent per annum over the last 10 years, with strong growth registered in Brazil, China, India and the Russian Federation.

Overall, consumption growth in developing countries has been a little higher than production growth. Production growth in developing countries has exceeded that in developed

48 FAO indices of agricultural production show the relative level of the aggregate volume of agricultural production for each year in comparison with the base period 2004–2006. These indices are based on the sum of price-weighted quantities of different agricultural commodities produced after deductions of quantities used as seed and feed weighted in a similar manner. The resulting aggregate represents, therefore, disposable production for any use except as seed and feed. The commodities covered in the computation of indices of agricultural production are all crops and livestock products originating in each country. Practically all products are covered, with the main exception of fodder crops. The category of food production includes commodities that are considered edible and that contain nutrients. Accordingly, coffee and tea are excluded along with inedible commodities because, although edible, they have practically no nutritive value.

countries during recent decades as these countries have invested more in their agricultural sectors (it is generally anticipated that this trend will continue). Over the past 40 years average growth in developed countries has been 0.4 percent per annum compared to 3.5 percent per annum in developing countries (Table 11).

Developing countries surpassed developed countries in total cereals production in the early 1990s: these countries currently account for 56 percent of world production and this share is projected to increase to 60 percent in 2050.

Historical evidence suggests that overall production increases in the past have been mainly due to yield increases. The world average yield for cereals was 1.44 tonnes/ha in the first half of the 1960s (average 1961–1965), 2.4 tonnes/ha in the first half of the 1980s, and is currently 3.4 tonnes/ha (average 2005/2007) (Alexandratos and Bruinsma, 2012). On average it has grown with increments of around 44 kg/ha/year. However, the growth rate has declined: 44 kg represented 3.1 percent of 1.44 tonnes/ha in the early 1960s, but 1.8 percent of 2.4 tonnes/ha in the early 1980s, and only 1.3 percent of 3.4 tonnes/ha in recent years (Alexandratos and Bruinsma, 2012). Lately, falling productivity growth has become one of the key sources of concern around the capacity of world agriculture to produce enough food for a growing population.

Improvements in total yields of the three main cereals – rice, wheat and maize – over the period 1961 to 2011[49] have averaged 2.4 percent per annum, comprising 1.9 percent from yield increases and 0.5 percent from expanded areas under cultivation (OECD/FAO, 2012).

Projected evolution of agricultural production over the short to medium term

Global agricultural production growth will be driven by strong growth in developing countries and will also show major differences within individual agricultural commodities. FAO-OECD projections indicate that:

- Global agricultural output growth will slow to 1.7 percent per annum by 2021 (which still outpaces population growth). Production in developing countries will grow by 1.9 percent over the next 10 years, resulting in a gradual increase in their share of global production.
- Production growth in meat (beef, pork, poultry), dairy products (butter, cheese, milk powders), vegetable oils and sugar, in developing countries, will exceed that in developed countries in most commodities by more than 50 percent.
- Global sugar production will increase at a faster rate (1.9 percent per annum) than at present (1.7 percent per annum over the past decade). This slight acceleration reflects continuing strong output growth in developing countries, which are projected to account for 93 percent of additional global production to 2021.
- Global meat production growth is projected to slow from the present average of 2.2 percent per annum, to 1.8 percent per annum by 2021, due mostly to slower growth in Argentina and Brazil. The rate of growth of meat production in developing countries is projected to more than double that of developed countries to meet strong income and population growth.
- The growth rate of global milk production is expected to decrease from 2.1 percent to 2 percent per annum by 2021. This slight slowdown reflects slower growing global milk animal inventories, which will not be completely compensated by the expected higher growth in milk yields.
- Global production of cereals is projected to grow at 1.1 percent per annum, down from 2.5 percent per annum during the past decade. This is due to slowdowns in both yield growth and area expansion. Production of coarse grains and rice is projected to grow slightly more rapidly at 1.4 percent and 1.2 percent per annum respectively, compared to global wheat production at 0.9 percent per annum. Annual growth rate of global cereals production will be slower than projected growth in consumption to 2021, and this will result in a tightened cereal market supply situation.

In spite of slower projected growth in cereal output, production of wheat is projected to

49 There was an average increase among these three cereals of overall 2.4 percent per annum between 1961 and 2011.

Table 11: Projected annual growth in agricultural production (food and non-food commodities)

Region	1970–2007 (%)	2005/7–2030 (%)	2030–2050 (%)	2005/7–2050 (%)
World	**2.1**	**1.3**	**0.8**	**1.1**
Developing countries	**3.5**	**1.6**	**0.9**	**1.3**
Excluding China	2.9	1.8	1.2	1.5
Sub-Saharan Africa	2.7	2.5	2.1	2.3
Near East/North Africa	3.0	1.6	1.2	1.4
Latin America/Caribbean	2.9	1.7	0.8	1.3
South Asia	3.0	1.9	1.3	1.6
East Asia	4.2	1.3	0.5	0.9
Excluding China	3.1	1.5	0.9	1.3
Developed countries	**0.6**	**0.7**	**0.3**	**0.5**

Source: OECD/FAO (2012).

expand significantly in traditional producing regions within the developed countries, and will account for 59 percent of additional output to 2021. World oilseed production is also projected to slow during the next decade, having experienced strong growth in the past decade due to an expansion in cultivated area in response to high prices. Nonetheless, global production of oilseeds is projected to increase by around 20 percent by 2021, with additional oilseed area contributing about 50 percent of the increase.

Projected evolution of agricultural production over the long term

The growth rate of world agricultural production is projected to fall from 2.2 percent per annum, achieved over the last decade, to an average 1.3 percent per annum during the period from 2005/07 to 2030, and to 0.8 percent per annum from 2030 to 2050 (Table 11).

Growth rates are expected to be significantly lower in developed than in developing countries. In the latter group, the annual growth of agricultural production is projected to slow from the average 3.4 percent achieved during 1990 to 2007, to 1.6 percent over the period from 2005/07 to 2030, and to 0.9 percent from 2030 to 2050. This compares to the growth rate in developed countries of 0.3 percent per annum achieved during the period 1990–2007, to a projected 0.7 percent in 2005/07 to 2030, and to 0.3 percent from 2030 to 2050.

Moreover, the increase in percentage terms in the production of basic food and non-food items (between 2007/2009 and 2019) is expected to be much higher in developing countries than in developed countries (see Table 12). Consequently, world agricultural production is projected to increase by at least 60 percent between 2005/2007 and 2050.

Recent FAO projections show that production growth needed to meet demand growth will be lower than in the past, even after accounting for increases in per capita consumption and changes in diets. However, additional annual production required by 2050 is significant:

- cereal production needs to increase by 940 million tonnes per annum (+46 percent);
- meat production must increase by some 200 million tonnes (+76 percent), and this will require significant increases in production of animal feeds[50];
- soybean production must increase by some 80 percent to 390 million tonnes;
- the share of livestock production (meat, dairy products and eggs) in total world production will increase from 36 percent in 2005/2007

50 Recent projections indicate that almost 60 percent of the additional 443 million tonnes of corn produced annually by 2050 may be needed for animal feeds (and 23 percent of this production for biofuels). As an example of potential consumption, China, which increased per capita pork consumption threefold since 1980 to current consumption levels at 38 kg per capita per annum, is still well below Hong Kong's per capita consumption of 83 kg per capita per annum.

Table 12: Projected increase in agricultural production from 2007–2009 (average) to 2019

Commodity	Developed countries (%)	Developing countries (%)	World (%)
Wheat	6.4	16.6	12.4
Coarse grains	17.9	22.3	20.1
Rice	1.6	16.6	15.9
Oilseeds	18.3	23.0	21.4
Protein meals	18.2	25.4	23.1
Vegetable oils	20.0	30.1	27.9
Sugar	4.3	32.3	25.9
Biodiesel	86.3	112.0	95.1
Ethanol	79.8	88.9	83.7
Beef	6.3	23.9	16.6
Pork	6.8	21.6	16.2
Poultry	16.1	37.9	28.9
Sheep	8.2	24.0	21.0
Butter	10.0	36.2	26.4
Cheese	16.0	27.6	18.7
Whole milk powder	30.4	32.8	31.6
Skimmed milk powder	21.0	31.7	23.0
Fish	4.8	18.7	15.7

Source: OECD/FAO (2012).

to 39 percent in 2050 (from 30 percent to 35 percent in developing countries);

- nearly 90 percent of annual production increases will come from developing countries, which would raise their share in world agricultural production from 67 percent in 2005/2007 to 74 percent in 2050;
- this increase would be particularly strong for livestock production (from 55 percent in 2005/2007 to 68 percent in 2050) (Alexandratos and Bruinsma, 2012).

Any discussion on productivity growth in agriculture inevitably takes into account the past and expected evolution of crop yields and land quality and availability. Achieving the expected production increases would require additional land and water resources, which are becoming scarcer, both in quantitative terms (per capita) and qualitative terms (good quality land). This is due mostly to soil degradation,[51] salinization of irrigated areas and deviation from food production uses.

As noted above, growth of crop yields has slowed significantly over the past 50 years and fears are expressed that the trend may not reverse. The question is not whether yields will grow at the high rates recorded in the past, which is unlikely, apart from individual countries and crops; *rather, the concern is the capacity to meet increased food requirements with lower agriculture growth potential and modest expansion of cultivated land*.

Yield gaps

According to FAO projections, even if cereal yields continue to increase at past rates (44 kg/ha/year), this will be adequate to meet global needs: average yield will be 5.42 tonnes per hectare by 2050 translating into a total production

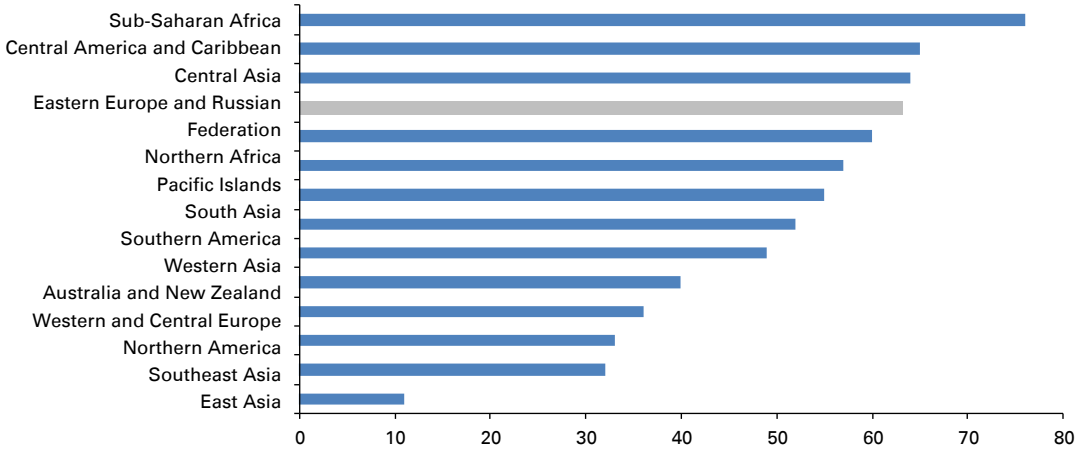
51 According to OECD/FAO (2012), approximately 25 percent of the world's agricultural land area is highly degraded.

Box 1. Yield potential and yield gap

Genetic yield potential is defined as the yield of a crop when grown in an environment to which it is adapted, with nutrients and water non-limiting, and pests and diseases effectively controlled. Thus, for a given crop variety or hybrid in a specific growth environment, yield potential is determined by the amount of incident solar radiation, temperature and plant density – the latter determining the rate at which the leaf canopy develops under a given solar radiation and temperature regime.

The difference between genetic yield potential and the actual yield is the exploitable **yield gap**. There are generally two components of yield gaps: *agro-environmental and other non-transferable factors*, which create gaps that cannot be reduced, and *crop management practices,* such as suboptimal use of inputs which may occur for different reasons. The latter component can be narrowed provided that it is economically worthwhile to do so, and is therefore called the exploitable yield gap or bridgeable gap. The exploitation of bridgeable yield gaps implies additional spread of high external input technologies, which might aggravate related environmental problems. Perhaps more important from the standpoint of meeting future demand, ready potential for yield growth does not necessarily exist in the countries where the additional demand will exist.

Figure 7: Yield gap estimates from OECD-FAO using 2005 data (%)



Source: OECD/FAO (2012).

Note: Potential for cereals, roots and tubers, pulses, sugar crops, oil crops and vegetables (combined) for rainfed and cultivated land across regions in 2005.

of 3.8 billion tonnes, which exceeds projected needs of 3.28 billion tonnes.

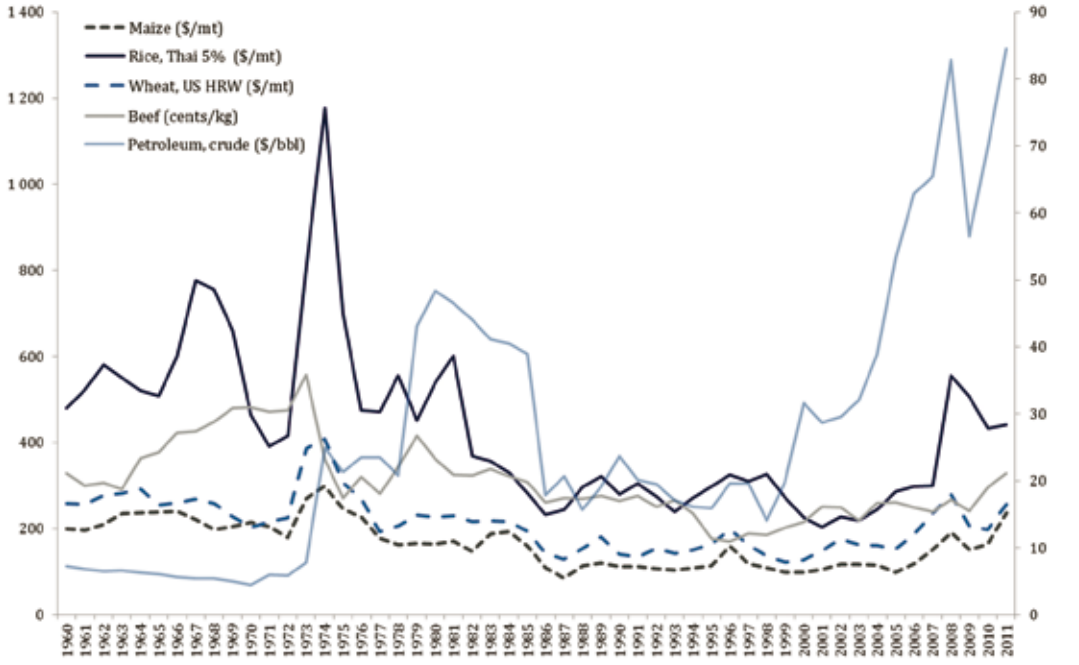
However, overall yields are still, in most instances, well below potential in the context of both genetic and economic perspectives. Deviations from potential yields vary remarkably among countries and regions even after adjusting for different growing environments and other factors, such as farm sizes, skills capacities, access to markets and finance, and institutional factors. Yield gaps are greatest in sub-Saharan Africa[52] and also high in Central America, Central Asia, Eastern Europe and the Russian Federation (Figure 7).

According to most sources, Kazakhstan, the Russian Federation and Ukraine have significant unrealized grain production potential compared to other regions of the world. Despite production increases in recent years, wheat yields in the region are still considered to be well below potential. For example, when comparing regions with similar agronomic conditions (such as Australia and Kazakhstan), the average wheat yield in Australia was 1.42 tonnes per hectare during the period 2007–2009, while it was 1.15 tonnes per hectare in Kazakhstan (a difference of 23 percent) (FAO/EBRD, 2009).

Similarly, comparisons between the Russian Federation (2.29 tonnes per hectare) and Canada (2.65 tonnes per hectare) show a difference of 16 percent. More striking is the difference between the Ukraine (3.03 tonnes per hectare) and the EU15 (6.13 tonnes per hectare), a difference of over 100 percent. This simple comparison suggests that significant yield

52 Overall, sub-Saharan Africa offers the highest potential to improve agricultural productivity and production.

Figure 8: Real prices for maize, wheat, rice, beef and petroleum (right-hand scale) (1961–2011)



Source: FAO projections using World Bank databank.

increases are possible across the region. Grain yields in Kazakhstan, the Russian Federation and Ukraine are projected to increase by 11 percent by 2016 (compared to 2004–2006 levels), due to better farm management, improved usage of farm inputs and improved plant genetics. However, considering soil quality, climatic conditions and current productivity levels, there is a much larger yield potential in these CIS countries (FAO/EBRD, 2008).

Land availability

FAO forecasts that some 90 percent of the growth in crop production globally (80 percent in developing countries) will come from higher crop yields and increased cropping intensity, while just 10 percent will come from land expansion (21 percent in developing countries).

Approximately 12 percent (some 1.5 billion hectares) of the world's land surface is used for crop production (annual crops and permanent crops) (FAOSTAT, 2012). Currently, arable land takes up some 28 percent of prime land ("very suitable") and good land ("suitable and moderately suitable"). There is a gross balance of unused prime and good land of some 3.2 billion ha. This translates into a net balance (excluding forests, strictly protected land and built-up areas) of some 1.4 billion ha. These data suggest that there is the possibility to expand the scope of land use for agricultural production.[53]

There is at global level sufficient land to feed the global population at current yield growth assumptions, albeit that several countries, particularly in the Near East, North Africa and South Asia, have reached or are about to reach the limits of available agricultural land (OECD/FAO, 2012).

Competition for land from non-food uses, like urbanization and industrial development, as well the remote and relatively undeveloped location of available land in Latin America and sub-Saharan Africa, will present significant challenges to bringing this land to productive potential. The potential impact of climate change may add additional complexities.

53 This is particularly valid in the major CIS grain producers, Kazakhstan, Russia and Ukraine, where utilization of arable land use decreased since transition. Broadly estimated, 15 to 20 million hectares of arable land could be returned to production in these countries without major environmental implications (FAO/EBRD, 2008).

Figure 9: FAO Food Price Index (including monthly data from January 2011 to October 2012)

Source: FAO Food Price Index.

Note: This is the real price index, which is the nominal price index deflated by the World Bank Manufactures Unit Value Index (MUV).

Evolution in prices of main agricultural commodities

Price evolution in the last 40-50 years

The real prices of cereals stood at a 40-year historic low a decade ago. Prices have since doubled in real terms (Figure 8). This is due mostly to increased demand from high economic growth in emerging markets and higher global energy prices (Prakash, 2011). This trend was driven initially by relatively low prices for agricultural commodities combined with stimulative bioenergy policies, which boosted demand for agricultural feedstock. However, the resulting high and volatile food prices generated concern for food security and future shortages, and focused attention on agriculture and questions about the ability to feed the world, in a context of climate change, resource scarcity and degradation, and unequal economic opportunities.

During 2006–2008, agricultural commodity prices reached levels not seen since the 1970s. In real terms, price levels and price volatility were significantly higher in 1973–1974 and even more pronounced in the years immediately following the First World War (1918–1921). Indeed, the 1973–1974 and 2006–2008 crises were not the only episodes of price spikes: during the last 50 years there have been several high-price periods.

As shown in Figure 8, fluctuations in rice prices were more intense than for maize and wheat, due to specific policy interventions such as a series of export bans and trade restrictions in major exporting countries in South-East Asia.

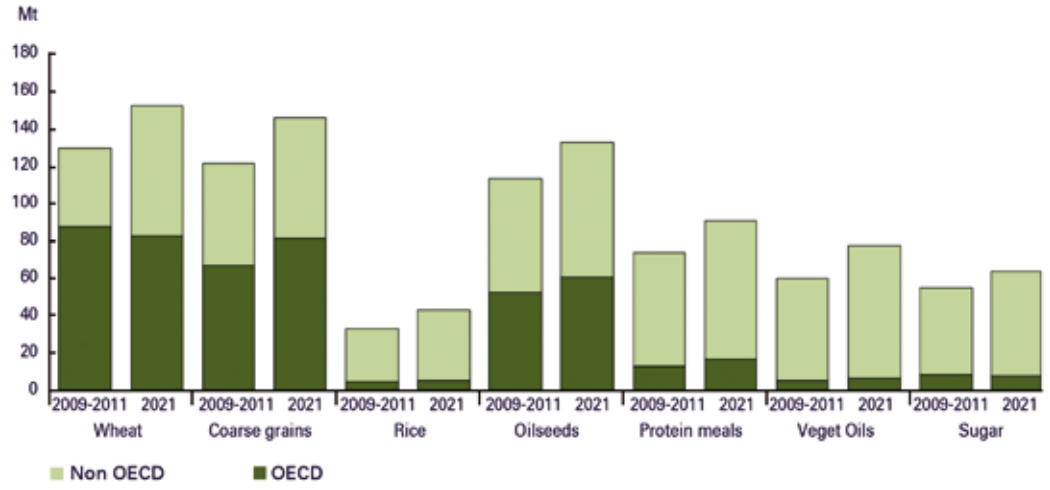
More recently, food inflation has slowed in the majority of countries[54] and declined in approximately two-thirds of developing countries and the emerging economies of Brazil, the Russian Federation, India, Indonesia and China (the so-called BRICs), as well as in over a third of developed countries. The FAO food commodity price index[55] gradually declined in real terms from 2011 to 2012 (Figure 9). This coincided with the widespread decline of food prices.

In the year ending January 2012, food price inflation increased sharply in South Africa, but slowed in Brazil, Indonesia, India and the Russian Federation. It remained quite stable in China. In

54 Slowing food price inflation does not imply that food prices, in absolute terms, have come down. This decline should be viewed as positive when coupled with household income increases. While food price inflation outpaced overall inflation in the majority of countries examined, the slowdown has helped to slow overall inflation.

55 The FAO food price index is a measure of monthly changes in international prices of a basket of food commodities. The index consists of the average of five commodity group price indices (representing 55 quotations), weighted with the average export shares of each of the groups for 2002–2004. For further details, see: www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/

Figure 10: Increasing exports of main crop products in OECD and other countries (2009/11–2021)



Source: OECD/FAO (2012).

Africa, food inflation was decelerating in many of the western and northern countries, while accelerating significantly in the eastern and southern region. It also moderated in many of the large Asian countries with a strong deceleration in Bangladesh, India and Pakistan, often falling by 40 percent or even more. Declines were also observed in large numbers of South and Central American countries, with exceptions such as Chile, Ecuador and Guatemala, where it rose significantly (OECD/FAO, 2012).

Overall inflation in developed countries over the next 10 years is assumed to average 2 percent per annum, which is below the 2000 to 2011 average. Deflationary pressures in Japan are expected to take place in the medium term, and the general price level is expected to rise after 2014. In emerging countries, falls in non-agricultural commodity prices and the slower growth of the global economy have mitigated inflationary pressures. However, inflation in many of these rapidly growing economies is expected to be above the average for developed countries. For example, in India and South Africa, inflation is expected to average about 4.8 percent per annum by 2021.

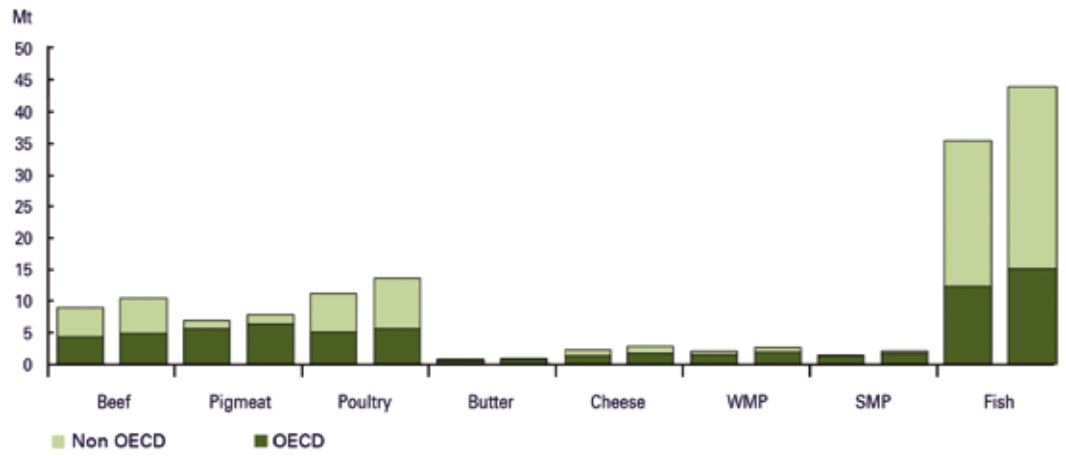
Projected price evolution over the next decade

It is generally projected that agricultural commodity prices will remain high and volatile over the coming decade and probably beyond that. While volatility is characteristic of commodity markets and is generally kept within reasonable limits balanced by price movements, extreme volatility can lead to crises. The risks of high volatility are expected to be low in the near term, due to better commodity supply expectations and rising stocks-to-use ratios, but production or trade shocks in major producing and trading countries could quickly reverse the trend. Price volatility will also continue to have significant impact upon profitability in agricultural investments.

Crude oil, in nominal terms, is expected to increase from USD111 per barrel in 2011 to USD142 per barrel by 2021, an average annual growth rate of 2.9 percent (OECD/FAO, 2012). If oil prices continue to rise as predicted, agricultural production costs will increase and contribute to higher food prices.

Agricultural commodity prices are expected to remain on a high plateau throughout the next decade. This is also supported by the assumption that oil prices, which have a direct influence on agricultural commodity prices, will continue to rise in both nominal and real terms. The eventual strengthening of global economic growth and stronger demand for agricultural products are expected to help keep the prices of agricultural products at relatively high levels over the next 10 years at least. This is particularly true with rising oil and energy prices, growing biofuel demand and slowing production growth. Higher input costs (i.e. fertilizer, chemicals) due to increasing oil prices will tend to slow yield and productivity

Figure 11: Increasing exports of main livestock and fish products in OECD and other countries (2009/11–2021)



Source: OECD/FAO (2012).

growth. Furthermore, resource pressures on water and land availability for agricultural expansion would contribute to a decrease in agricultural production and accumulation of stocks.

While world prices for many agricultural crops are projected to remain high, they will decline in the near term from 2011 levels as global production continues to respond to past high prices (including price spikes for certain cereals in 2012 due to unusual weather conditions), stocks rebuild and demand initially grows less rapidly with weaker macroeconomic conditions (OECD/FAO 2012). Beyond the near term, stronger demand growth and rising production costs will contribute to high commodity prices.

The projected prices, in real terms, for traditional agricultural commodities, are highest for livestock products. This price development is also anticipated for coarse grains, oilseeds, protein meals, vegetable oils, cheese and milk powders, but the difference with the past decade will be less pronounced (OECD/FAO 2012).

The results of the OECD-FAO analysis for world prices over the next decade are shown to remain within an average range of -15 percent and +19 percent for wheat, and -17 percent and +20 percent for coarse grains, around the median projection prices (10th and 90th percentiles), while the world rice price is shown to stay on average between -8 percent and +10 percent.

It is noteworthy that higher price outcomes predominate over lower outcomes.

Expected evolution in global agricultural trade

Global agricultural trade driven by rising demand is projected to expand in the short to medium term, in particular from and to developing countries. Developing countries are expected to account for most exports of rice, oilseeds, vegetable and palm oil, protein meals, sugar, beef, poultry meat, fish and fish products.

Developing countries have increased their share in world agricultural exports from 32 percent in 1990/91 to 42 percent in 2006/07, by expanding exports to other developing countries. Countries such as Brazil, China, Indonesia, the Russian Federation, Thailand and Ukraine are expected to significantly expand agriculture production and trade capacities by 2021.

As shown in Figure 10 and Figure 11, developing countries are expected to increase their share of exports by 2021 for different agriculture products (crops, livestock and fish).

- In the case of wheat, export trade volume is expected to increase by 17 percent by 2021 (to 152 million tonnes per annum). Developed countries will continue to dominate trade volumes in absolute terms; however, export growth rates will be significantly higher in

developing countries (64.8 percent compared to 5.7 percent in developed countries). Kazakhstan, the Russian Federation and Ukraine are expected to increase exports. The Russian Federation is projected *to* achieve the highest global export share of wheat by 2021 (17 percent of global exports).

- The risk of high production variability in the CEE/CIS region may have negative implications for global trade and world price volatility.
- Wheat imports will be most significant in China, the European Union, Indonesia and Iran.
- Developed countries will continue to play a major role in coarse grains in both absolute and relative terms as reflected in their expected production growth rate: 21.9 percent by 2021, compared to 17.2 percent in developing countries. At global level, export trade volumes for coarse grains are expected to increase by 20 percent (146 million tonnes by 2021).
- Global rice trade will remain small compared with other grains, despite an expected 30 percent increase by 2021. Developing countries currently dominate rice trade and will account for most of the expansion in both absolute and relative terms (Figure 10). Exports from developing countries are expected to grow by 32.1 percent by 2021, compared to just 15.3 percent in developed countries. Rice exports are projected from least developed countries in Asia, in particular Cambodia and Myanmar, while imports are expected to increase in Africa, due to production constraints.
- Developing countries are also expected to play a key role in the expansion of world meat trade, due to increasing demand from rising incomes and population growth. Compared to OECD countries, in the near term, they will experience a stronger increase in beef and poultry exports, respectively by 22.7 and 28.3 percent. Growth in meat exports is expected to originate largely from North and South America, which are projected to account for nearly 70 percent of the total increase in all meat exported by 2021. Emerging countries in the developing world and especially Argentina, Ukraine, Uruguay and some Eastern European countries are also expected to gain an increasing export share of world milk products.
- World trade in fish and fish products is expected to grow strongly with exports increasing by 34 percent to 2021. In the near term, exports are expected to continue to come mainly from developing countries (mainly from Asian producers), both in absolute and relative terms (Figure 11). However, this trend is expected to lead to moderate demand growth in developing countries. The Asia and Pacific region followed by North Africa and the Middle East will account for the majority of the increase in the value of agricultural imports to 2021. In the case of exports, Central Asia, East Europe, Latin America and also North America account for most of the increase to 2021.
- Among the emerging economies, Brazil will play a major role in the sugar and ethanol trades. In the case of sugar, Brazil is currently the world's largest producer and in 2010/11 accounted for about 49 percent of the world sugar trade as well as being the second-largest ethanol producer. The country is projected to remain the largest supplier of high-quality raw sugar to the world market and to become a larger exporter of white sugar. Argentina, Australia and Thailand[56] are also expected to gain market shares. In the near term, China[57] will become the largest sugar importer, surpassing the European Union, Indonesia and the United States. Rising domestic production will result in lower imports by the Russian Federation. Sugar exports from developed countries are projected to decrease by 9.7 percent over the next 10 years.

56 Thailand is expected to play a growing role in Asia as the only consistent producer of large sugar surpluses and with a natural trade advantage, along with Australia, to service the growing sugar deficit in that region. Thailand, ranked second in global exports, is projected to export 11 million tonnes by 2021/22, an increase of over 69 percent on the base period. Australia should be able to support exports of around 4 million tonnes by 2021/22 (OECD/FAO, 2012).

57 Resource limitations are expected to increasingly constrain production of sugarcane and sugar beet in China, which will require increased sugar imports (OECD/FAO, 2012).

- Global bio-ethanol trade is projected to account for an increasing share of world sugar production, growing from some 10 percent of global production in the previous decade to about 18 percent by 2021. Biofuel trade between Brazil and the United States is expected to increase, due to targeted policy interventions.
- Both developed and developing countries are expected to experience a slowdown in the export growth rate of oilseeds relative to past growth rates, but will still show relatively strong growth up to 2021 (15.6 percent for developed countries and 19.5 percent for developing countries). Moreover, emerging exporters like Paraguay and Ukraine are expected to contribute increasingly to global oilseeds export growth.

Chapter 2 - Investment drivers and externalities

Decisions on investment in primary agriculture are the result of careful assessment of the investment's potential returns and its associated risk. Returns on investment are driven largely by operating returns from farming and asset price appreciation.[58] Additional drivers of investment in farmland include a strong hedge against inflation and the low correlation of farmland to broader capital markets. Different risks associated with farmland investment include climatic, country, market and regulatory risk.

Investment in farmland also has potentially significant direct and indirect effects on surrounding rural economies, such as employment opportunities and improvements in agricultural productivity.

This section provides a thorough analysis of the drivers behind returns in primary agriculture, with a special focus on the CIS/CEE region, and the associated risks. It also examines the direct and indirect externalities resulting from such investments.

Investment drivers

Returns may vary according to several factors. These include:

- **geographic location**, for example, competitive cost structures in emerging markets and/or the ability to achieve economies of scale from large-scale farming in certain locations;
- **investment approach**, for example, an "own and operate" model offers the potential to capture the full upside from farming, but may also entail higher risk and higher earnings volatility;
- **production strategy,** for example, returns may be impacted by decisions involving crop selection and rotation, annual versus permanent crops, or integrated production strategies; and
- **financing strategy**, for example, leverage may impact equity returns positively, but add risk under volatile conditions.

There are several risks associated with investing in primary agriculture (see section below on "Risks associated with investing in agriculture"). Among others, regulatory, management and climatic risks seem to have a great influence on investors' decisions in the CIS/CEE region. In making investment decisions, portfolio considerations aside, investors generally follow three main strategies in deriving returns from investments in primary agriculture, as indicated in the box below.

Returns

The countries of Central and Eastern Europe (including those of the Former Soviet Union) have some of the potentially most productive soils in the world, agronomic and climatic conditions generally well suited to the production of arable crops, comprehensive and improving export infrastructure, and proximity to growing markets in Asia and the Middle East. Within this context, investments by equity funds and other foreign and local investors in primary agriculture and farmland in the region experienced a surge in 2006–2008. This has been driven largely by two factors: farmland price appreciation and operating returns.

Farmland price appreciation

Generally, investors view farmland as an undervalued asset class that consequently offers potentially significant value appreciation over time. The basis of farmland valuations in developed and competitive land markets is primarily (though not exclusively) a function of the future net cash flows that the land can generate. This in turn is dependent upon factors

58 In this context, investments in primary agriculture and/or farmland refer primarily to arable crop production (the EU, in the context of the common agricultural policy, defines arable crops as consisting of the following: cereals (such as wheat, barley, oats, rye, maize and sorghum), oilseeds (soya beans, rape seed and sunflower seed), protein crops (peas, beans and lupins), flax and hemp) (European Commission, 2013).

Box 2. Investor strategies

Own to rent. The owner leases land for either a flat-rate rent or a rent with profit participation. For example, the own to rent model is used by the Rabo Farm Europe Fund in Poland and Romania and is also common with most US-based REITs and other farmland investment structures. Rental rates in countries like Romania are often mirrored directly by the value of EU farm subsidies.[59] In some instances, there may be an element of risk participation in rental agreements where a percentage of farming profits are paid as part of the rent. This model is dependent upon the region or country having adequate independent farming skills (i.e. a competitive pool of potential lessees).

Own and operate. Recent investment models, particularly in CIS countries, favour this approach, which entails higher risk but also potentially higher returns from full realization of the operating returns. In the Russian Federation, for example, this option is usually the only one available because of the current lack of suitably experienced and competent lessees.

Lease and operate. This is the strategy followed in Ukraine, where purchase and sale of farmland is currently prohibited.

such as market prices, crop yield, production and transportation costs. In mature markets, for example the United States, increases in crop yields and prices, coupled with low interest rates and improved risk management and agricultural lending conditions, have resulted in double-digit increases in farmland values in some regions over the past decade.

As an example, the Farmland Value Survey conducted in 2012 by Iowa State University[60] shows that average farmland prices in Iowa State have quadrupled since 2000 and have shown double digit increases for eight of the last 10 years (including 32.5 percent and 23.7 percent in 2011 and 2012 respectively).[61]

In this environment, farm earnings have typically driven land values. At the same time, a recent study on trends in farmland values in the United States (Nickerson *et al.*, 2012) reveals a low correlation with net farm incomes, declining rent-to-value ratios[62] and low levels of affordability. This indicates that in some regions non-agricultural factors are becoming increasingly important in determining farmland values.[63] Location and parcel-specific factors may also have an important effect: values generally increase with proximity to points of delivery (storage and logistics infrastructure) and proximity to urban areas.

Overall, farmland values have shown mixed trends in CEE and the CIS. In new EU countries, subsidy payments have placed a floor under farmland values. The relative comfort of EU legislative structures and protections[64] also brought additional benefits.

In many countries in the region, farmland values have been enhanced by consolidating small parcels of land (e.g. in Romania and Bulgaria) or land shares into unified larger units, and by clustering multiple farms into potentially cost-efficient management structures (typically in the

59 In terms of the EU farm subsidy scheme, payments are made to the individual or entity operating the farm (this may be the land owner or a lessee).

60 The study also reports a 95 percent correlation between land values and the value of agricultural production in the state, and a higher correlation between land value and total income than land value and net income (89 percent) (ISU, 2013).

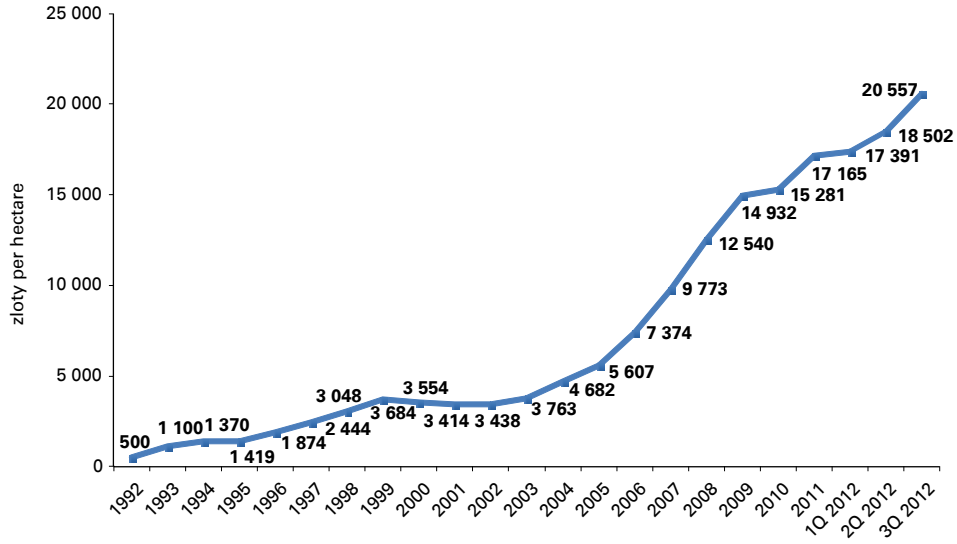
61 Respondents to the survey listed six positive factors affecting land values. The most frequently mentioned factor was high agricultural commodity prices (80 percent of respondents), followed by low interest rates (63 percent of respondents), cash/credit availability (15 percent), good return on land (14 percent), lack of other investments (12 percent) and land availability (10 percent). The most frequently mentioned negative factor on land values was the weather (43 percent of respondents), followed by respondents who said that current values were too high (18 percent), politics (18 percent), high input costs (15 percent), poor yields (14 percent) and overall economic conditions (13 percent). All factors were listed by over 10 percent of respondents. In the buyer analysis, 78 percent of buyers were existing farmers and 18 percent were classed as investors, with new farmers and others representing 4 percent of land purchases.

62 Rent-to-value is calculated as the cash rent per hectare divided by the land value per hectare, and is a proxy of how quickly an asset will pay for itself. In the United States, decreasing RTV ratios are an indication of the growing importance of non-agricultural factors (Nickerson *et al.*, 2012).

63 Non-agricultural factors may, for example, include options to develop the land for other more profitable uses.

64 Ownership of farmland by foreign individuals is currently prohibited in terms of a derogation agreement negotiated by Poland before accession to the European Union. In terms of this derogation, and until 1 May 2016, land cannot be owned by foreign individuals and can only be owned through a Polish registered company. When setting up a new agricultural company to buy land, that company must also be 51 percent owned by a Polish national, and can only buy up to 500 hectares off the state. However, foreign investors can purchase shares in an existing company that owns land without the need for a 51 percent Polish shareholder. Similar limitations apply in Romania and Bulgaria until 1 January 2014.

Figure 12: Poland: average state agricultural land prices



Source: ANR (2012).

Note: The figure shows prices from sales of state land only, in nominal terms.

Russian Federation and Ukraine).[65] Similarly, land values are increased in instances where farmland has been converted to freehold title.

Other factors, such as improving local economies, scarcity factors and the emergence of local investors, are also driving land price appreciation. This is particularly evident in countries like Poland, where average farmland prices have almost quadrupled in nominal terms over the past decade (see Figure 12). Similarly, competitive conditions exist in land markets like Serbia and Turkey, and are emerging slowly in markets like the Russian Federation.

It is interesting to note that initial approaches to valuing farmland companies at IPO in the Russian Federation and Ukraine were based on the valuation of the land bank. However, it quickly became evident that most operating models had overestimated the speed of performance improvements and other challenges to successful farming, and valuations have consequently moved to a traditional earnings basis.

Indeed, the initial surge of foreign-led and domestic investments in farmland in the Russian Federation and Ukraine, which began in 2005–2006, was based in many instances on the perception that farmland prices in Brazil were an attainable target benchmark for large-scale farmland valuation in those countries. A further basic premise was that most asset class valuations in the former Eastern Bloc countries had converged on valuations in their Western counterparts, and that farmland would follow this trend. Consequently, it was generally anticipated that farmland bought for USD600-800 per hectare would, over a relatively short period, converge towards the prevailing Brazilian market level of around USD3 500 per hectare.[66] In Central Europe, particularly Poland, Romania and Bulgaria, similar anticipation of asset price increases continues to drive investments in farmland. For example, average farmland values in Romania have increased (in USD per hectare) by 1 817 percent between 2002 and 2010, and by 172 percent between accession to the EU in 2007 and 2012 (Savills Research, 2012).

Operating returns

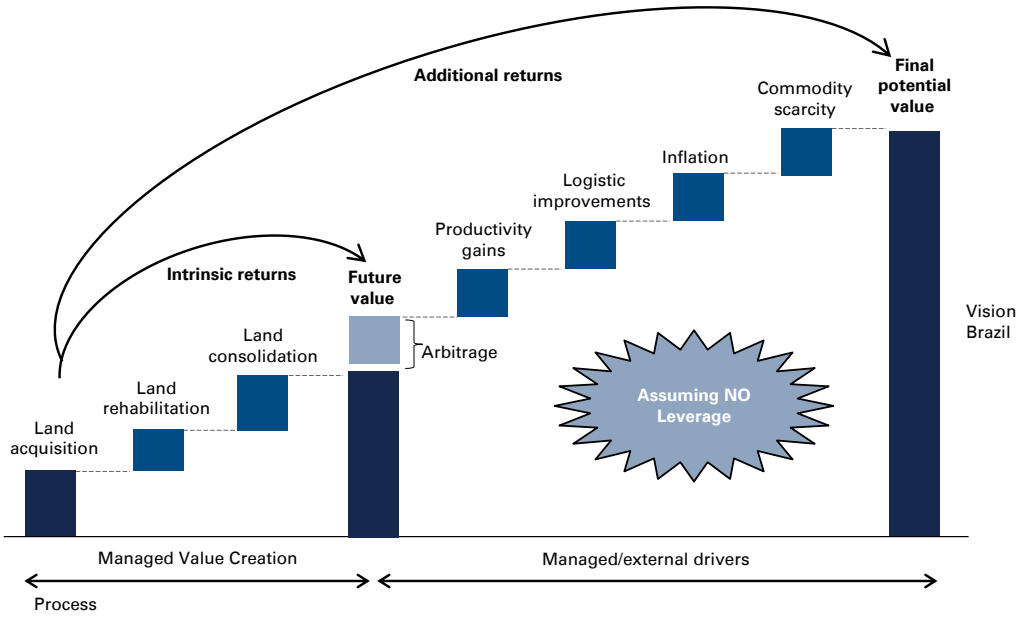
Generally speaking, operating returns are driven by a number of factors, including:

- Crop prices and crop yields. Operating returns in agriculture are most sensitive to two factors – crop prices and crop yields. Movements here have a more significant

65 In large-scale primary agricultural ventures in Russia and Ukraine, management clusters typically range from 40 000 to 70 000 hectares. In the Central European countries, land consolidations and clusters may range from several hundred to several thousand hectares.

66 The average value of farmland in Brazil is currently USD5 245 per hectare according to Savills Research (2012).

Figure 13: Analysis of key return drivers in farmland



Source: Vision Brazil Investments, 2012.

effect on returns than any other factor, assuming reasonable cost efficiencies.

- Management. Management, both strategic and operational, is the key determinant in the drive to close the yield gap. This has not been achieved in most recent investments, at least not consistently on a large scale.
- Cost management. Achieving low unit costs (e.g. for key inputs such as fertilizers) is a key operational priority and potentially an important competitive advantage.
- Geographic diversification. Diversification across countries, regions, crops and operating strategies are sensible risk management strategies to hedge against climatic risk and, in some instances, political and regulatory risk. For these reasons, a geographically diverse portfolio of farmland may enable a more balanced structure of returns and reduced volatility, provided there is sufficient heterogeneity in climatic patterns across the farms.[67] For example, Continental Farmers Group (CFG) report a positive impact on earnings from geographic diversification of operations in Poland and Ukraine, which they report provides "natural hedges against the changing climatic and market conditions" (CFG, 2012).
- Farming efficiencies. Improvements in the technical quality of agronomic and other farming operations have been significant thanks to the availability of financing and the ability to invest in modern equipment and technologies. Improvements on a large scale and over subsequent seasons have unfortunately been hampered by almost annual climatic distortions in recent seasons. However, in most recent cases, major investments in modern equipment and infrastructure have created effective platforms from which further efficiency improvements are being driven.
- Ability to manage timing of sales to market. Farming ventures iare generally price takers, dependent in most instances on commodity prices derived from global markets. Investment in storage capacity, and the capacity enabled by this to time sales optimally, may enhance income significantly. These returns must, however, be weighed against the capital investment in storage, as well as the costs of operating these facilities, which do not always offer an optimal payback.

67 As an earnings volatility management strategy, this has yet to be proven consistently on a large scale in CEE and the CIS and, in most instances, more basic factors like optimal crop selections and crop yields need to be improved first or at least in parallel.

In the CIS/CEE region, initial assumptions of **attractive operating returns** were based partly on the notion that agriculture in most of the region was outdated and undercapitalized and that investment in modern management and equipment would result in a relatively rapid turnaround in productivity and profitability. This was further supported by the assumption of sustained higher agricultural commodity prices.

A common assumption during the initial investment drive in 2006–2008 was that relatively moderate investment could, for example, increase average wheat yields on Russian farms from approximately 2.5 to 5 tonnes per hectare. (While significant progress has been made in many cases, there is still some way to go towards closing the yield gap and experience has shown this to be a far more complex challenge than initially assumed.)

State supports and incentives (i.e. taxation incentives and other forms of state support for agriculture) may be important secondary investment drivers and impact on operating returns and the cost of capital. Examples include interest-rate subsidies in some sectors in the Russian Federation and EU farm subsidies and other supports in Bulgaria, Poland and Romania.

Relatively low farmland lease rates in countries like Kazakhstan and Ukraine provide a further cost advantage relative to comparable farming conditions elsewhere and enhance operating returns. For example, lease rates in Ukraine are currently some USD70-140 per hectare compared to lease rates of EUR250-500 per hectare in Serbia and USD600-800 per hectare in the United States.[68]

Additionally, the relatively lower cost of labour is seen in some of the countries as a potentially significant competitive advantage.[69]

In mature markets, such as the United States, investment in farmland has delivered attractive risk-adjusted returns of a total annual average of 10-13 percent over the past 20 years, with low volatility. In these investments, returns from farming operations typically average 4-5 percent of the total annual return (AEW Research, 2011). Investors usually have the comfort of direct ownership of the land combined with a model of advance cash rents.[70] While the farmland rental model is able to operate successfully in some countries in Central Europe (e.g. Poland), there is limited potential to rent out land on a large scale in CIS countries due to the lack of adequately qualified third-party farming operators.

Some investors in CEE and the CIS have been also attracted by the **potential for higher returns from hands-on operational farming**, even if this is relatively volatile and potentially more risky than more stable returns from renting land to third parties. However, as noted, there is in most instances in these regions no alternative to actively managed farming operations.

Additional investment drivers

Apart from farmland price appreciation and operating returns, other investment drivers commonly reported include:

- Inflation hedging. Research carried out on farmland investments in the United States reports a high correlation to the consumer price index (CPI), and returns that have exceeded CPI growth in each of the 10 years leading up to 2010 (Highquest Partners, 2010).[71]

68 A further illustration of this disparity in rents comes from a survey of farmland rents in the European Union conducted in 2007, which showed a wide disparity between the lowest average rents (EUR9.80 per hectare in Latvia) and the highest (EUR812.80 per hectare in the Netherlands) (Strelecek, Lososova and Zdenek, 2011).

69 As comparative costs (though not necessarily applied to agriculture), hourly labour costs in 2011 were as follows: Romania (EUR4.2), Poland (EUR7.1), Germany (EUR30.1) and France (EUR34.2). There are also significant differences in the costs of welfare insurance and related schemes (Eurostat, 2011).

70 The National Council of Real Estate Investment Fiduciaries (NCREIF) Farmland Property Index (the Index) describes the investment performance of 543 agricultural properties in the United States. Investment returns are reported on a non-leveraged basis and the properties must be owned/controlled by a qualified tax-exempt institutional investor (as such the index represents only this type of investor). The total value of the properties in the Index is USD3.55 trillion as at 31 December 2012. Results for 2012 show an annual return of 18.58 percent, consisting of 9.99 percent appreciation and 8.08 percent income return. This return was the highest since 2006, when returns were 21.15 percent. The total 2011 annual return was 15.16 percent. The Index's permanent cropland's annual return was 20.80 percent, consisting of 5.06 percent appreciation and 15.34 percent income return. Annual cropland's annual return was 17.41 percent, consisting of 12.62 percent appreciation and 4.39 percent income return (NCREIF, n.d.).

71 Most farmland markets in CEE and the CIS are in early stages of growth and development with many factors influencing prices, and few of these have achieved market equilibrium. Consequently, the correlation between farmland and inflation cannot at present be inferred with any degree of accuracy (the relatively mature farmland market in Turkey would be an exception to this).

Table 13: Irrigated land as a percentage of total arable land

Country	Arable land	Share of arable land irrigated	Hectares irrigated
the Russian Federation	120 709 900	3.5%	4 300 000
Ukraine	32 478 000	6.3%	2 175 000
Belarus	5 506 000	2.3%	131 000
Kazakhstan	24 033 600	15.0%	3 556 000
Poland	12 939 000	0.9%	116 000
Romania	8 789 000	35.2%	3 157 000
Bulgaria	3 139 000	3.2%	102 000
Croatia	892 000	3.5%	31 000
Serbia	3 298 000	2.7%	89 000
Turkey	21 315 100	24.5%	5 215 000
Total	**233 099 600**	**8.2%**	**18 872 000**

Source: EastAgri (2012); FAOSTAT (2009).

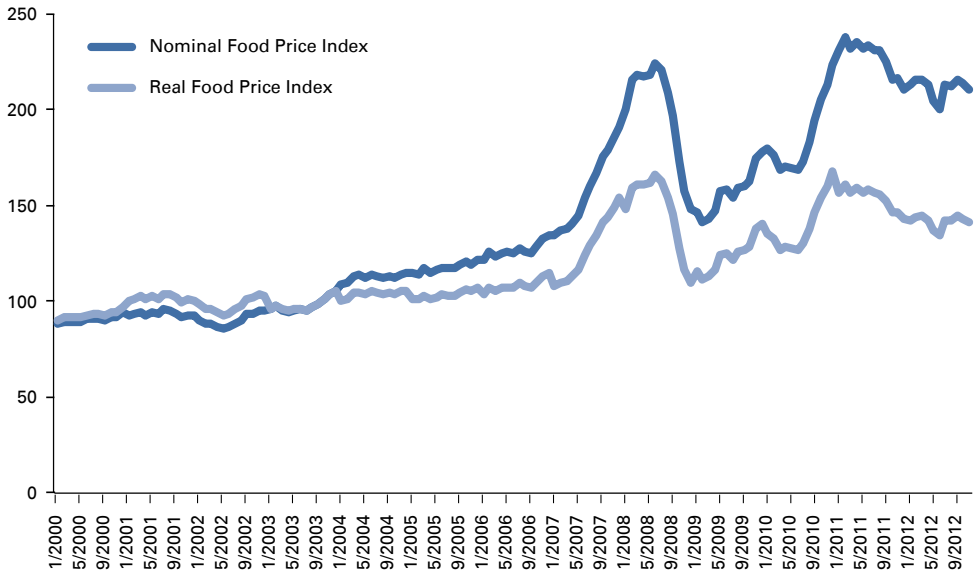
- Low correlation to traditional asset classes. Farmland values in the United States have shown a low correlation to the broader capital markets. A survey conducted in 2010 found that inflation hedging and low correlation were the two leading motives for farmland investment among institutional investors (Geman and Martin, 2011; Highquest Partners, 2010).
- Portfolio diversification through investment in alternative or real assets, including farmland. Diversification into real assets that offer exposure to agriculture and farmland has become an attractive investment strategy for institutions like pension funds. In farmland, they typically seek a globally or regionally diversified portfolio of investments, which reduces risk by spreading exposure among various crops, markets, governments and climates. However, for those pension funds and other institutional players that have made the move, investments in farmland still represent a relatively small and insignificant part of their overall portfolio (often placed within, for example, a 2.5 percent allocation for real assets or alternative assets).[72] Water is a potentially interesting investment theme and one that has so far received relatively little attention in CEE and the CIS. Most countries in these regions have a relatively small percentage of irrigated farmland (Table 13). However, potentially significant opportunities exist to increase irrigation, though in most instances the common irrigation infrastructure generally requires significant investment to restore it to adequate functioning. In regions with good water resources, the value of water assets attached to farmland will be a significant driver of land values (and investments) in future.

As noted in Chapter 1, underlying these fundamental drivers is the view that the world has entered a super-cycle of higher agricultural commodity prices driven and underpinned by increasing per capita and total consumption among a growing global population. Key issues in this argument are that demand for food, feed and fuel is inelastic, non-cyclical and increasing, and is driven by a growing world population and changing demographic trends and dietary habits. Added to this is the rise of plant-based renewable energy sources produced primarily for transportation fuel in Brazil, the European Union and the United States. Furthermore, the global middle class[73] is projected to increase from some 400 million currently to 1.2 billion by 2030, due to strong economic growth in developing countries

72 One estimate indicates that institutions own less than 1 percent of US farmland. This is based upon the assumption of 365 million acres of cropland at an average valuation of USD3 030 per acre (from USDA data 2011), giving a total valuation of approximately USD1 trillion. Of this, estimates developed in 2010 by Highquest Partners show that institutions owned between USD3-5 billion of farmland (AEW Research, 2011).

73 There are varying definitions of what constitutes the middle class. One commonly accepted classification defines the middle class as people earning between USD10 and USD50 per day, after adjustment for purchasing-power parity (Milanovic and Yitzhaki, 2002).

Figure 14: FAO Food Price Index 2000-2012



Source: FAO Food Price Index.

Note: The Food Price Index consists of the average of five commodity group price indices (meat, dairy, sugar, oils and fats, and cereals) weighted with the average export shares of each of the groups for 2002–2004. In total, 55 commodity quotations are considered by FAO as representing the international prices of food commodities included in the index. The Real food price index is the Nominal index deflated by the World Bank Manufactures Unit Value Index (MUV).

and particularly in China and India.[74] Projections suggest that, in the future, some two-thirds of the world's middle class will be found in Asia.

The consequence of growing numbers of increasingly affluent consumers will be a shift in food tastes and preferences, notably a move from starch-based to protein-based diets[75] and higher per capita consumption of food. For many analysts, this aspect is the strongest demand-side argument supporting the predicted cycle of higher soft commodity prices.

In recent years, global stocks-to-use figures for soft commodities have fluctuated around and below historic averages.[76] Due to this relatively tight supply and demand scenario,[77] markets have become highly sensitive to climatic and other supply variables (short and long-term). The demand-driven nature of projected market growth represents a structural shift from the previous supply-driven market dynamics, although adverse climatic conditions will continue to produce intermittent supply shocks.

The impact of these factors is highlighted by the significant increase and volatility in the FAO Food Price Index since 2005, as illustrated in Figure 14.

Consequently, the general view is that the world is currently in the early stage of a secular shift in global prices for agricultural products, that prices for most agricultural commodities will remain high, and that investments in primary agriculture and farmland will benefit as a result.[78]

74 A recent study suggests that the number of cars in circulation provides a better measure of the number of middle-class households. By this measurement, car ownership suggests that the middle class is in the range of 550 million to 600 million people, around 50 percent higher than the number derived from the Milanovic-Yitzhaki definition (see above) (Ali and Dadush, 2012).

75 An example of the consequences of this shift in dietary patterns is that between 3 and 7 kg of grain are required to produce 1 kilogram of meat, which therefore further increases the demand (and area needed) for certain arable crops.

76 Low stocks-to-use levels observed in recent years have been attributed to partial dismantling of price support and intervention purchase schemes in some OECD countries, as well as to correction of the quality of information on private and government held stocks in major producing and consuming countries (FAO/IFAD *et al.*, 2011).

77 As examples, the stocks-to-use ratio for the global corn supply dropped to 13.7 percent in October 2012 – the lowest level since 1985. Global rapeseed stocks are expected to fall some 35 percent to a 14-year low in spite of strong recovery in the 2013 crop in Canada, the world's leading producer (USDA World Agricultural Supply and Demand Estimates (corn); International Grains Council (rapeseed forecasts)).

78 The World Bank *Food Price Watch Bulletin* reports that "a growing sense of a "new norm" of high and volatile prices seems to be consolidating" (World Bank, 2012a).

Table 14: Risks and mitigation possibilities

Risk	Mitigation
General agricultural investment risk	• Thorough due diligence and management oversight • Market-price risk management mechanisms still under development
Regulatory risk	• Thorough due diligence and management oversight • Selection of jurisdiction (EU vs. CIS)
Climatic risk	• Thorough due diligence and management oversight • Geographic diversification of farms, crop selection • Agronomic practices (e.g. minimum till and development of more suitable crop varieties) • Crop insurance (where available and affordable)
Market-price risk	• Market-price risk management mechanisms under development
Environmental and social governance risk	• Thorough due diligence and management oversight • Public education explaining benefits of proper governance in agricultural management
Expansion risk	• Thorough due diligence and management oversight • Strategic planning and site selection
Management risk	• Technical assistance

Source: author's analysis.

Risks associated with investing in agriculture

Investing in agriculture carries numerous significant risks. These include both typical uncertainties associated with investing in agricultural production and others more specific to investments in the CEE and CIS regions in general. Risks to consider include those related to regulatory, climatic, management, market, environmental, social, governance and expansion issues.[79]

Understanding and managing the risks involved in primary agricultural investments are vital, especially given the sensitivity surrounding rural land ownership and management in many countries, and the volatility of the asset class. Risks vary between mature and emerging markets, across countries, and among regions within countries. As can be seen from Table 14, in most instances, risk mitigation is limited to conducting robust and thorough due diligence and strong management oversight.

In general, to mitigate risks investments in primary agriculture must involve strong entry and exit strategies that address a complexity of issues, including the following checklist common to most investment scenarios:

- political and institutional conditions, including legal rights and processes;
- environmental and social governance norms and practices, including the potential influence of socially empowered community groups;
- functioning and liquidity of farmland markets and foreign ownership of land;
- structure and functioning of commodity markets, including adequacy and competitiveness of logistics and distribution infrastructure;
- dynamics of local food supply and demand as well as food security issues and potential implications of trade restrictions;
- quality and sustainability standards, which are increasing requirements from consumers globally;
- investment incentives, including taxation and agricultural subsidies and their current and long-term sustainability;
- availability and functioning of utilities and other public services;
- geographic diversification of productive assets and crop diversification;
- climatic variability and other risks; and
- range and depth of local agricultural and management and related skills.

79 Specialist agricultural investment management firm, Duxton Asset Management (2013), refer in their investment strategy to the four key variables (risks) in agriculture as country (political), climate, market and management.

Box 3. Examples of restrictions on agricultural land ownership

In December 2011, the National Institute of Colonization and Agrarian Reform (INCRA) published a set of new rules covering the purchase of **Brazilian** land by foreigners. These rules follow an opinion by the Attorney General that similarly limited foreign agricultural land ownership. Under the new rules, the area bought or leased by foreigners cannot account for more than 25 percent of the overall area in its respective municipal district. Additionally, no more than 10 percent of the land in any given municipal district may be owned or leased by foreign nationals from the same country. The rules also make it necessary to obtain congressional approval before large plots of land can be purchased by foreigners, foreign companies or Brazilian companies with the majority of shareholders from foreign countries. In June 2012, the Commission for Agriculture approved less restrictive measures, which maintained the land ownership restrictions but redefined the concept of a foreign investor. In terms of this definition, any company *registered in Brazil* enjoys the same ownership rights. However sovereign funds and non-governmental organizations with resources from other countries would remain restricted. These measures have yet to be approved by Congress and the accompanying uncertainty of how they will be applied in practice may impact investment in Brazilian land (US Department of State, 2012).[82] One estimate of land owned by foreigners in Brazil is 4.3 million hectares, which represents 1.7 percent of the total arable land (IISD, 2012).

In **Argentina**, the Rural Land Law passed in December 2011 restricts the size of land foreign entities can acquire to 1 000 hectares and places a cap of 15 percent on the total area of land that can be owned by foreigners. There is also a 30 percent cap per single nationality within this overall cap (Agrimoney.com, 2012b; see also Colvin and Co., 2012). One estimate places foreign ownership of farmland in Argentina at 5.8 million hectares, which represents 3.4 percent of the total arable land (IISD, 2012).

In **Australia**, the government is setting up a working group to consult on developing a register of foreign land ownership in order to provide more information and foster an informed public debate on the issue (NFF, 2012). A survey conducted by the Australian Bureau of Statistics in 2011 into levels of foreign ownership of Australian agricultural assets revealed that about 11 percent of Australia's agricultural land and 9 percent of its rural water entitlements are either partially or fully owned by foreign investors (Nason, 2011). A law being debated in **New Zealand** (Shuttleworth, 2012),[83] the "Overseas Investment (Restriction on Foreign Ownership of Land) Amendment Bill" will prevent the sale of "sensitive" land. Land classified as sensitive includes rural land (farm land) "over 5 hectares" in extent.

In **Romania**, foreign companies now reportedly own up to 8 percent of the country's arable land, which has prompted debate in government and elsewhere. Among the proposals being reported are conditions regarding proven experience and minimum qualifications in agriculture and caps on the amount of land that can be acquired by single buyers (Actmedia, 2012).

Country specific risks associated to ownership of rural land. Ownership of rural land and other forms of land tenure, particularly on large tracts of farmland, are potentially sensitive issues in most countries.[80] As such, there is a risk of governments imposing limits on the nature and extent of private ownership and/or foreign ownership. This issue demands continual awareness and management of relationships at local and national levels.

There are recent examples of restrictions imposed on the ownership of agricultural land by foreigners in Argentina and Brazil, as well as similar initiatives being debated in Australia, New Zealand and Romania (Box 3). In the United States, the Agriculture Foreign Investment Disclosure Act requires that any foreign purchase of agricultural land exceeding "10 acres" be reported. As of 31 December 2010, the USDA reported that foreign owners held some 9.7 million hectares or 1.9 percent of total agricultural land in the United States.[81] The continuing extension of the moratorium on agricultural land sales in Ukraine is illustrative of the sensitivity of the land issue. The eventual outcome is uncertain and may or may not impact the ability of investors to continuing leasing farmland at competitive rates and tenures.[84]

80 Farmland may not be owned directly by foreign individuals in any of the countries reviewed in this study. See the country sections for further details on this issue.

81 The Agricultural Foreign Investment Disclosure Act (AFIDA) became law in 1978. The law was created to establish a nationwide system for the collection of information pertaining to foreign ownership in US agricultural land. The law requires foreign investors who acquire, transfer or hold an interest in US agricultural land to report such holdings and transactions to the Secretary of Agriculture. The data gained from these disclosures is used in the preparation of periodic reports to the President and Congress concerning the effect of such holdings upon family farms and rural communities (USDA, 2012a).

82 See also Brazil Ministry of External Relations (2012), especially para. 12.3.3 on Acquisition of rural land by foreigners.

83 See also *Save the Farms New Zealand* (www.savethefarms.org.nz).

84 In November 2012, the Ukrainian Parliament extended the moratorium on the sale of agricultural land until 1 January 2016. Agricultural land may currently only be leased, and for up to 49 years.

Table 15: Comparison of investment processes between CEE/ CIS and some developing countries

Aspect	CEE and the CIS	Developing countries
Land rights	Robust, defined and generally well-documented	Often weakly defined, communally or state controlled
Contracting parties	Mostly private to private transactions	Mostly between host governments and private investors or sovereign entities
Investment motives	Mostly financial returns or vertical integration	Often to secure food supply for investor's home market
Market focus	Market neutral/optimal – domestic and/ or export	Often investor's home market

Source: author's analysis.

A number of governments and civil groups have taken on the issue of "land grabbing", which has received media attention globally. This issue applies particularly to countries where land governance systems are weak or undefined and where large tracts of land are under state control or forms of communal control. In some of these instances[85] there have been concerns expressed that local inhabitants are not properly consulted when land agreements are negotiated between the state and private investors and or other sovereign entities, and may become displaced or dispossessed as a consequence of this.[86]

Most countries in CEE and the CIS have generally well-organized land-titling and cadastral systems. Rural land rights are typically defined and documented with occupants having clear rights to tenure. This removes or reduces significantly the possibility of land being sold, leased or otherwise granted to others without the prior consent of the existing occupants.

There are important differences between land acquisitions and investment processes in CEE and the CIS, and in some developing countries. Key differences are highlighted in Table 15.

Most CEE and CIS countries are in the early stages of developing market economies and related judicial processes. This can raise the prospect of legal uncertainty, which may place asset rights at risk. The ability to defend the land title and other contractual rights and the predictability of the judicial system remain open questions in certain countries.

The comfort provided by the accession of some Central European countries to the European Union, meaning their inclusion within its legal structures (and eligibility for farm supports), has been reflected in the higher number of investments in primary agriculture (e.g. in Romania), as well as in significant increases in farmland values in these countries.[87]

Additional risk factors specific to countries and regions, such as corruption, are generally well known and considered beyond the scope of this study.

Climatic risk. This is significant for agriculture, as farming performance in the Russian Federation over recent years has shown. Events like late frosts, poor snow cover, winter freeze and droughts are an almost annual occurrence. Additionally, farmers must manage climate change risk and increasing uncertainty in long-term climate conditions, as well as the higher frequency of short-term extreme weather conditions.

85 Arguably the highest profile instance of "land grabbing" was the apparent award in Madagascar in 2008 of 1.3 million hectares to foreign investors for the production of corn and palm oil. This land amounted to apparently half of the country's agricultural land. However, following protests, the deal was scrapped (Burgis and Blas, 2009).

86 A World Bank Report made recommendations that include the protection and recognition of existing land rights, including secondary rights such as: grazing; greater efforts to integrate investment strategies into national agricultural and rural development strategies, ensuring that social and environmental standards are adhered to; improvements in the legal and institutional framework to deal with increased pressure on land; better assessment of the economic and technical viability of investment projects; more consultative and participatory processes to build on existing private sector initiatives and voluntary standards; and increased transparency of land acquisitions, including effective private sector disclosure mechanisms (Deininger and Byerlee, 2011a).

87 Farmland prices in Poland have increased from levels of approximately EUR1 200 per hectare to currently over EUR4 500 per hectare. The Savills Farmland Index reports the average price of farmland in Poland as USD5 685 per hectare (Savills Research, 2012).

Mitigation is limited to geographic diversification of farms (in instances where there is sufficient climatic heterogeneity between locations), crop selection and, to some extent, good agronomic practices (e.g. reduced till agriculture enables greater retention of soil moisture content and will in some circumstances temper the effect of dry conditions). The development of more suitable crop varieties will help to mitigate this risk in the future.

Risk management options like crop insurance and market price hedging are in early stages of development or not available in many countries in the region. Most primary agricultural producers therefore generally bear the full brunt of climatic risk.

Management risk. Management's track record (or lack thereof) and dependence on key personnel are key risks. There is generally limited experience at all levels of management in supervising large-scale primary agriculture, particularly in CIS countries. As is common with most impact investments, non-financial skills may have a greater influence on success than financial ones, as investing in agriculture often requires more confidence in the specialist skills of farm managers than in most other aspects.

In some instances, questionable investment strategies and frequent changes of senior management have been a major cause of poor performance. This highlights the importance of management risk inherent in executing investments in the sector. Finding the formula for successful implementation has in most instances been an expensive lesson for management and owners.

Market and regulatory risk. Strong supply and demand drivers in most agricultural commodity markets, coupled with relatively tight stocks-to-use ratios, have created conditions for significant volatility.[88]

Markets imply both pricing and currency risks. While the latter can to some extent be hedged, the former is much more prevalent in countries like the Russian Federation and Ukraine because there are few, if any, tools available to manage pricing volatility.

In the Russian Federation and Ukraine, prospects of export bans or other trade restrictions present additional market-price risk.[89] Distant production locations like Kazakhstan are reliant upon the functioning of other countries' transit systems. This process implies both logistical and political risks.

While there are limited market risk management options at present, growing familiarity with the functioning of futures markets and greater professionalization of marketing functions at the producer level are mitigating this risk. Many large producers have also positioned themselves to export directly, while larger producers, in some instances, are able to hedge pricing positions through collaborative arrangement with exporters. Current hedging options include the wheat futures contract recently launched by the Chicago Board of Trade (CBoT) and the rapeseed contract offered by the MATIF futures exchange.[90]

Trade restrictions may in future present a risk, as food security issues assume greater strategic significance. However, continuing improvements in agricultural production at an aggregated national level should enable most countries in the regions to produce a sustainable margin of

88 Most agricultural commodity markets are characterized by a high degree of volatility. This is explained by three major market fundamentals. Firstly, agricultural output varies from period to period because of climatic and other natural shocks. Secondly, demand elasticity is generally relatively small with respect to price. Supply elasticity is also low, at least in the short run. In order to get supply and demand back into balance after a supply shock, prices therefore have to react (increase), in particular if stocks are low. Finally, because of the relatively long production cycles for most agricultural products, supply cannot respond quickly to short-term price changes and this lagged supply response creates additional market volatility.

89 Reduced winter wheat plantings in 2012/13 in Russia are reportedly at least partially due to fears by farmers of an export ban (Agrimoney.com, 2012a).

90 CBOT have recently launched a Black Sea Wheat Futures contract as a price-risk management tool for wheat produced in the Black Sea region (see www.cmegroup.com). The contract is listed on the CBOT and available for trading electronically on the world's leading wheat-trading platform, CME Globex, beginning with the first listed month of July 2012. The contract is USD-denominated and has 136 metric tonnes per contract, similar to benchmark CBOT Wheat futures. Designated delivery points for the contract are in Romanian, Russian and Ukrainian ports on the Black Sea. Current challenges include the lack of liquidity in the contract, risks associated with potential export bans and other trade restrictions, and managing currency exchange controls (CME Group, 2013).

exports and mitigate the risk (and likelihood) of trade restrictions.[91]

There is also risk inherent in favourable tax exemptions and agricultural sector subsidies remaining in place.

Environmental and social governance risk. Environmental and social risk remains present in any primary agricultural activity. Typical environmental risks may involve biodiversity, soil and water utilization, while social risks typically involve property and civil rights including labour issues. Unlike previous risks, these are of greater significance from a social point of view as well as from a private perspective (some can impact performance and also carry reputational risks for funds/investors that care about such issues).

Environmental risks involve, for example, the use of pesticides and insecticides, water usage, the effect of soil and land management (including erosion), and aspects of monoculture.

Other risks include issues surrounding the potential for usage (or greater usage) of GMO crop varieties.

Agriculture and in particular large-scale agriculture is frequently a target for activist groups, presenting a potentially significant risk. It is likely that this issue will follow the global trend of increasing governance complexity as various public interest groups, empowered social groups, government regulators and others claim stakeholder rights in the primary agriculture sector. Mitigation includes a continual education process to inform the public about the benefits that proper governance of agricultural ventures may bring to investment, employment, R&D, training and trade, as well as the social improvement of rural economies.

Externalities

In addition to the expected direct returns on investments discussed elsewhere in this report, investments in farmland enterprises have potentially significant direct and indirect externalities on surrounding rural economies. There is a lack of extensive empirical work on the impact from recent foreign-led large-scale investments in primary agriculture and farmland in CEE and the CIS. Consequently, most of the discussion in this section provides a description of typical or potential externalities of these types of investments.

Typical externalities include some of the following: (i) general investment approach – enabling better utilization of capital, (ii) generating economic growth and employment opportunities, (iii) improvements in agricultural productivity, (iv) development of rural infrastructure, (v) transfer of know-how and development of local skills, and (vi) other.

As a general observation, it is recognized that a specialized investment approach (as offered by private equity) can often articulate and catalyse opportunities that might otherwise remain dormant, and facilitate more efficient allocation of capital and better diversification of risk. This applies equally to investments in primary agriculture.

Generating economic growth and employment opportunities. Primary agricultural ventures typically create jobs across a spectrum of skills as diverse as agronomy and accountancy. This has a major effect in regions where farmland was previously abandoned or underutilized. In many parts of the Russian Federation there is often no easy alternative to the capital and skills offered by corporate agriculture. As an example of job creation (in some instances, the enhancement of existing jobs), the three leading foreign-led publicly listed farmland companies in the CIS region have enabled almost 5 000 jobs since their formation (Alpcot Agro, 2013; Black Earth Farming, 2013; Trigon Agri, 2013). Another example, EkonNiva APK, a German-led investment in crop and livestock farming in six regions in the Russian Federation, employs over 2 900 people.[92]

91 The combined maximum cereals production potential in Kazakhstan, Russia and Ukraine is estimated at 230 million tonnes per annum, which is more than 60 percent above current levels of production (FAO, 2008).

92 "EkoNiva-APK is one of the leading agricultural holdings in Russia. Agricultural enterprises of the company operate in the Voronezh, Kursk, Novosibirsk, Kaluga, Orenburg and Tyumen oblasts an area of 181 000 ha. The total number of employees engaged in agricultural production amounts to circa 2 900". EkoNiva (2013) is also currently the leading milk producer in Russia.

Demand is also created for products and services in support of segments, for example:

- crop inputs;
- agricultural equipment and related support services;
- transportation;
- storage and handling;
- banking and financing;
- services for staff, including food retail, housing and FMCG.

The multiplier effect of these investments is a significant factor. In most cases, it leads to renewed dynamism in rural regions and has an important stabilizing effect on rural economies. The development of local skills often includes corporate governance and ethics training, and building a professional management ethic within the organization.

Improvements in agricultural productivity. Investment in modern agronomic and harvesting equipment has been significant and has created an excellent platform from which to address productivity improvements.

While there have been no recent empirical studies, a recent estimate places grain productivity at 15-20 percent higher than average in large agro-holdings (10 000 hectares and larger) due to the scale of operation and ability of these organizations to implement training and afford and use modern efficient equipment and machinery (Kobuta, Sykachyna and Zhygadlo, 2012). Adequate funding and effective financial management may also enable greater capacity to respond to key production events and access to advanced technology processes and innovations.

The application of uniform technological and administrative approaches to production on a large scale may also enable a faster response to operational changes and external events like market shocks.

Large-scale investments may also have the ability to invest in improving long-term soil fertility and soil structure. Examples include deep-ripping to improve drainage and aeration and the long-term correction of soil acidity levels. Black Earth Farming have embarked on a soil improvement programme that will include, for example, addressing acidity levels that have increased through years of under-investment and neglect. These initiatives involve significant investment and are expected to provide long-term payback through improved crop yields.

In most instances, in the larger companies, there are in-house R&D programmes with the capacity to test new crop varieties and techniques, and which endeavour to develop more optimal farming practices.[93]

While cultivation technologies and yields have improved, substantially higher long-term average yields have yet to be achieved on a large scale. Weather disruptions and in some instances, weak management, have both played a role in this regard.

Development of rural infrastructure. Significant investments are being made in new and renovated logistics infrastructure, including drying, cleaning and storage facilities. As noted earlier, these investments are often a prerequisite to improving crop quality and managing market price risk.[94]

Large-scale ventures can often exercise influence where the provision of public infrastructure is deficient (for example, maintenance of rural road networks). Such ventures can benefit regional budgets through tax paid, enabling regional governments to improve services.

Transfer of know-how and development of local skills. Investment in training and developing skills is significant in all instances. It has included the introduction of sophisticated modern equipment and management practices. In all instances, there is significant bias towards the recruitment and development of local skills.[95]

93 An example of this is Black Earth Farming, which works with a global technical partner to build internal R&D capacity and an in-depth understanding of optimal cropping conditions. The company reports inadequacies in the seed-licensing process that have not incentivized trials among private seed producers adapted to the specific soils and climate in its regions of operation.

94 In 2010, large agro-holdings controlled 18 percent of certified grain storage in Ukraine. There are 724 certified storage facilities in the country, with total capacity of 30.7 million tonnes of grain (FAO, 2012).

95 This is a common response from interviews with all investors.

Training is often implemented in collaboration with equipment vendors and other suppliers. An example of this is the NCH Academy, an initiative developed by NCH Capital that trains company specialists in key skills, in collaboration with key input suppliers.

Other initiatives include corporate governance and ethics training, and building a professional management ethic within the organization.

The development of sophisticated in-house commodity market trading and risk management functions has brought important new skills to most large-scale farmland operators.

Extensive investment in land-titling processes has yielded success for investors in converting ownership to freehold. These efforts have also helped to clarify and develop land titling and related legal processes, and built significant specialist legal skills and experience. In many cases, the work has been pioneering and the investments have accelerated the process, established strong precedents, and created both private and public institutional capacity.

Chapter 3 - Investors and investment structures

Investors

Investor types commonly invested in primary agriculture and/or farmland comprise pension funds, endowment funds, family offices and high net-worth individuals (HNWIs), as well as sovereign wealth funds. These investors are generally conservative and risk-averse, but maintain a relatively long-term "macro" perspective.

Investor typologies and their relative importance

The presence of institutional investors in primary agriculture globally is, however, still relatively very small; an estimate made by TIAA-CREF (2012a) places this investment at "less than 1% of global farmland". This is "due to historically high barriers to entry, such as relatively low liquidity and limited reporting and research, and a large number of off-market transactions". Additionally, the paucity of institutional quality asset managers limits the scope of investable opportunities.[96]

Other estimates place institutional investment in primary agriculture at USD5-15 billion as of early 2012 (IIED, 2012; Reuters, 2012). The findings of this study show that investments by equity funds and similar equity structures in primary agriculture total USD22-24 billion.

Most institutional investors are focused on one or several of four geographic regions. These are Australia/New Zealand, Brazil, Canada and the United States. These regions account for more than 80 percent of the current and targeted value of investments globally and over 64 percent of the number of individual funds and other institutional equity structures invested in primary agriculture.

The four most-favoured regions are also seen as accounting for "about 65-70% of the currently investable market in farmland globally" (pers. comm. with Novirost). These regions have the following key features in common: (i) strong agricultural potential, (ii) well-developed farmland markets, (iii) significant depth in farming expertise, and (iv) effective legal and contracting processes.[97] They are also all net food exporting regions.

While investment in farmland in CEE and the CIS has increased significantly in recent years, it still represents an insignificant share of overall institutional investment in primary agriculture or farmland globally (which itself makes up a small fraction of institutional investor portfolios).

Other significant agricultural producers such as Argentina currently have limitations on foreign ownership of farmland; in the case of Africa, the smaller scale of operations, availability of skilled expertise, and potential risks concerning ownership of land, limit the current scope of investment opportunities. Most countries in CEE and the CIS are, at this stage, generally not significant investment priorities for most large institutional investors for various reasons, including perceived complexities in doing business and country risk perceptions. The following section provides an analysis of the main investor typologies.

Pension funds

Pension funds are the largest institutional investors in most industrialized economies and are increasingly showing interest in investing in primary agriculture.[98] In particular, the 2008 crisis and the consequent farmland prices appreciation

96 Macquarie Agricultural Funds Management (MAFM) estimates that funds have so far invested in only USD30-40 billion of the "USD1 trillion investible potential in farmland worldwide" (Agrimoney.com, 2012c). Oakland Institute (2012b), an independent policy institution, estimates institutional investments in farmland worldwide at USD10-25 billion since 2007–2008 and forecasts that this figure "might double or triple in the coming years".

97 MAFM estimates the overall value of agriculture land worldwide at USD8.3 trillion. MAFM, a division of Macquarie Group, manages more than 3.6 million hectares of land and has over AUSD1 billion in investments and commitments including livestock, wool, timber and nuts (Macquarie, 2012).

98 These are predominantly pension funds from North America and Europe, but also funds in Australia and South Africa (UNEPFI, 2002).

Table 16: Number of funds and funding amounts

Region	Number of funds	Share of total funds (%)	Funding (USD billion)	Share of total funding (%)
North America, Latin America, Australia/New Zealand	37	64.9	18.8	83.2
EBRD region	16	28.1	2.4	10.5
Africa	4	7.0	1.4	6.3
Total	**57**	**100**	**22.6**	**100**

Source: research from publicly available information and interview sources.

Note: Fund amounts include a mix of committed and targeted funding and should therefore be regarded as indicative only. There is no significant presence of equity funds invested in arable crops farming in Asia.

seem to have accelerated the agriculture programme of many pension funds (Reuters, 2012).

Macquarie reports that pension funds are now investing substantially in farmland globally, as they endeavour to diversify portfolios and generate long-term stable returns at a time of market volatility and low yields on fixed income securities (Reuters, 2012). As a general consensus, investors view operating returns from farming as yielding 3-7 percent annually, in addition to potential asset value appreciation. This is attractive when compared to 10-year US treasury bonds currently yielding around 2 percent.

Pension funds participate in the sector as leaders or participants in dedicated investment companies (an example is the recent formation of Global Agriculture LLC, described below), or as limited partners in private equity funds. They may also take direct equity positions in operating assets, in which case there would be an asset manager with specialist expertise overseeing the investment.

While farmland has been an asset class for US pension funds for several years, this is a more recent phenomenon among European pension funds. The UK Environment Agency Active Pension Fund provides an example illustrating the rationale of investing in farmland, having recently announced plans to create a GBP250 million sub-portfolio investing in property, land and infrastructure. The proposed split is between sustainable property (GBP90 million), infrastructure (GBP70 million), forestry (GBP35 million) and farmland (GBP35 million). The strategy is designed "to improve diversification" by increasing investment in alternative or real assets; however, "farmland and timberland combined will not exceed 3.5% of the total portfolio". The sub-portfolio is targeted to achieve average returns of "4-6% above inflation" while assuming "medium to long-term risk that is significantly lower than that which is associated with equities". The fund also expects to obtain "identifiable and reliable" annual cash flows, a proportion of which are linked to inflation. The fund acknowledges that the sub-portfolio would have limited liquidity, but expects to benefit from an illiquidity premium (Environment Agency, 2012a).[99]

Another example is the UK Pension Protection Fund (PPF), which recently announced plans to invest in farmland and timberland to develop its alternative investment portfolio and diversify its assets. The fund recently appointed seven specialist fund managers to manage its farmland and timberland portfolio.[100]

Hedge funds

Another type of investor increasingly involved with farmland is hedge funds. While similar to mutual funds in that investments are pooled and professionally managed, they are much more flexible in their investment strategies and generally adopt an aggressive, speculative approach. Hedge funds cater mainly to the very high net-worth sector, often act outside conventional regulatory constraints and lack transparency. They seek larger deals and can

99 The Environmental Agency Active Pension Fund maintains a reputation as a financially and environmentally responsible investor. In farmland, the fund seeks "eco-friendly and sustainable farming ventures that demonstrate good environmental stewardship of land; soil and water resources or enhance the productivity and sustainability of farmland" (see Environment Agency, 2012b).

100 Managers appointed include Brookfield Asset Management, Dasos Capital Oy, GMO Renewable Resources, Hancock Timber Resource Group, Macquarie, New Forests Pty, and Stafford Timberland (Pension Protection Fund, 2012).

invest in private equity funds or other private or public investment structures, including in developing regions that are viewed as both more risky and opportunities to deploy large amounts of capital quickly.

An example is Galtere Limited, a commodities hedge fund, which is developing an agribusiness fund that "aims to capitalize on the lack of agriculture related infrastructure in Brazil and plans to make strategic investments involving agricultural warehousing and grain storage". The fund aims to profit from what Galtere calls "inverse stagflation": the concomitant decrease in value of financial assets and increase in agricultural and other real assets. The fund has planned to invest in a variety of macro-driven global agribusiness opportunities, especially those in agricultural production, infrastructure, technology and soft-food staples. The firm has identified Australia, Brazil and Uruguay as the most promising countries for investment, and aims to help portfolio companies boost efficiency, production and profits over a seven-year timeframe. Galtere announced in 2011 that it hoped to raise USD1 billion for the fund from mainly institutional investors, endowments and family offices (FINalternatives, 2010).[101]

Another hedge fund investing "in farmland and farmland businesses globally" is Insight Investments. When announced, the Insight Global Farmland Fund was reported as a Guernsey-domiciled, closed-end vehicle "that will invest directly in a number of farmland holdings" and have "a target net return of 12-15 per cent". The fund differentiates itself by being globally invested, while most other funds focus on one particular geographical area.[102]

Sovereign wealth funds

Sovereign wealth funds (SWFs) are state-owned investment vehicles that hold or manage public assets for financial and strategic objectives. They are commonly established from balance of payments surpluses, proceeds from privatizations, fiscal surpluses and receipts from commodity exports.[103] Several SWFs have become active participants in primary agriculture and often share business models and priorities with other institutional investors.

Investment objectives include both strategic food supply and investment returns. SWFs invest in primary agriculture and food production generally through either specialized subsidiaries or direct investment in companies that have expertise in the sector.

The Qatar Investment Authority is probably the most active SWF invested in agriculture; the fund has investments in AdecoAgro, a diversified farmland and agribusiness venture in South America,[104] as well as investments in Australian agribusiness through its subsidiary Hassad Food (*Financial Times*, 2011b). The Qatar Investment Authority has also been linked in media reports to potential farmland investments in the EBRD region, in Turkey and Ukraine (Reuters, 2012).

Sovereign wealth fund structures from Abu Dhabi have also reportedly recently concluded an agreement to invest in state-owned farms in Serbia (further details in the country analysis on Serbia) (National Dubai, 2010; Tanjug, 2012).[105]

The Russian Direct Investment Fund (RDIF) is a sovereign wealth fund that was established in 2011 to make equity investments in strategic sectors of the Russian economy. It has a mandate to co-invest with large international investors in an effort to attract long-term direct investment capital. According to the 2012 plan, up to USD250 million will be invested in

101 Other hedge funds invested in farmland include Ospraie Asset Management and Passport Capital.

102 Insight Farmland Fund has made investments in Latin America and New Zealand (IPE, 2012; see also Insight Investment, 2013).

103 Assets controlled by sovereign wealth funds now exceed USD5 trillion; the "super seven" funds include Abu Dhabi (United Arab Emirates), China, Kuwait, Norway, Russia, and two funds from Singapore. In addition, Qatar's fund recently exceeded the USD100 billion threshold. Smaller economies like Nigeria and Angola have also recently created SWFs; the latter fund has given agriculture as one of its investment priorities (McKinsey & Company, 2012).

104 As an example, in July 2010, Hassad Food bought Clover Downs, an agricultural property in Queensland, Australia, with approximately 125 300 hectares and capacity for 64 000 sheep. Hassad Australia currently has 11 agricultural aggregations under ownership comprising some 250 000 hectares of pastoral and cropping enterprises (Hassad Australia, 2012).

105 Proposed terms of agreement include funding provided by UAE, while Serbia would repay the loan through guaranteed delivery of various agricultural products to the UAE.

agriculture.[106] Additionally, agriculture and food retailing has been selected by the RDIF as "one of five priority sectors for modernization".

China's sovereign wealth fund, the China Investment Corporation (CIC), and the RDIF recently announced the creation of a joint investment fund, in the form of a limited partnership, to channel Chinese investment into projects in the Russian Federation. The proposed fund plans to raise USD2-4 billion, with each side contributing USD1 billion and the balance coming from third-party international investors. The fund will focus on several sectors including agriculture, forestry, transportation and logistics (Caixin Online, 2012).

In Saudi Arabia, "King Abdullah's Initiative for Saudi Agricultural Investment Abroad" is a sovereign structure which provides funding to private Saudi companies to invest in food production. The primary objective of this initiative is to enhance food security in Saudi Arabia. Target countries within the EBRD region include Kazakhstan and Ukraine (Kingdom of Saudi Arabia Ministry of Agriculture, 2010).

Another recent Saudi initiative is the "Saudi Agricultural and Livestock Investment Company" (SALIC), owned by the Saudi Arabian sovereign wealth fund. SALIC was established in 2011 with paid-up capital of USD800 million and has the mandate to become "a global agricultural investor and partner with agribusiness-related businesses worldwide". The company focuses on producing staple foods (grains, edible oils) and livestock products and regards the following countries within the EBRD region as "target geographies": Bulgaria, Hungary, Kazakhstan, Kyrgyzstan, Poland, Romania, the Russian Federation, Ukraine and Uzbekistan. In recent news, SALIC announced their participation in a consortium of Saudi-based investors buying Continental Farmers Group (Interfax-Ukraine, 2013).

In June 2012, the Islamic Development Bank (IDB) set up a Food and Agribusiness Fund, a public-private partnership managed by the Islamic Corporation for the Development of the Private Sector (ICD).[107] The fund is being advised by Rabobank's Robeco asset management arm, and will address food security by investing in food and agribusiness in Islamic countries. This will be achieved by acquiring "strong minority stakes, of perhaps 20-49%" in agribusinesses, with a focus on 15 countries: these include a range of exporters and importers including Bangladesh, Kazakhstan, Malaysia, Pakistan, Turkey and parts of North Africa. The fund, which will have a traditional private equity structure with a 10-year lifespan and a five-year investment period, plans to raise USD600 million from governments, multilateral organizations and institutional investors.

While the initiatives described above have attracted media attention, there have so far been no reported investments by SWFs or other sovereign structures of any significant scale within CEE and the CIS.[108]

High net-worth individuals/family offices

High net-worth individuals (HNWIs) and the family offices that often manage their assets, are able to act much like hedge funds and can therefore afford to commit large sums of money over a long period of time. As such, they are potentially an important source of capital for private equity funds and similar structures investing in asset classes with such profiles.[109]

Diversified investment companies

Diversified investment companies are hybrid structures that participate in funds or pure-play

106 The Russian Direct Investment Fund was formed with USD10 billion from state development bank Vnesheconombank, payable in tranches of USD2 billion a year. There has been a proposal to increase the total by some USD8 billion by 2015 (*Financial Times*, 2012).

107 The Islamic Corporation for the Development of the Private Sector (ICD) is a multilateral organization affiliated with the Islamic Development Bank (IDB) Group. Shareholders consist of the IDB, 51 member countries, and five public financial institutions. The mandate of ICD (2013) is to support the economic development of its member countries through provision of finance to private sector projects in accordance with the principles of the Shari'a law.

108 News released as this study was being concluded concerned a consortium of Saudi groups – comprising dairy giant Almarai, grain importer Al Rajhi and SALIC, the agriculture arm of the country's sovereign wealth fund – having made an offer to acquire the total shareholding of Continental Farmers Group (Hemscottir, 2013; see earlier this section).

109 An example is Trigon Agri (2013), whose initial start-up capital of EUR20 million was raised partly from Finnish HNWIs.

investment companies, and they can be publicly listed or privately held. They operate like hedge funds or family offices with actively managed investment portfolios and often hold long-term positions. An example is Black Earth Farming in the Russian Federation, which includes two such firms among its long-term owners: AB Kinnevik and Vostok Nafta.[110]

International financing institutions (IFIS)

The International Finance Corporation (IFC) is an example of an international financing institution that has invested in funds that invest in primary agriculture. The IFC is invested in Altima One World Agriculture Fund, which was established following the food price spikes in 2007–2008. Altima is invested in four unlisted portfolio companies engaged in primary agriculture in Africa, Australia, Central Europe and Latin America. IFC is also invested in Advance Terra Fund, a real estate investment trust listed in the Bulgarian Stock Exchange, which invests in primary agriculture in Bulgaria.

KfW, the German state development bank, is invested in the recently launched Africa Agriculture and Trade Investment Fund. However, it is as yet unknown whether this fund will consider investments in primary agriculture. The African Development Bank (AfDB) also recently launched AgVance Africa Fund, which is the first agribusiness-focused fund of funds in Africa. It is anticipated that AgVance fund will invest in 12 to 15 best-in-class private equity funds targeting portfolio companies along the agribusiness value chain and across the continent.[111]

110 Initial funding for Black Earth Farming (2013) came from Vostok Nafta and Kinnevik, family-backed Swedish investment companies who remain key long-term shareholders. Both are well-capitalized investment companies listed in Stockholm. Kinnevik has a long and successful investment record dating back to 1936. Vostok Nafta was established by the Lundin group, a global group of publicly traded companies led by a single family, to focus on diversified investment opportunities in Russia and the CIS.

111 Agvance Africa Fund's objective is "to increase private investment into the agribusiness sector to address food security and unleash the largely unexploited potential of African agriculture and agribusiness sectors". Agvance is managed by Credit Suisse Customized Fund Investment Group (CFIG) and targets total capital commitments of USD500 million. The fund is designing an environmental and social management system in cooperation with the World Wildlife Fund (WWF) (AfDB, 2013).

Recent developments by key investors

There have been several noteworthy examples of recent capital commitments by investors in farmland and agriculture. While, few have been exclusively dedicated to the CEE and CIS regions so far, several groups have included the regions in their strategies. Many investors prefer developed markets, as they are sensitive to country risks in the CIS and the possible reputational complications of investments in some developing countries.

Table 17 describes examples of recent commitments by institutional to primary agriculture and farmland in CEE and the CIS. Exposure to these regions has been relatively small, and estimates developed during the study place total investments at some 10 percent of global investments in this sector. It is followed by details on the key investors.

TIAA-CREF

TIAA-CREF is an investment manager with about USD490 billion in assets under management. These include some USD2.5 billion invested in more than 400 farmland properties spanning over 250 000 hectares in Australia, Eastern Europe, South America and the United States.[112] These farmland assets represent some 0.5 percent of total assets under management.[113] The organization anticipates that this figure may rise to USD4 billion in the near future, as attractive assets are identified.

In 2010, TIAA-CREF acquired a majority interest in Westchester Agriculture Asset Management, a specialist global agricultural asset manager, based in Illinois, and with offices in Australia and Brazil.[114] In April 2011, TIAA-CREF set up Global Agriculture LLC with several Canadian and European pension funds as co-investors. The venture (described elsewhere in this study) will seek portfolio diversification and exposure to global demand for agricultural products through investments in farmland globally.

112 In comparison, Black Earth Farming controls 318 000 hectares in Russia.

113 TIAA-CREF recently announced that the institution would fund a new "Center for Farmland Research" at the University of Illinois, which will study farmland values and their effect on the agricultural economy (des Garennes, 2013).

114 According to the company's website, Westchester was founded in 1986 and has played a role in the acquisition, marketing and management of "over 400 diverse farmland assets" worth more than USD2 billion.

Table 17: Institutions currently invested in primary agriculture in CEE and the CIS

Investor	Fund location	Amount invested	Investee	Description
TIAA-CREF	United States	Not disclosed	Rabo Farm Europe Fund	Fund invests in farmland in Eastern Europe within the EU
AP3	Sweden	USD40 million	Alpcot Agro, Black Earth Farming	Listed companies invested in the Russian Federation and Ukraine
APG	Sweden	Not disclosed	Rabo Farm Europe Fund	Fund invests in farmland in Eastern Europe within the EU
PFZW (PGGM)	Netherlands	Over EUR50 million	NCH Capital Rabo Farm Europe Fund	Funds invest in farmland in Eastern Europe within the EU, and in the CIS
CalPERS	United States	Over USD1.2 million	Black Earth Farming (BEF)	Listed company invested in the Russian Federation
Nordea Investment Funds	Norway	Not disclosed	Alpcot Agro	Listed company invested in the Russian Federation and Ukraine
Swiss Life	Lichtenstein	Not disclosed	Alpcot Agro	Listed company invested in the Russian Federation and Ukraine
Alecta Pensions försäkring	Sweden	Not disclosed	Trigon Agri/ BEF	Listed companies invested in the Russian Federation and Ukraine
Holberg Funds	Norway	Not disclosed	Black Earth Farming	Listed company invested in the Russian Federation
Varma Mutual Pension	Finland	Not disclosed	Black Earth Farming	Listed company invested in the Russian Federation

Sources: fund information and media reports.

TIAA-CREF's investment approach to investing in agriculture is a global one with the objective to capitalize on opportunities through direct ownership of farmland and through diversification across countries, crop types and operating strategy.

The institution considers farm-specific investment criteria in each acquisition, which take into account "regional and microclimate factors, including weather variability and soil types; the strength of local infrastructure and farmland-tenant markets; water availability and sustainability; crop returns; environmental and social impacts; the potential for future operational growth; and capital gains". Investment decisions also consider crop type with the view that row crops generally exhibit stable income and capital return, while permanent crops offer higher income, but also greater risk. As a result, the fund focuses on row-crop farmland and makes select, opportunistic investments in permanent-crop farmland. To ensure sustainability, there is a strong emphasis on environmental stewardship.

Swedish pension systems buffer funds AP2 & AP3

The Swedish national pension system maintains five individual funds. The second fund, AP2, manages some USD34 billion in assets. AP2 has invested around USD250 million in the TIAA-CREF venture, Global Agriculture LLC. The fund targets annual returns of "7-8%" on farmland investments, which include USD50 million in Teays River Investments Ag Real Value Fund. As of mid-2012, when fully invested, AP2's commitment to farmland stood at around 1 percent of assets under management.

The third of the five funds within the Swedish pension system, AP3, has assets under management of some USD33 billion. In April 2010, the fund reported that it had invested USD42 million in Alpcot Agro and Black Earth Farming, publicly listed companies that invest in farmland in the Russian Federation and Ukraine (Pensions & Investments, 2010). These investments represent currently 0.24 percent of assets under management. The fund has stated its intention is to invest some 1.0 percent of assets under management in farmland.[115]

APG

Netherlands-based APG, which has EUR310 billion (USD409 billion) under

115 Första AP-fonden (AP1) has invested some USD58 million in about 15 grain and dairy farms in Victoria in Australia, and a further USD50 million in mostly dairy farms in New Zealand. Investments made through AP1's First Australian Farmland Fund (Henshaw, 2012).

management,[116] has a declared intention to raise its overall investment in farmland to around EUR1 billion. Previously, the fund invested in agricultural commodities via commodity futures markets. Since 2007, the fund has also invested "a few hundred million euro" in farmland, primarily in Australia, Eastern Europe, Latin America and New Zealand. The strategy serves the dual purpose of a more efficient allocation to commodities and ownership of real assets, especially land, and provides portfolio diversification and a hedge against inflation.

APG's agricultural investments include a livestock fund in Australia, tea plantations in India, a farmland fund in the eastern part of the European Union (grains and oilseeds), and a fund owning farmland in Latin America (APG Group, 2011).

Railpen

One of the United Kingdom's largest pension funds, Railpen manages around GBP20 billion for the Railways Pension Scheme. While some fund managers (such as TIAA-CREF and AP2) make distinct allocations to the agricultural sector, Railpen's approach is to allocate funds opportunistically from capital allocated for real estate or private equity. The fund invests in farmland as part of its 25 percent allocation to alternatives, mainly real estate, infrastructure, private equity, hedge funds and commodities worldwide, including in less mature markets, like Australia, New Zealand and South America, from which it targets absolute returns of 10-18 percent (Reuters, 2012).

PFZW (formerly PGGM)[117]

Pensioenfonds Zorg en Welzijn (PFZW) is a Dutch pension fund for more than 2 million existing and former employees in the care and welfare sector. The fund has approximately EUR115 billion in assets under management (as of February 2012) and has invested EUR50 million in funds managed by NCH Capital Inc (Pensions & Investments, 2010). The fund has also invested in Rabo Farm Europe Fund, which invests in farmland in Poland and Romania and other EU-27 countries (Rabo Fund has a commitment target of EUR315 million). Additionally, PFZW has exposure to farmland in Latin America.

CalPERS

The California Public Employees' Retirement System (CalPERS) is among the largest pension funds and is often regarded as a leader in the field. The fund accepted policy guidelines for investing in farmland in 2004 (CalPERS, 2004). CalPERS manages over USD233 billion on behalf of 1.6 million members. In 2010, Calpers declared an investment in Black Earth Farming SDRs of just over USD1 million (CalPERS, 2010).

Growing interest from institutional investors

Investments by institutions in primary agriculture and farmland have increased in recent years. This investor segment represents vast sums of capital that make up the majority of passive investment in private equity limited partnerships, as well as other funds. A small, but increasing share of their managed capital is being invested in primary agriculture and farmland through funds and other dedicated managed investment companies.

A survey of funds and investment companies invested in primary agriculture and farmland conducted in 2010 (Highquest Partners, 2010) found that endowment funds, HNWIs and family offices have historically been their principal source of capital. The survey also reported a noticeable shift in recent years, with hedge funds and large institutions, including more endowment and pension funds, entering the asset class by investing in existing vehicles, in some cases sponsoring their own investment vehicles to attract funds for the sector, as well as investing in publicly listed companies active in the sector. The survey confirmed the trend, finding that 63 percent of investors had "significantly more" interest in the asset class than three years earlier, which suggests that primary investors are becoming increasingly knowledgeable about the sector.

In September 2011, a group of institutions managing assets totalling some USD1.3 trillion announced a set of principles for investing in farmland: the Principles for Responsible Investment (PRI) in Farmland were developed and endorsed by AP2 (Sweden), ABP (the

116 Assets under management as of October 2012.

117 PFZW has contracted PGGM Vermogensbeheer B.V. to manage the assets of the pension fund.

Table 18: Structures used in investments in primary agriculture in CEE and the CIS

Type	Ownership	Investment horizon	Liquidity/ease of exit strategy
Private equity fund – closed ended	Private/may be listed	5-7 years	Non-liquid, subject to realization of investments
Private equity fund – open ended	Private	Open	Liquid
Publicly listed primary agricultural companies	Public	Open	Liquid
Privately owned primary agricultural companies	Private/public	Open/may be defined by shareholders agreement	Non-liquid, subject to investment documentation
REITs	Private/public	5-7 years	Generally liquid
Fund of funds	Private	5-7 years	Non-liquid, subject to realization of investments

Netherlands), APG (the Netherlands), ATP (Denmark), BT Pension Scheme (UK), Hermes EOS (UK), PGGM (the Netherlands) and TIAA-CREF (US) (Pensions & Investments, 2010).[118] These principles provide a framework for investors to incorporate social, environmental and governance considerations into farmland investments, as well as best practice guidelines for the following five key aspects (UNPRI, 2012a):

- promoting environmental sustainability;
- respecting labour and human rights;
- respecting existing land and resource rights;
- upholding high business and ethical standards;
- reporting on activities and progress towards implementing and promoting the principles.

Investment structures

Structures for investing in primary agriculture in CEE and the CIS have evolved dramatically since transition as land reforms have progressed in these regions. Laws and processes for transacting private control and ownership of land and other commercial aspects have developed significantly, though in many countries there is some way to go on reforms.

Investors have recognized the opportunity to enter markets early when risk is high and realize the gains of asset appreciation as risk diminishes, and they have used various structures to do so.

This section provides an overview of six investment structures in primary agriculture and farmland:

- closed-end private equity funds;
- open-end private equity funds;
- publicly listed primary agricultural companies;
- privately owned primary agricultural companies;
- REITs;
- fund of funds.

In general, the strategic position of the investor and the role of the assets in a portfolio are important in determining which structure to use. Structures are differentiated by varying levels of liquidity and exit options, the investment horizon and the investor's ability to influence management decisions.

Examples of structures used include closed-end private equity funds, such as those managed by NCH Capital in the Russian Federation and Ukraine, and fund-like structures where an investment manager develops potential investment opportunities that offer exposure to primary agriculture to a pool of investors on a case-by-case basis.[119] However, the predominant structure used by investors in recent foreign-led investments in CEE and the CIS has been that of a private investment company, which in several instances has then transitioned to a publicly listed company. Examples of foreign investments include Alpcot Agro, Black Earth

118 In August 2012, another nine investors signed on to the Farmland Principles: Aquila Capital Green GmbH (Germany), Adveq Management AG (Switzerland), Insight (UK), PKA Ltd (Denmark), AAG Investment Management Pty Ltd (Australia), Rabo Farm (the Netherlands), UFF Asset Management (South Africa), Treetops Capital LP (US) and Southern Pastures Management Limited (New Zealand).

119 An example of such a structure is that used by Jantzen Development (n.d.) who "acquire, consolidate, manage and resell farmland projects in Central and Eastern Europe" in Czech Republic, Slovakia and Romania. A feature advertised by this structure is that it removes developer risk.

Box 4. Private equity funds

A private equity fund is a structure used for investing in equity and, to a lesser extent, debt securities according to a defined strategy. Private equity funds typically have a fixed term, usually seven to 10 years, and often with the possibility of annual extensions. At inception, institutional investors make an unfunded commitment to the limited partnership, which is then drawn over the term. Funds can be traditional, whereby all investors have equal terms, or asymmetric, whereby investors have different terms. The fund structure is managed by a private equity firm, which serves as the general partner and investment advisor. Typically, a private equity firm may manage a series of distinct funds and attempt to raise a new fund every three to five years as the previous one becomes fully invested.

Most private equity funds are structured as limited partnerships and governed by the terms in the limited partnership agreement. Such funds have a general partner, which raises capital from institutional investors, which invest as limited partners. Investors may typically include pension funds, insurance companies, endowment funds, other foundations, family offices and high net-worth individuals (HNWIs). The funds are generally managed by individuals with specialist knowledge of the sector and the ability to source and invest in a portfolio of investments.

The private equity model serves to provide undervalued companies that have proven business models with patient capital to realize the potential of the business. Once the performance of the business has stabilized with regular predictable results, private equity seeks an exit to realize the value appreciation. The time horizon required for this process varies with the sector involved. Generally, substantially more information on prospective investments is available to private equity managers. This helps them to assess more accurately the viability of business plans, determine the post-investment strategy and project expected future performance. The greater level of disclosure contributes significantly to reducing risk in private equity investment.

Farming, Continental Farming Group and Trigon Agri. Examples of local firms include Agroliga, Agroton, Industrial Milk Company, KSG Agro and Mriya Agroholding.

Very few farmland companies have managed to expand under a private company structure due to the high capital requirements in large-scale farming, and there is inevitably the necessity to seek institutional capital in public markets (a notable exception is Ukrlandfarming).

Other dedicated investment structures used include open-ended private equity funds (e.g. the Black Sea Agriculture Fund) and several REITs invested in Bulgaria.[120] North Bridge Agri Invest AS is a fund of funds currently invested in underlying funds investing in primary agriculture in Romania and France.

There are a relatively small number of private equity funds invested in primary agriculture in CEE and the CIS. However, the extent of two of these fund managers – NCH Capital and Rabo Farm – is extensive and these groups are the largest foreign-led investors in primary agriculture in their respective regions. Other private equity funds invested in the sector include SigmaBleyzer Southeast European Fund IV in Ukraine,[121] UFG Real Estate Fund in the Russian Federation,[122] Ceres Agrigrowth Fund in Bulgaria, and Altima One World Agriculture Fund, which invests in unlisted primary agricultural companies globally including Spearhead International, a private farming company active in Poland, Romania and Serbia.

Other foreign-led private equity investors active in the sector include Renaissance Partners (Ukrainian Agrarian Investments Limited) and Lupus Holdings (Volga Farming and Redland Farming in the Russian Federation).[123] VTB Capital and AVG Capital Partners are currently developing private equity structures to invest in agribusiness ventures in the Russian Federation and the CIS.

Several US-based hedge funds have invested in primary agriculture in the Russian Federation; these include Och-Ziff Capital Management, which has since exited its investment in AgroVista Tambov in the Russian Federation, and QVT Financial, which

120 There are six REITs invested in primary agriculture in Bulgaria, which combined have a market capitalization of some USD285 million (December 2012) and control approximately 78 000 hectares of agricultural land (see the Bulgaria country analysis for additional information on these REITs).

121 SigmaBleyzer (2012) is a US-based private equity firm that specializes in control investments in turnaround and distressed situations. EBRD is invested in SigmaBleyzer Southeast European Fund IV, which owns Harmelia Investments, a 70 000-hectare agricultural holding in Ukraine.

122 UFG Real Estate Fund owns the portfolio company, RLB Agro (2012). This company is a 28 000-hectare arable crops producer located in Bryansk, Russia.

123 Volga Farming (2013) is the only primary agricultural investment in Russia with a Multilateral Investment Guarantee Agency (MIGA) guarantee.

invested in Vostok Agro in the Russian Federation. Investment bank Morgan Stanley has also exited an investment in primary agriculture in Ukraine.

In Turkey, the Egeli & Co Agriculture Investment Trust is a closed-end fund focusing on agricultural investment including farmland. The fund is listed on the Istanbul Stock Exchange and is the first such structure offering investors exposure to primary agriculture in Turkey.

Closed-end private equity funds

A private equity fund structure (see Box 4) is well suited to investments in primary agriculture and farmland for reasons, which are typical to these structures:

- providing specialist expertise to acquire and structure investments;
- sourcing capital to match the investment time horizon;
- influencing the strategic direction and management of the business;
- developing the business into an institutionalized company;
- unlocking the value through eventual sale and exit from the investment.

Private equity funds typically seek investee companies with strong growth potential and high-quality management teams. However, as there is currently very limited expertise available and experienced in running modern large-scale farming ventures in CEE and the CIS, funds have generally been compelled to develop internal operational management expertise.

Whereas, traditionally, private equity funds invest in several companies within a portfolio of investments, differentiating risks across multiple management teams, experience in primary agricultural investments has been different. Funds invested in this sector in CEE and the CIS generally invest in a number of farming properties or clusters and attempt to realize synergies through centralized general management and distinct teams at the operating level.

In terms of investment time horizon, private equity funds generally represent more patient capital that is committed to seeing investments through development and growth stages that investors in companies are often not inclined to participate in.

While most private equity funds invested in CEE and the CIS view a time horizon of around seven years as adequate for most sectors, recent experience in investments in primary agriculture indicate that a horizon of at least nine to 12 years is needed to achieve earnings stability and a consistent basis for valuation. The attractiveness of this longer time horizon is dependent upon current and projected valuations of the underlying assets.

Types of investors

Investors in private equity funds generally comprise those investors who have a long-term investment horizon. These include pension funds and endowment funds, as well as other institutional investors like funds of funds, family offices and high net-worth individuals (HNWIs). IFIs often participate in private equity funds in markets where their involvement may, for example, play a catalytic role in mobilizing the entry of international capital, help align fund structures and terms with international best practice, and support priority asset classes that have not been able to attract significant amounts of capital.[124]

There is a trend towards increasing geographical diversification, with portfolio investments typically across Australia, Brazil and North America (Canada and US), and to some extent in EU accession countries in Central Europe. The CIS countries have not yet emerged as significant targets among most institutions.

When investments have a specific focus, founders may attract investors to a private special fund or similar structure that can later be converted into a different structure. Alpcot Agro, Black Earth Farming and Trigon Agri were all incorporated with private investments under such a structure, before publicly listing their shares once a critical scale of investments and operating track record had been achieved.

124 An example is IFC's investment in Altima One World Agriculture Fund in 2008. The fund invests in world-class farm operators ("Agro Champions") that "help increase economies of scale and improve farm productivity by implementing modern technology and best practices". Exit strategy envisages IPOs or sale to strategic investors.

Box 5. Growth equity

Private equity in the form of growth equity may be particularly well suited to primary agricultural producers with proven business models. Growth equity is financing that helps high-potential companies to accelerate their growth. By providing capital, strategic guidance at the board level, and operational support, investors can help companies realize full revenue, profit and market potential. Many growth equity investors will make minority investments, and prefer that current managers continue running their businesses. Growth equity investors focus on rapidly growing companies with proven business models. Many successful business owners reach an inflection point where they identify growth opportunities – such as geographic expansion, acquisition strategies and product development – but to pursue these opportunities, they require capital beyond their existing resources.

Black Earth Farming is now a listed holding owning and managing numerous operating companies. Alpcot Agro and Trigon Agri maintain a fund-like structure, with independent management companies owned by founders under contract to the holding.

Investment rationale

In Europe and the United States, private equity has helped foster rapid growth in technological innovation, creating substantial knock-on benefits for the whole economy. While the final results remain to be seen, the beginning of a developing, dynamic agribusiness management class is taking shape in CEE and the CIS, often with critical support from private equity.
Private equity managers generally seek active participation in a company's strategic direction, from developing a business plan to selecting senior executives, introducing potential customers and the M&A strategy, and identifying eventual buyers of the business. While assuming an active role at the strategic level, private equity traditionally acts as a passive financial investor in relation to operations. In investments in primary agriculture, private equity firms have often had to assume direct operational responsibility for acquiring and managing assets.

Furthermore, the desired strategy can often be implemented more efficiently and faster in the absence of public market scrutiny and regulation, and this flexibility represents another feature whereby risk in private equity investment can be reduced.

Buyout managers are particularly able to make efficient use of leverage. They aim to organize each portfolio company's funding in the most efficient way, making full use of different borrowing options from senior secured debt to mezzanine capital and high-yield debt. By organizing the funding requirements efficiently, the equity returns are potentially enhanced (Venture Choice, 2012).

Types of underlying assets

Whereas the general focus is to acquire companies with exceptional management, private equity fund investments in farmland focus on acquiring long-term control and ownership of large-scale land plots.

Investment amounts and duration

Funds dedicated to capital-intensive assets like land require sufficient scale to realize the benefits of the structure and justify their existence. Capital under management should reach at least a few hundred million dollars and can easily exceed USD1 billion. As the sector becomes more stable, capital markets for farmland develop and leverage becomes more prevalent, asset bases could grow much larger.

For illiquid assets like farmland in volatile markets like CEE and the CIS, where managers may need to delay exits until an upswing in the market cycle, the investment period can be much longer. Market players in the Russian Federation and Ukraine currently view potential holding periods of over 10-15 years.

Such an investment horizon is longer than what private equity firms and their limited partners have become accustomed to in the region. A shift in thinking with regards to holding periods will be required for private equity to remain relevant in the sector.

Exit and return prospects

Because of the closed-end structure, investors in private equity funds have very limited or no ability to withdraw invested or committed capital during the fund's life. While private equity has provided superior returns historically, with clear exit paths

Box 6. Examples of private equity funds investing in primary agriculture

Worldwide, equity funds follow a variety of investment strategies in primary agriculture and farmland. These may include own and operate, lease and operate, or own and lease. Here are a number of examples.

Altima Fund is a hybrid fund that has a mandate to combine listed (25 percent) with unlisted investments (75 percent). Altima invests primarily in farmland and in regional farm operators (or "Agro Champions"). The fund allows investors to co-invest in acquired assets. The fund has shareholdings in primary agriculture companies in Argentina, Australia, Europe and Zambia, (www.altimapartners.com).

Farmland LP is an investment fund that buys conventional farmland in the United States and adds value by converting it to organic farmland and sustainably managing it on an ongoing basis (www.farmlandlp.com).

Futuregrowth Agri-Fund invests in "responsible equity investments in agricultural land, agribusinesses and farming infrastructure". The fund offers exposure to African farmland mostly in fruit and vegetables farms in South Africa, and multiple sources of income through lease income, capital appreciation and value creation from operational efficiencies (www.futuregrowth.co.za).

Insight Global Farmland Fund seeks to provide investors with exposure to agriculture through a variety of holdings which include stakes in exclusive vehicles incorporated to hold farmland assets, shares in listed farmland companies, direct ownership of farmland, debt covenants over farmland and stakes in existing farmland funds (www.insightinvestment.com).

Lumix AgroDirect Fund invests in the production of agricultural commodities on leased farmland in Latin America. Production is outsourced to local operating partners. Crop proceeds are redeployed for the following season or available for redemptions. The fund does not own land and provides investors with annual liquidity (www.lumixcapital.com).

Macquarie Crop Partners Fund operates owned or leased arable crop farms in Australia and Brazil. These countries are selected because of the availability of large properties, mature agricultural industries and access to overseas markets for exporting farm products (www.mirafunds.com).

Rabo Farm Europe Fund invests in underperforming arable crop farmland in central and eastern European countries within the European Union. The fund owns and leases farmland to qualified operators (www.rabofarm.com).

Silverlands Fund is active in Central and Southern Africa where it invests in large-scale commercial farming businesses and employs what it calls a "Hub-Out Growers Model". In this model, the commercial farms act as hubs that support out-grower programmes. The support is delivered in the form of financing inputs, providing training and technical support, and purchasing the produce of the out-grower farmers (www.silverstreetcapital.com).

Sustainable Agriculture Fund is an unlisted investment fund which owns and operates five Australian farms involved in winter and summer crops, Angus beef cattle and four pasture dairies. Fund strategy is to diversify by sector (crops, livestock), location and water source (www.sustainableag.com.au).

Sources: fund data and websites.

through an IPO or mergers and acquisitions, the model's ability to deliver such results in farmland remains to be seen.

Examples of closed-end private equity fund structures

NCH Capital is a private equity and venture capital firm "specializing in turnaround, emerging growth, incubation, recapitalizations, growth capital, and emerging market investments" with over USD3 billion under management. The firm primarily invests in equity markets in the Russian Federation and other countries of the former Soviet Union and Eastern Europe, and it prefers to take a board seat in its portfolio companies.

Founded in 1993, NCH Capital is based in New York and has nine offices across Europe. Investors in NCH's funds include leading university endowment funds, corporate and state pension funds, foundations, family investment offices and other institutions.

NCH Agribusiness Partners L.P. was established to invest in a diversified portfolio of agricultural land and related businesses, including farmland, agribusiness assets and agribusiness-related securities throughout CEE and the CIS. Bulgaria, Moldova, the Russian Federation and Ukraine have been identified as the principal markets due to these countries having some of the most fertile soil in the world.

The fund has purchased and/or leased vast tracts of prime farmland, implementing modern farming techniques to produce agricultural commodities for global consumption at comparatively low cost.

Table 19: Examples of funds showing anticipated returns

Fund	Expected annual return (%)	Investment model	Geographic focus
Emergent Africa Land Fund	~20	Own and operate farms and related assets	Central and Southern Africa
Futuregrowth Agri-Fund	CPI + 10	Own and operate farms, mostly fruit and vegetables	Southern Africa
Greenfield	15-25	Own and operate farmland, dairy, viticulture	New Zealand
JPT Capital Agrifund	9.25	Own and operate wheat farms	Australia
Lumix AgroDirect Fund	10-25	Lease and operate farms	Paraguay, Brazil, Uruguay, Argentina
Rabo Farm Europe Fund	8-9	Own and lease farmland	Central and Eastern Europe within the EU
Silverlands Fund	15-20	Own and operate farms/other investments	Central and Southern Africa

Source: fund data, websites.

The firm is among the largest owners and managers of farmland in the world, with over 825 000 hectares of farmland and related grain storage capacity. Farmland investments represent around USD1.4 billion of the limited partnership's committed capital.

NCH Capital (2012) is currently seeking USD1 billion in investment for its second fully dedicated agribusiness fund, NCH Agribusiness Partners II, L.P.

A similar structure is the "investment club" concept, which operates like a fund in many ways, with a manager overseeing assets for private investors. Investments are made as funds are raised and there is no formal fund created. Investors participate only to the extent of assets invested, without outstanding follow-on commitments, and do not benefit from the diversification offered by a proper fund structure.

An example of a private special fund in the form of an "investment club" is Jantzen Development, which manages EUR140 million in assets across 17 000 hectares of owned and leased land in the Czech Republic, Romania and Slovakia. Initial fundraising activities focused on pension funds, endowment funds and foundations in Europe and HNWIs, and family offices primarily in Scandinavia.

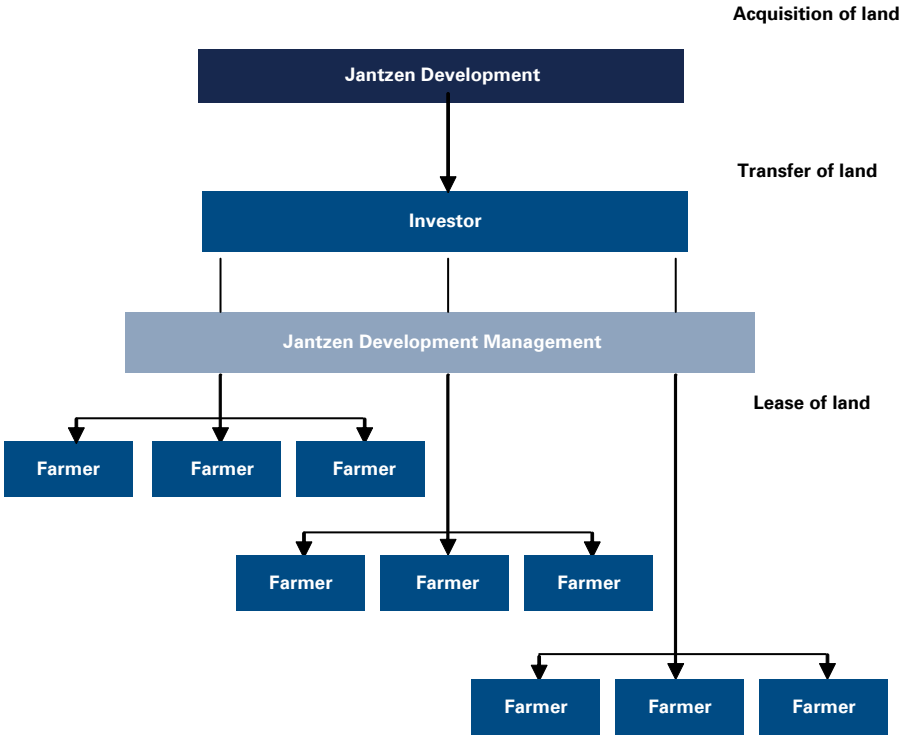
Jantzen Development is a privately held limited liability company. It acquires farmland, pursuing a strategy of consolidation; sells farmland to passive investors; enters into lease agreements to manage the farmland sold or leases the farmland to third-party operators; and finally assists passive investors in farmland to exit their holdings. The company targets a real investment rate of return of "10-12%".[125] Figure 15 illustrates the structure of Jantzen Development's investment activities.

Mintridge International, a property management firm, and Velcourt Group Plc, an international farm management company, have recently launched a similar investment approach targeting farming investments in Romania.[126] In this instance, Mintridge will use its expertise in the acquisition and management of land to consolidate fragmented plots of land, while Velcourt will bring its farming knowledge, networks and partnerships, to optimize farming efficiency. The venture aims to develop and offer multiple projects to investors, with each valued at EUR14-20 million and with the anticipation of IRRs "in excess of 20% over 8 years". Key investment criteria in the selection of investments include "land availability, price and potential, legal

125 In the European Union, producers receive subsidy payments for each hectare cultivated. These subsidies are paid to the producer cultivating the land and not to the landowner, even when the latter leases the land to the former. It is common practice that landowners in Romania and Slovakia are willing to lease farmland at a rental equivalent to EU subsidy payments. Five to ten-year lease agreements enable the producer to enjoy the same economies of scale and other benefits that land ownership would provide but without the capital outlay. The long-term increase in farmland value goes to the landowner, who bears the financial risk. The most challenging issues involved in this structure include legal issues over land titles and the highly fragmented ownership structure in farmland in those countries.

126 Mintridge International (n.d.) is a property management firm specializing in the sourcing, acquisition and management of farmland across Central and Eastern Europe. Velcourt Group Plc (n.d.) is a UK-based farm management firm, which manages and advises on farms throughout Europe.

Figure 15: Jantzen Development: farmland investment process



Source: Jantzen Development (n.d.).

framework, agricultural scope and climatic suitability". The investment objective is "to build profitable farming businesses, whilst benefiting from capital appreciation of the land itself".

Open-ended private equity funds

Open-ended private equity funds are uncommon due to the illiquidity of the underlying assets and the resulting inability to sell assets to meet possible redemption requirements. This applies particularly to farmland, which generally exhibits low liquidity. However, there are a few small open-ended funds that have been established to invest in farmland in CEE and the CIS. One example is the Black Sea Agriculture Fund (2012).

Open-ended funds do not have limits as to how many shares they can issue. Shares, or units, are exchanged directly with the fund based on restrictions declared in the prospectus, which could include limiting transactions to specific periods of time for redemptions and minimum investment amounts. Shares are created to meet investor demand and removed from circulation upon redemption. If a large amount of shares is redeemed, the fund may have to sell some of its investments to cover the payout. At the end of each trading day, the units in a fund are re-priced based on the amount of shares bought and sold, and the value of the underlying assets. The price is based on the total value of the fund or the net asset value (NAV).

Publicly listed primary agriculture companies

Investment in primary agriculture can also be made through companies listed on public stock exchanges. Core investors in public companies active in the sector represent the more patient capital, and maintain greater flexibility when raising new capital or exiting than investments made through an equity fund structure.

There are around 15-20 "pure play" publicly listed farmland companies globally, of which 12 are invested in CEE and the CIS. Table 20 shows the list of major listed companies active in these regions.

Public companies are subject to various reporting and compliance requirements to ensure investor confidence in equal access to information about the company and the proper accounting for share transactions.

The LSE AIM, NASDAQ OMX First North and Warsaw exchanges are examples of exchanges

Box 7. The example of Agvance Africa

Agvance Africa is an agribusiness-focused fund of funds set up in May 2012 by the African Development Bank (AfDB, 2012). Agvance is managed by Credit Suisse Customized Fund Investment Group (CFIG) (Credit Suisse, 2013)* and is targeting total capital commitments of USD500 million. AfDB has committed the initial USD100 million with the objective of raising funds in collaboration with other donor-funded initiatives (DFIs). The fund expects to invest in 12 to 15 best-in-class private equity funds targeting portfolio companies along the agribusiness value chain and across Africa.

The strategic objective of Agvance Africa is "to increase private investment flows into the agribusiness sector in Africa to address growing food security concerns and unleash the largely unexploited potential of African agriculture and agribusiness sectors" (AfDB, 2012). The fund will design an environmental and social management system in cooperation with the World Wildlife Fund (WWF). The initiative is complementary to the African Agribusiness and Agro-industries Development Initiative (3ADI), which promote the expansion of local and international agribusiness value chains.

Notes: *Credit Suisse's Customized Fund Investment Group (CFIG) is a dedicated alternative investment manager founded in 1999. **3ADI is an initiative supported by AfDB, FAO and UNIDO.

Table 20: Major publicly listed pure-play farmland companies in CEE and the CIS

#	Company	Location of operations	Exchange listing	Date listed	Date estab.	Land bank (hectares)	Market cap (USD millions)
1	Agrogeneration	Ukraine Argentina	Paris	May 2010	2007	50 000	73.5
2	Agroton	Ukraine	Frankfurt	Nov 2010	1992	171 000	63.1
3	AlpcotAgro	the Russian Federation Ukraine	Stockholm	Oct 2009	2006	281 300	101.7
4	Black Earth Farming	the Russian Federation	Stockholm	Dec 2007	2005	318 000	286.5
5	Continental Farming Group	Ukraine Poland	London and Dublin	June 2011	1994	23 700	64.7
6	Industrial Milk Company	Ukraine	Warsaw	May 2011	2007	82 700	159.1
7	KSG Agro	Ukraine	Warsaw	May 2011	2001	92 000	53.9
8	MCB Agricole	Ukraine	Frankfurt [de-listed]	March 2008	1999	94 200	9.6
9	Mriya Agro	Ukraine	Frankfurt	July 2008	1992	295 000	689.6
10	Trigon Agri	the Russian Federation Ukraine Estonia	Stockholm	May 2007	2006	172 000	100.8
	Total					**1 579 900**	**1 602.50**

Sources: Company websites. Market capitalization as at 22 December 2012 (Bloomberg).

Note: MCB Agricole has since suspended its listing.

that have lower listing requirements, enabling companies in the early stages of development to raise capital. There is a precedent for concept IPOs under these conditions (e.g. in other long-term sectors like mining and real estate development), and these could arise in primary agriculture, although they require a potential windfall-type payback, a strong IPO market and a highly reputable management team.

Three of the recent and largest foreign-led investments in primary agriculture in the Russian Federation and Ukraine listed on the NASDAQ OMX First North alternative stock exchange. These are Alpcot Agro, Black Earth Farming and Trigon Agri.[127] The structure of shareholding in these companies is described below to illustrate the nature of investors in foreign-led listed companies in the sector.

127 Black Earth Farming completed an IPO on the NASDAQ OMX First North exchange in December 2007 (shares listed as Swedish Depository Receipts). In June 2009, the company moved its listing to the NASDAQ OMX Stockholm exchange. Alpcot Agro listed on the NASDAQ OMX First North exchange in October 2009. Trigon Agri listed on the NASDAQ OMX First North exchange in May 2007. The company moved its listing to the NASDAQ OMX Stockholm exchange in December 2010. Alpcot Agro (2013) have advised they intend to "restructure and improve the performance of the business" before they believe they can deliver value to shareholders through an upgraded listing to a larger stock exchange.

Table 21: Shareholder structure of Alpcot Agro

Name	Share (%)
1. SIX SIS AG, W8IMY (nominee)	17.54
2. Nordea Investment Funds	9.46
3. Skandinaviska Enskilda Banken S.A., W8IMY (nominee)	8.61
4. Tredje AP-fonden (AP3)	7.10
5. Pareto Securities Oy (nominee)	4.80
6. JPM Chase NA (nominee)	4.03
7. Two Eye Fund Ltd	3.75
8. Swiss Life (Lichtenstein)	3.46
9. FIM Bank Ltd	3.11
10. Clearstream Banking S.A., W8IMY (nominee)	2.60
Others	35.52
Total	**100**

Source: Alpcot Agro (2013).

Black Earth Farming was funded in early stages by the Swedish-based private investment companies Vostok Nafta and Kinnevik, which remain key long-term shareholders. The company currently has about 8 600 shareholders, the five largest of which account for 62.9 percent of the total shares (as at December 2011). Shareholders include: Investment AB Kinnevik (24.9 percent), Vostok Nafta Investment Ltd (24.8 percent), Alecta Pensionsförsakring (9.3 percent), Holberf Funds (2.2 percent) and NTC Varma Mutual Pension Inc Corp (1.7 percent). As an example, Table 21 shows the shareholder structure of Alpcot Agro (including nominees). The company has about 785 shareholders.

The shareholding in Trigon Agri follows a similar structure to the other two companies.

Based on the published lists of shareholders it is difficult to clearly classify the investor base. There are several Northern European pension funds and this appears to be a significant investor class. Many of the names listed are nominees for beneficial owners who may include many small individual accounts or larger institutions. Founding investors and management also maintain significant positions.

Public listings of CIS farmland companies have, overall, not performed well. For example, Black Earth Farming (2013), the first foreign-led large-scale farmland company to list on a public exchange, had an offering price at listing on 28 December 2007 of SEK50 (per SDR). The issue raised a total of SEK1.680 million (about USD292 million), which represented around 28 percent of the voting share capital. The share price peaked at SEK75 in February 2008 and is currently around SEK12.60, or some 25 percent of its IPO value.[128]

Another example of a listed company that offers a cautionary tale is Landkom, which raised GBP54 million (USD111 million) in an IPO on the LSE AIM market in 2007 (*Financial Times*, 2007). The state of Landkom in 2008, as highlighted by analysts, was that the company had taken on much more land than it could cope with (only 9 percent of the company's 115 000-hectare land bank was being harvested). Alpcot Agro subsequently acquired Landkom in January 2012. Based on share prices before the deal was announced, the all-share transaction valued Landkom shares at 2.69p each, a 14 percent discount to the current market value. In comparison, Landkom shares opened at 57.5p on 22 November 2007 and reached a peak of 103.0p in April 2008.

Privately owned primary agriculture companies

Also known as a closed or privately held corporation, a private corporation is a company

128 Bloomberg, 21 March 2013.

Table 22: Major shareholders in Trigon Agri

Name	Country	Share (%)
Swedbank	Estonia/Sweden	10.3
JPM Chase NA	United Kingdom	9.8
Alecta Pensionsförsäkring	Sweden	8.8
JP Morgan Clearing Corp, W9	United States	8.1
SSB CL Omnibus AC OM09 (30PCT)	United States	7.1
UB Securities AB	Finland	6.7
FIM Bank Ltd	Finland	5.6
Morgan Stanley & Co Inc, W9	United States	5.5
Nordea Bank Finland ABP	Finland	3.8
CBLDN-Pohjola Bank PLC Client A/C	Canada	3.7
SIX SIS AG, W8IMY	Sweden	3.3
NTC S/A UK Residents	United States	1.9
Other	Not disclosed	25.3
Total		**100**

Source: Trigon Agri (n.d.).

owned by a relatively small number of shareholders who may also be involved in operating the organization. Shares in such companies are not traded on the public market and are not subject to the rules and regulations of exchanges that apply to listed securities. Shareholders in private corporations enjoy limited liability and are subject to double-taxation, just like their public counterparts.

Farmland companies, like most, often start as private entities and would be expected to raise growth capital privately during the early stages of development. Due to the capital-intensive nature of agribusiness, they usually go public once they reach a critical mass and capital requirements increase.

Pre-IPO investors in such structures usually seek agreement on a strategy and schedule for achieving a liquidity event to establish benchmarks for management and anticipate the timing of a possible exit or proper market valuation.

Types of investors

Well-established private corporations are often very closely held by the founders. A minority stake may be held by outsiders, which are generally large institutions. Once a private corporation has reached profitability and maturity with a stable market position, changes in ownership are rare and it is difficult to create an opportunity to participate.

The private corporate structure is also suitable for the early growth stage, the ultimate strategy being to become publicly listed. Such companies will often have a group of founding manager-owners and will raise external debt and equity capital, as their strategy requires.

Both cases have been applied in agribusiness. Given the current economic climate, large capital requirements of farmland and high cost of debt on the CEE markets, growing companies have transitioned more towards IPOs after establishing themselves privately. As noted above, Alpcot Agro, Black Earth Farming and Trigon Agri are examples of private companies that later conducted IPOs.

Investment rationale for such investors

In general, there are advantages and disadvantages of acquiring a stake in a private company if the opportunity arises. In most cases, clear control by manager-shareholders may enable business plans to be implemented more effectively than in most corporate structures. At

the same time, it is difficult to influence decision-making from a minority position.

In instances of early-stage, high-growth strategies, investors may be able to acquire a larger stake and gain greater influence over the business.

Investment amounts and duration

Third-party investments in established, mature private corporations are generally made under special conditions in which the amounts would be large – from several hundred million dollars – and the planned duration long term.
Unless there is a documented agreement with an exit mechanism agreed among the shareholders, the planned duration of a direct private equity investment is to be viewed as long term and expected to last at least a few years, until an exit – IPO or acquisition – can be made.

Exit and return prospects

Exiting a position in any private corporation would be subject to the acquisition documentation and shareholder agreement. Usually, there will be specific conditions under which an exit can be made with restrictions regarding potential sales to third parties or other shareholders. Without an active market for such shares, there are limited means for valuing the company and this is often conducted by an external audit.

Returns from such a position can be highly dependent upon the type of relationship with the management and other shareholders, as they are capable of significantly influencing the exit and valuation process.

Expected returns on direct private investments should include a significant premium over other asset classes, which will be more liquid, predictable and manageable. The high concentration of risk within a single business entity and management and shareholder team with difficult exit alternatives requires full consideration in determining expected returns on investment.

Examples of major pure-play private corporations invested in primary agriculture

El Tejar is an example of a privately held large-scale primary agricultural producer. The company, which has interests in Argentina, Bolivia, Brazil and Uruguay, was founded as an association of producers, later progressed into a "corporate collaboration association", and is currently a private corporation.

El Tejar started as a livestock producer in Argentina and expanded into grain production during the 1990s. Private equity investments into the company have enabled El Tejar to expand its acquisition and leasing of rural properties and build a regional presence.[129] Investors include Altima One World Agriculture Fund and the Capital Group Companies, the founding families and other private investors.

Another example is Calyx Agro Limited, a privately held company incorporated in December 2007 and led by Louis Dreyfus Commodities.[130] Other shareholders include various institutions including Pine Bridge Latin American Fund II LP, TRG Management LP, AIG Brazilia, and private equity firms Worldstar Limited and Pictet Private Equity. The company's focus is acquiring, developing and selling land in Argentina, Brazil, Paraguay and Uruguay, engaging in shared cropping agreements with farming operators or landowners in each country, and managing the properties to produce a diversified range of agricultural products and commodities.[131] As a broad indicator of investment scale, Calyx Agro had reportedly raised some USD177.5 million by January 2012, and was at that stage seeking a further USD150-250 million (the same source noted that the company believed its private company structure offered greater flexibility in managing disposing of their portfolio of farmland assets compared to private equity funds which were compelled to seek liquidity to match a

129 El Tejar (2013) currently controls about 1.0 million hectares.

130 Calyx Agro (n.d.) owns and leases about 100 000 hectares of agricultural land.

131 A proposed loan of USD30 million to Calyx Agro from IFC in 2011 came under criticism from NGOs. The loan was being contemplated to enable Calyx Agro "to expand its agricultural and land activities". IFC viewed the proposed investment as making "a contribution to rural economic development through job creation and linkages with SMEs (agricultural contractors) in rural areas." Furthermore, the investment was expected "to generate a range of social and economic benefits, including economic growth and higher productivity of the farming sector, which includes: (i) Better use of the land; (ii) Transfer of Sustainable Best Practices; (iii) Private Sector Development; and Increased Employment." (IFC, 2011).

typical fund life cycle of 8-10 years) (Highquest Partners, 2012).

In the Russian Federation, RZ Agro is a private company owned by a group of international investors and led by Sierantz Group (Louis Dreyfus family). The company controls 90 000 hectares of farmland in Southern the Russian Federation.[132] Ukrlandfarming is an example of a locally controlled large-scale farmland company that has remained private so far. The company controls the largest agricultural land bank in Ukraine (over 532 000 hectares).[133]

Real estate investment trusts

REITs have become popular investment vehicles for gaining exposure to real estate in developed markets where there is appropriate legislation. REITs are entities that own income-producing real estate or real estate-related assets. They are supported in developed markets like the United States, with sophisticated tax regulations that offer attractive shareholder treatment. A qualifying REIT is permitted to deduct dividends paid to its shareholders from its corporate taxable income. As a result, most REITs remit at least 100 percent of their taxable income to shareholders and therefore owe no corporate tax. Like other businesses, but unlike partnerships, REITs cannot pass any tax losses to investors.

As regards farmland and agriculture, REITs have gained some traction in relation to timberland, and REIT structures are common in farmland investments. For the latter, while value appreciation enhances the structure's attractiveness, the lack of widespread interest from operators in fixed leases may hinder widespread growth in popularity.

REITs are distinguished from other real estate companies in that they must acquire and develop real estate primarily to operate as part of their own investment portfolios, as opposed to reselling the properties after they have been developed.

REITs enable individual investors to earn a share of the income from real estate without actually having to actually buy it. They offer potentially distinct advantages for investors: portfolio diversification, strong and reliable dividends, liquidity, solid long-term performance and transparency. Farmland REITs are common in the United States.

Many REITs are registered and publicly traded on a stock exchange. In addition, there are REITs that are not publicly traded. Examples of farmland REITs in the United States include Gladstone Land Corporation, which recently listed on NASDAQ Global Markets (Seeking Alpha, 2012). Gladstone intends to elect and qualify to be taxed as a REIT for US federal income tax purposes (SEC, 2012).[134]

For non-publicly traded REITs, redemption programmes for shares vary by company and are typically very limited. Investors may have to wait to receive a return on their capital until the company decides to engage in a transaction such as a public listing or asset sale. Such an event may take place more than 10 years after an investment is made.

REIT structures are now accepted in 35-40 countries worldwide, with numerous actively and passively managed domestic funds (both open and closed-end) established. Investors can now choose similar securitized options in Asia, Europe and North America, where opportunities are available in developed and emerging markets. Among the developing countries of CEE, only Bulgaria, Hungary and Lithuania have taken such a step (PWC, 2011).

Bulgaria is the only country in CEE and the CIS with REITs investing in farmland and primary agricultural production (see further details in the country analysis on Bulgaria). IFC is invested in Advance Terrafund REIT, which is listed on the Bulgarian Stock Exchange. IFC views this investment as supporting "the expansion of an innovative asset class that will have significant benefits by providing a private sector solution to the urgent need for consolidation of agricultural land in Bulgaria and further support

132 RZ Agro (2013) recently merged with the farming interests of Sistema Group and in the process doubled its size.

133 The controlling shareholder of Ukrlandfarming (2011) owns 77.49 percent of Avangardco PLC (2010), the leading producer of eggs in Ukraine.

134 This SEC S11 registration for Gladstone Land Corporation provides a description of the IPO.

the development of the real estate and farming markets". Furthermore, IFC notes "farmland consolidation is expected to create opportunities for investment and growth of efficient, modern farming companies, which, in turn are key to a competitive Bulgarian agriculture." (IFC, 2013; Karoll, 2012).
Examples of farmland REITs in the United States include Gladstone Land Corporation, which recently listed on NASDAQ Global Markets (Seeking Alpha, 2012). Gladstone intends to elect and qualify to be taxed as a REIT for US federal income tax purposes (SEC, 2012).

Fund of funds

Funds of funds are specialized institutional investment firms that act very much like private equity firms. The exception is that whereas the latter invest in a diversified portfolio of operating companies, the former invest in private equity funds, or potentially other types of funds, such as hedge funds.

Targeted funds of funds have evolved to focus on specific sectors and geographic regions. Those that target agribusiness funds are emerging as the quantity and quality of funds in the sector increases. An example is Agvance Africa, which is a fund of funds recently created to invest in African agribusiness-focused private equity funds.[135]

North Bridge Agri Invest AS is a small fund of funds currently invested in underlying funds investing in agricultural land in Romania and France (North Bridge, 2013a). The fund's investment strategy is "to build up a portfolio of investments in investment companies and/or investment funds that are under active management and whose exposure is focused in the agricultural sector." The fund will also "give emphasis to identifying specific value drivers, for example selected geographical markets and/or good management teams with documented experience in addition to the global drivers of agricultural property values." (North Bridge, 2013b)[136]

Adveq, a Swiss-based private equity fund of funds has developed an investment platform ("Adveq Real Assets"), which endeavours to "bring (together) the investment focus and requirements of the investor universe on one hand, and the rapport, deal access and deal flow in the GPs universe on the other".[137] Adveq's allocation to agriculture is concentrated in Adveq Real Assets Harvested Resources, LP, which is structured as a closed-end fund (USD300 million). The focus is on farmland investments, "owning and (primarily) operating the farmland, or leasing in select situations". The investment focus is farmland assets in Central and Eastern Europe, Latin America, North America and Oceania (Adveq, 2013).

Perceived benefits and risks of different structures

The benefits and risks associated with investing in a particular legal structure are generally more concentrated on: (i) the management of the structure itself, and (ii) the term or liquidity of the investment. There are no significant features peculiar to investments in primary agriculture.

- In funds, strong management is critical since it identifies and gains access to assets, negotiates acquisition terms and manages the investments. The team will ensure proper diversification of the portfolio of investments to mitigate or isolate other risks according to the agreed strategy.
- A key benefit of funds over other structures is the exposure provided to a diverse range of assets that may not be otherwise affordable.
- Liquidity is the main impediment to closed-end funds. Capital cannot be divested until the fund exits its portfolio. Market risk will affect the timing of such divestitures, as fund managers seek to maximize value.
- Limited access to information represents another risk for many funds. Due to the

135 Agvance Africa, set up by AfDB, is the first fund of funds focused on agribusiness in Africa. The strategic objective of Agvance Africa is to increase private investment flows into the agribusiness sector to address food security and unleash the largely unexploited potential of the African agriculture and agribusiness sectors. Agvance is managed by Credit Suisse Customized Fund Investment Group (CFIG) and is targeting total capital commitments of USD500 million. The fund is expected to invest in 12 to 15 best-in-class private equity funds targeting portfolio companies along the agribusiness value chain and across the continent (AfDB, 2013).

136 North Bridge Agri Invest AS has two portfolio investments: North Bridge AgRoInvest, which owns agricultural land in Romania and North Bridge AgriFrance, which owns agricultural land in France (North Bridge, 2013b).

137 Adveq is reportedly in talks with three European pension funds, a private family and a Korean asset manager to buy farmland, in which it will act as the originator and lead investor (Reuters, 2013).

private nature of the fund and portfolio assets, the fund managers may be the only source of related information.

- When evaluating the benefits and risks of publicly listed companies or funds as an investment structure, the first consideration should be the exchange on which they are listed and the level of reporting and other requirements imposed.
- All listed shares should be more liquid than those that are not listed, all else being equal. Some shares will be less liquid than others and exchanges can vary in terms of the number of willing buyers at certain times. However, investors should be able to exit positions in public equity at a price if and when they wish to.
- For all public companies, there will be a higher degree of information available. Larger exchanges require a significant degree of disclosure, which can be burdensome for small companies that are still developing. This explains the emergence of exchanges with less onerous requirements.
- Public markets can be subject to rapid shifts in overall sentiment that can affect share prices for no apparent reason related directly to companies. Usually, such shifts are reversed over time if there is no broad change in the environment, but sometimes the market can impose a permanent change in valuation methods or assumptions.
- With more participants in the market and such a large volume of information, public share prices can be subject to greater volatility than other investment structures.
- Counterparty risk should be reduced by investing in shares on a proper exchange, where brokers who arrange the transactions are certified and follow the strict guidelines of the exchange.
- The benefits and risks associated with investing directly in private companies are more concentrated on the management of the company itself and the ability to implement a strategy that culminates in a successful exit.
- Management of the company is critical and should be the determining benefit to the investment, but must be viewed as a risk to be mitigated in advance with extensive research and due diligence. Investors representing a significant stake in a company can initiate the replacement of underperforming top managers.
- Investments in private companies are subject to agreements with co-owners that often include major restrictions on the ability of a single shareholder to divest without the cooperation of other owners. Such investments should be viewed as long-term and illiquid until a liquidity event, often an IPO or merger, takes place.
- As with funds, due to the private nature of the structure, company management, annual reports and audits may represent the only source of related information.

Chapter 4 - Returns and financial performance

Stock market returns

In view of the relatively small number of equity funds invested in primary agriculture in CEE and the CIS, their relatively recent existence (no funds have reached mandated tenures), and the lack of data available publicly on the performance of these funds, an analysis was conducted of seven publicly listed farmland companies invested predominantly in the Russian Federation and Ukraine. The objective of this analysis was to provide additional and comparable insights into key operational and financial drivers affecting the performance of the overall asset class.

The sample companies

The companies selected for the sample control a land bank of about 1.1 million hectares and have a market capitalization (at December 2012) of about USD850 million.[138] Operations are located predominantly in the Russian Federation and Ukraine, and to a very small extent in Poland. These seven companies and three others are grouped within the CIS Farmland Index managed by Foyil Securities.[139]

The companies listed in the table below were also considered, but not selected for analysis.

Share price performance and valuations analysis

Any conclusions need to be taken with care given the relatively small sample size and short track record of performance monitored. The validity of the CIS Farmland Index, in particular during its early years, must also be considered within this limiting context.[140] The analysis is additionally impacted by the volatile macro-economic context of much of the period under review, as well as distortions resulting from extreme drought conditions experienced in 2010, in particular in the Russian Federation. However, and in spite of these limitations, the analysis provided useful insights.

- During the five-year period of review, the CIS Farmland Index has underperformed relative to global agricultural indices.
- Underperformance is due to the weak performance of the larger companies in particular. There may also be some market discount applied to the asset class and country risk, though neither of these impacts is considered highly significant in the analysis.[141] Furthermore, liquidity of the shares (or lack thereof) has had little or no impact on performance, and other, mostly operational issues significantly outweigh this factor.
- During 2012, the CIS Farmland Index performed closer to the other indices (though with greater volatility) demonstrating that this group can match the results of the more mature indices.
- Equity capital raised prior to the global financial crisis in 2008 was done at extraordinary valuations with the valuation basis being the scale and anticipated earnings potential of the land bank (rather than operating profitability). However, the basis of valuing farmland companies changed

138 This total land bank represents about 0.7 percent of the total arable land in Russia and Ukraine.

139 There is a universe of 11 publicly listed companies invested in Russia and Ukraine whose core business is primary agriculture (predominantly crop farming) and can therefore be considered as "pure play" farmland companies. These include the 10 companies mentioned in the tables in this study plus Sintal Agriculture (2013), which is invested in Ukraine and listed in Vienna.

140 The number of companies in the index increased from one company in 2008 to 10 companies in 2012.

141 A recent corporate credit rating assigned by Standard & Poor to Ukrlandfarming highlights some of the sector, country and governance risk issues impacting market perceptions: "We base our view of Ukrlandfarming's weak business risk on the company's exposure to supply and demand of commodity-type products within the volatile agribusiness industry. In addition, the company generates its revenues and earnings within Ukraine, where all its operating assets are located. We consider the company's exposure to Ukraine as a key risk factor. We view Ukrlandfarming's corporate governance as "weak," owing to the dominance of its owner" (and) "the lack of independence of the board of directors, and material related-party transactions." The report further notes that, "A revision of the outlook to stable, all else being equal, would depend on pronounced improvement in UkrLandFarming's corporate governance structure, discontinuation of related-party transactions, and moderation of its expansion strategy." (CBonds, 2013).

Table 23: Sample companies included in the analysis

#	Company	Location of operations	Exchange listing	Date listed	Date estab.	Land bank (hectares)	Market cap (USD millions)
1	Agrogeneration	Ukraine Argentina	Paris	May 2010	2007	50 000	73.5
2	Agroton	Ukraine	Frankfurt	Nov 2010	1992	171 000	63.1
3	Alpcot Agro	the Russian Federation Ukraine	Stockholm	Oct 2009	2006	281 300	101.7
4	Black Earth Farming	the Russian Federation	Stockholm	Dec 2007	2005	318 000	286.5
5	Continental Farming Group	Ukraine Poland	London and Dublin	June 2011	1994	23 700	64.7
6	Industrial Milk Company	Ukraine	Warsaw	May 2011	2007	82 700	159.1
7	Trigon Agri	the Russian Federation Ukraine Estonia	Stockholm	May 2007	2006	172 000	100.8
			Total			**1 098 700**	**849.4**

Note: Market capitalization as at 22 December 2012 (Bloomberg). Land banks as reported by companies in December 2012.

Box 8. Sample company description

Industrial Milk Company (IMC) is an arable crops and milk producer with a land bank of 82 700 hectares in the Chernihiv, Poltava and Sumy regions, and a top-10 cow headcount in Ukraine (3 900 heads). The company is self-sufficient in storage capacity (223 000 tonnes). Crops are a mix of mostly cereals and oilseeds with a small potato business. IMC is ranked as the top performing company in both ROIC and ROE with consistent double-digit performance during 2007–2011. Revaluation gains on biological assets also boosted performance in 2011.

Continental Farming Group (CFG) is a diversified farming operation in Poland and western Ukraine. CFG controls 2 700 hectares in Poland and 21 000 hectares in western Ukraine, and has also recently engaged in a sugar beet venture in southern Ukraine. CFG posted strong EBITDA in 2011 though modest ROIC and ROE during 2007–2011.*

Trigon Agri has farming operations in Ukraine (53 000 hectares) and southern the Russian Federation (110 000 hectares) as well as milk production in Estonia and the Russian Federation. Trigon showed reasonable EBITDA per hectare in 2011 and has only recently surpassed the break-even point on ROIC and ROE.

AgroGeneration controls 50 000 ha in the Lviv, Sumy, Ternopil and Zhytomyr regions in Ukraine. AgroGeneration has shown clear improvement in EBITDA, ROIC and ROE, from negative results at start-up. The company has recently broken even upon increasing scale and improving operations and cost controls. AgroGeneration started with 15 000 hectares in 2007 and grew to 50 000 hectares in 2010. Improved profitability has also come from improving operating costs and substantially reducing SG&A costs.

Agroton controls 151 000 hectares in the Kharkiv and Lugansk regions. Crops focus on sunflower (29 percent of cultivated land) and winter wheat (32 percent). The company also manages poultry and dairy operations. Agroton reported positive but unimpressive EBITDA per hectare in 2011 and inconsistent ROIC and ROE over the 2007–2011 period. In 2011, the company received a qualified audit because of lack of adequate documentary evidence covering USD66 million in sales transactions (about two-thirds of 2011 sales).

Alpcot Agro has operations in the Russian Federation and Ukraine (following acquisition of Landkom in January 2012), and controls 161 000 hectares of land in the Russian Federation and 93 400 hectares in Ukraine. About 130 000 hectares were cultivated in 2011. Alpcot improved from negative EBITDA during the period 2007–2010, to break even in 2011, but has yet to show positive ROIC and ROE results.

Black Earth Farming (BEF) was the first foreign-led large-scale private equity investment in Russian primary agriculture. The company controls 318 000 hectares of farmland with about 260 000 hectares under cultivation. EBITDA per hectare, ROIC and ROE results have constantly been negative as the company struggles to establish a model for operational success on a large scale.

Source: Foyil analysis, November 2012.

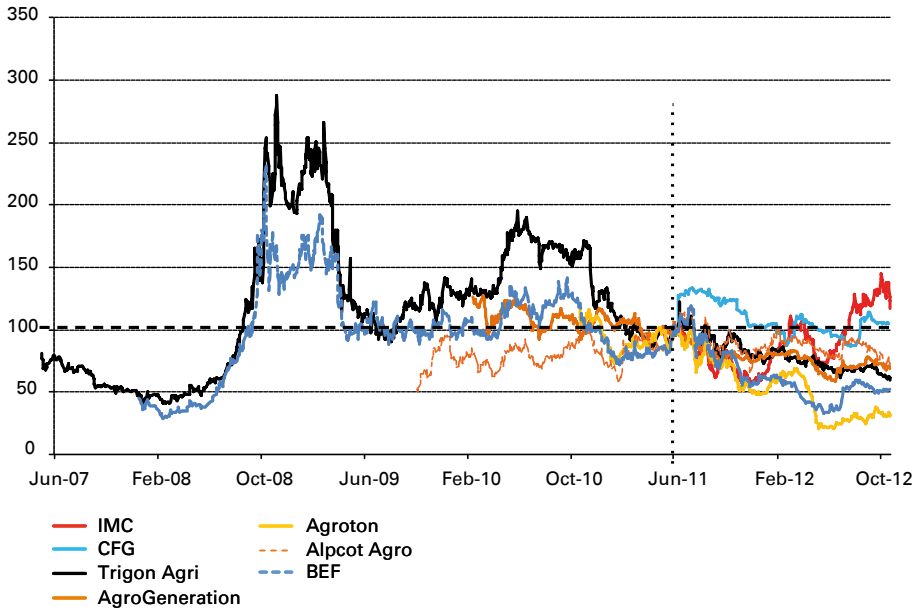
Note: *CFG receives EU subsidy payments on operations in Poland; however, analysis shows that this income does not have a material impact upon comparison of the company's performance relative to the other companies.

Table 24: Other listed companies considered, but not selected for analysis

#	Company	Location of operations	Exchange listing	Date listed	Date estab.	Land bank (hectares)	Market cap (USD millions)
1	KSG Agro	Ukraine	Warsaw	2011	2001	92 000	53.9
2	MCB Agricole	Ukraine	Frankfurt	Mar 2008	1999	94 200	9.6
3	Mriya	Ukraine	Frankfurt	July 2008	1992	295 000	689.6
			Total			**481 200**	**753.1**

Note: market capitalization as at 22 December 2012 (Bloomberg). MCB Agricole has since been de-listed. Land banks as reported by companies in December 2012.

Figure 16: Selected companies: share price performance since listing



Source: Foyil analysis from Bloomberg data.

Note: the companies are anchored at index value 100 at the date of the last IPO (June 2011 - Continental Farming Group).

following the crisis to the more traditional measures of operating profitability.

- Two of the sample companies achieved initial public offerings in 2007 during a period of market exuberance and relatively accessible debt. In spite of the economic slowdown, and the food price shocks of 2008, interest in the sector has remained strong and the rest of the companies achieved public listings by June 2011.

Figure 16 below shows the relative stock price performance of the seven companies since their respective listings. The data show that the companies whose share prices fared best are those that have pursued disciplined business models that emphasize efficiency and performance from the start through a staged expansion process, and which kept costs under control. The best performing companies are all located in Ukraine (e.g. CFG and IMC). Top-performing companies expanded from a relatively modest scale in manageable steps. Conversely, the share prices of companies that acquired large tracts of land in a short time continue to struggle (e.g. Alpcot Agro and Black Earth Farming).

The analysis of performance drivers further indicates correlations between four key factors: scale of operations, location, mode of expansion and financial performance.

- The most highly rated companies (i.e. IMC and CFG) have operations based mostly in Ukraine, where only leasing of farmland is

Table 25: Equity fundraising: primary agricultural companies, 2007–2008, prior to the global financial crisis

	Date funds raised	Type	Pre-money market cap USD millions	Net debt, USD millions	Pre-money EV, USD millions	Funds raised, USD millions	EBITDA, last 12 months, USD millions	Pre-money EV/EBITDA	Pre-money EV/ land bank USD/hectare
Trigon Agri	May 2007	IPO	33.8	-1.1	32.7	68.8	-1.7	NEG	1 200
Dakor West	May 2007	IPO	84.0	0.0	84.0	21.0	15.4	5.45	450
Landkom	Nov 2007	IPO	88.9	-87.6	1.2	108.1	-1.4	NEG	0
Land West	Dec 2007	IPO	172.0	0.0	172.0	43.0	1.5	113.2	1 000
BEF	Dec 2007	IPO	687.7	0.0	687.7	268.8	0.0	NEG	2 400
BEF	Jan 2008	SPO	956.5	-0.2	956.3	39.0	-1.0	NEG	3 300
MCB Agricole	Mar 2008	PP	239.1	+14.6	253.8	58.4	3.6	71.0	3 600
Mriya	July 2008	PP	450.5	+14.2	464.7	90.1	16.0	29.1	5 100
Sintal	Aug 2008	PP	230.0	+6.3	236.3	34.5	3.5	67.0	2 400
Totals			**2974**		**2922**	**731.7**			
							Average (*positive values only*)	57.15	2 150
							Range: lowest	5.5	0
							Range: highest	113.2	5 100

Source: Foyil analysis, November 2012. Total funds raised were USD731.7 million. Three of five IPOs achieved on negative earnings.

Note: IPO: Initial Public Offering; SPO: Secondary Public Offering; PP: Private Placement.

possible, and have expanded operations in manageable steps from a relatively modest starting scale.

- Middle-performing companies control between 50 000 and 200 000 hectares of land. Two of these, Agrogeneration and Agroton, are based in Ukraine and the third and strongest, Trigon Agri, is diversified geographically between the Russian Federation and Ukraine.
- The two companies that have shown the weakest performance to date control the largest land banks, each with over 250 000 hectares. During the period of analysis, these companies operated mostly (Alpcot Agro) or entirely (Black Earth Farming) in the Russian Federation.

The first public listings of farmland companies invested in the CIS were executed in 2007, prior to the global financial crisis that impacted the market. During 2007–2008 these companies were able to attract strong demand from investors eager to gain exposure to large-scale agricultural assets.[142] As these companies were in the early development stage, few were reporting profits that would have enabled earnings-based valuations. Consequently, valuations were based on assessments of the land bank.

Table 25 describes data relative to a sample of public equity transactions during 2007–2008 and shows that equity capital was raised at extraordinary valuations relative to EBITDA (an average of over 57 times EBITDA), while several companies were operating at a loss. Many of the companies had acquired or were promoting plans to acquire large land banks for future operations. Between December 2007 and July 2008, there is a clear trend of rising valuations per hectare of land (from USD1 000 to USD5 100 per hectare) with very high EBITDA multiples. For example, Land West was valued at 113.2X EBITDA and Black Earth Farming, the largest IPO (and, at that

142 As an example, Black Earth Farming was several times oversubscribed when the company listed on 19 December 2007. Market capitalization at IPO was USD911 million (or USD3 000 per hectare of land bank). Current market capitalization (December 2012) is USD286 million (or USD about USD950 per hectare) (Bloomberg, 2012; Nomura Equity Capital Markets, presentation, December 2007).

Table 26: Equity fundraising: primary agricultural companies, 2009–2011, after the global financial crisis

	Date funds raised	Type	Pre-money market cap, USD millions	Net debt, USD millions	Pre-money EV, USD millions	Funds raised, USD millions	EBITDA last 12 months, USD millions	Pre-money EV/EBITDA	Pre-money EV/ land bank, USD/hectare
Landkom	Oct 2009	SPO	9.9	0.7	10.6	9.8	-11.1	NEG	100
Agroton	Nov 2009	PP	168.0	56.7	224.7	42.0	18.6	12.1	1 500
Alpcot	Jan 2010	PP	49	10.2	50.2	13.6	-19.4	NEG	328
AgroGeneration	Jan 2010	IPO	54.5	5.4	59.9	18.3	-4.6	NEG	NA
AgroGeneration	Jun 2010	SPO	85.3	7.6	92.9	16.3	5.4	17.3	NA
Agroton	Oct 2010	IPO	151.5	39.8	151.5	53.7	19.5	9.8	1 300
IMC	Apr 2011	IPO	98.7	10.2	98.7	29.8	18.0	6.0	2 900
KSG	Apr 2011	IPO	80.4	7.8	80.4	39.6	13.0	6.8	2 600
CFGP	Jun 2011	IPO	37.4	22.2	37.4	24.0	8.4	7.1	2 500
Agrogeneration	Jul 2011	SPO	87.2	7.6	87.2	19.5	3.1	31.0	1 800
Alpcot	Dec 2011	SPO	49.7	14.5	64.2	38.2	-20.2	NEG	366
Totals			**727**		**1009**	**348**			
							Average (positive values only)	12.9	1.43
							Range: lowest	6.0	0.1
							Range: highest	31.0	2.9

Source: Foyil analysis, November 2012. Total funds raised were USD304.8 million.

Note: IPO: Initial Public Offering; SPO: Secondary Public Offering; PP: Private Placement.

time, the largest European Agricultural IPO ever) went public with negative EBITDA).

The market changed dramatically in late 2008 at the start of the global financial crisis, which led to declining commodity prices and a global liquidity freeze, and saw continuing poor operating performance by most CIS farmland companies.

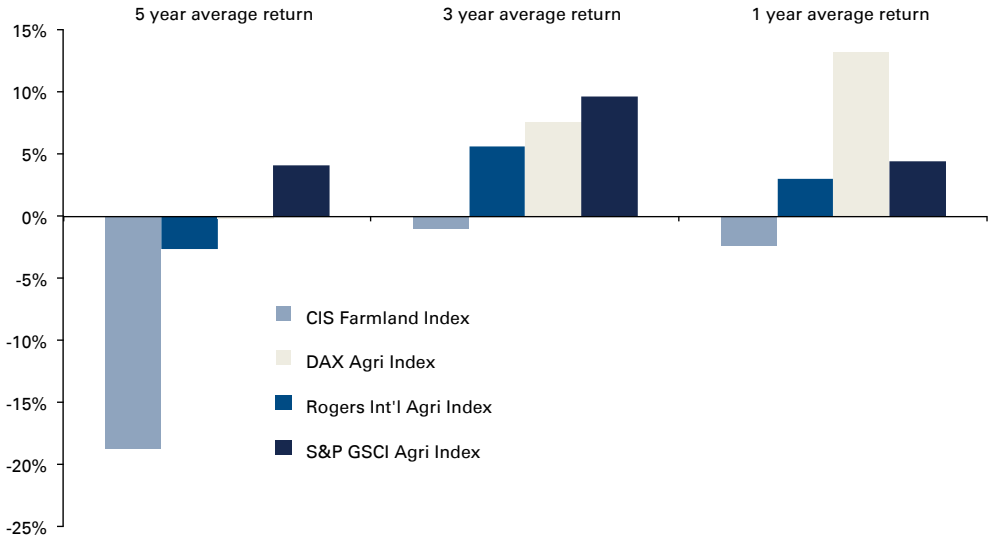
When fund-raising activity resumed in late 2009, valuations were determined in a more sober (and traditional) manner with the focus on operating profitability and not on land holdings.

It is instructive that three of the five IPOs that succeeded during the earlier period were achieved on prior-year negative earnings performance. In contrast, during the period 2009–2011, only one company (AgroGeneration) completed an IPO (USD18.3 million raised) while reporting negative EBITDA during the previous 12 months.

During this latter phase, the IPOs completed were at multiples of less than 10 times the value of trailing 12-month EBITDA. This is a substantial change compared to the first phase of IPOs. Valuations in these second phase IPOs show comparatively inconsistent results when evaluated on a land bank basis (USD1 300 to USD2 900 per hectare), as compared to a more consistent range of EBITDA multiples (6.0 – 9.8X). These data are also consistent with the market trend of focusing on operating profitability, rather than land bank.

Private placement and secondary public offering activity was generally consistent with the shift towards profit-based valuations, but less so. These transactions would at least partially reflect hesitancy by existing investors to accept much lower values than achieved on initial listing.

Figure 17: Comparison: CIS Farmland Index vs. global indices (five-year, three-year, one-year)



Source: Foyil analysis, November 2012.

Comparison with global benchmarks

A comparison was made between the performance of the CIS Farmland Index[143] and other commonly used global agricultural sector indices (i.e. Rogers International Commodities Index – Agriculture Sub-Index (RICI-A),[144] DAXglobal Agribusiness Index[145] and the S&P GSCI Agriculture & Livestock Index).[146]

The results of the analysis demonstrate that CIS Farmland Index lags behind the benchmark indices (Figure 17). As noted earlier, this can be ascribed to the generally inconsistent operational performance of the companies in the index.

However, comparison of changes in the value of the CIS Farmland Index during 2012 show relatively high volatility and convergence with global benchmark indices during the third quarter before dropping below benchmarks at the end of the year (Figure 18). This indicates that the CIS Farmland Index can match the global benchmarks.

Comparison with local, vertically integrated firms and global agro peers

Table 27 provides a further comparison of CIS farmland companies to local vertically integrated peers and global agro peers (farmland companies). This analysis indicates that, overall, investors currently discount the CIS farmland companies substantially against local vertically integrated peers and global agro peers.

For example, the median 2012 estimated EV/EBITDA multiple for CIS farmland companies (5.3X for 2012) is less than 50 percent of their global agro peers (11.8X). Similar differences are shown when comparing price/earnings and EV/land data. The two primary reasons for this disparity may be lack of faith in future earnings potential (and thus, in management overall), and/or a discount being applied by investors to the market in general. Clearly, it is possible to improve management over time. The market discount factor should decline as and when the asset class matures and proves its performance capabilities.

143 The CIS Farmland Index tracks the performance of 11 farmland companies based in the CIS, mostly Russia and Ukraine. These companies are Agrogeneration, Agroton, Alpcot Agro, Black Earth Farming, Continental Farming Group, IMC, KSG Agro, MCB Agricole, Mriya, Sintal Agriculture and Trigon Agri.

144 The RICI-A Index is based on 22 commodity futures contracts. Individual components qualify for inclusion in the index on the basis of liquidity and weighting in their respective underlying worldwide consumption.

145 The DAXglobal Agribusiness Index tracks the performance of 40 of the world's biggest and most traded agricultural companies. The index relies upon a sector-based approach, comprising: Agriproduct Operations, Livestock Operations, Agrichemicals, Agricultural Equipment and Ethanol/Biodiesel.

146 The S&P GSCI Agriculture & Livestock Index provides investors with a benchmark for investment performance in agricultural commodity markets. The index includes eight soft commodities and three livestock components, and comprises the principal physical commodities that are the subject of active, liquid futures markets.

Figure 18: Comparison: CIS Farmland Index vs. global indices (2012 only)

Source: Foyil analysis, November 2012.

Table 27: CIS farmland companies compared to local vertically integrated peers and global agro peers

Company	MCap, USD millions	Price/ book	Price/earnings			EV/EBITDA			EV/land 2012
			2011	2012 est.	2013 forecast	2011	2012 est.	2013 forecast	
CIS agro peers									
Black Earth Farming	287	1.6	NMF	NMF	20.6	NMF	14.8	8.4	1.1
IMC	159	1.2	9.2	6.1	3.9	7.2	4.3	3.1	2.1
AlpcotAgro	102	0.5	NMF	12.4	3.5	NMF	3.9	2.1	0.4
Trigon Agri	101	0.6	NMF	NMF	3.9	8.8	8.0	3.5	0.8
Agroton	63	0.4	NMF	2.4	4.4	9.5	2.6	2.6	0.6
CFG	65	0.7	15.1	9.9	NA	7.9	6.4	5.1	2.6
AgroGeneration	74	1.4	22.5	NA	NA	14.8	NA	NA	1.9
CIS agro peers, *median*		**0.7**	**15.1**	**8.0**	**3.9**	**8.8**	**5.3**	**3.3**	**1.1**
Global agro peers									
AdecoAgro	1 024	1.0	18.3	19.5	13.1	7.8	8.4	5.4	4.4
SLC Agricola	940	1.0	19.2	25.2	16.9	6.9	10.7	9.9	3.5
Vanguarda	689	1.1	NA	NA	NA	87.7	NA	NA	3.0
PrimeAg Australia	316	0.7	61.3	37.8	21.9	27.8	16.7	9.0	NA
BrasilAgro	277	1.0	NA	23.5	35.2	121.1	13.0	14.8	1.7
Global agro peers, *median*		**1.0**	**19.2**	**24.3**	**19.4**	**27.8**	**11.8**	**9.4**	**3.2**
CIS vertically integrated agro peers									
Kernel Holding	2 264	1.8	10.0	10.4	9.2	9.8	8.1	7.0	13.3
MHP	1 632	1.5	6.3	4.6	3.9	5.6	4.4	3.8	8.5
Astarta Holding	447	1.0	3.7	6.5	4.3	3.3	4.5	3.5	2.3
Razgulay	84	0.2	NA	NA	NA	11.6	5.8	5.4	1.8
CIS vertically integrated agro peers, *median*		**1.2**	**6.3**	**6.5**	**4.3**	**7.7**	**5.1**	**4.6**	**5.4**

Source: Foyil analysis, November 2012.

Note: market capitalization CIS farmland companies as at 22 December 2012; other companies November 2012.

Table 28: Financial performance showing company ranking

	Rank	EBITDA per ha, 2011	ROIC 2011	Average ROIC 2007–2011	ROE 2011	Average ROE 2007–2011	Share price performance since IPO	Total score
IMC	#1	USD422	24%	28%	16%	21%	+9%	7
Rank		2	1	1	1	1	1	
CFG	#2	USD506	7%	3%	5%	2%	+4%	13
Rank		1	2	3	3	2	2	
Trigon	#3	USD169	5%	-2%	1%	-3%	-50%	21
Rank		3	3	4	4	3	4	
AgroGen	#4	USD146	4%	-7%	6%	-59%	-10%	24
Rank		4	4	5	2	6	3	
Agroton	#5	USD98	4%	16%	0%	-13%	-65%	27
Rank		5	4	2	5	5	6	
Alpcot	#6	-USD2	-8%	-10%	-9%	-11%	-63%	32
Rank		6	5	6	6	4	5	
BEF	#7	-USD40	-8%	-7%	-21%	-13%	-76%	36
Rank		7	5	5	7	5	7	

Source: Foyil analysis, November 2012.

Note: share price as at 19 November 2012. ROIC is calculated as taxed EBIT to invested capital (book value of equity plus interest-bearing debt) as at year-end (or average). ROE is calculated as net income to book value of equity.

Table 29: Key financial performance indicators and share price performance

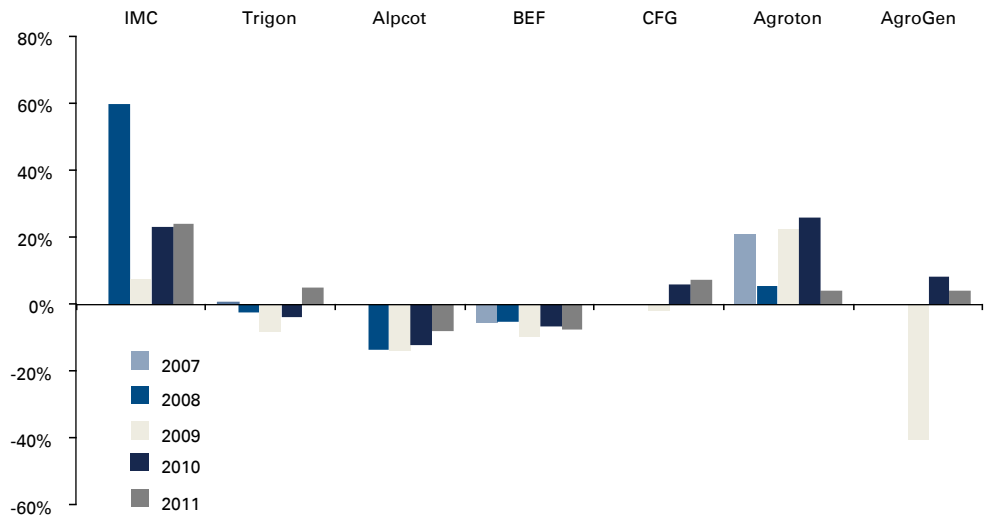
	IMC	CFG	Trigon	AgroGen	Agroton	Alpcot	BEF	Average
Land bank (hectares)	82 700	23 700	172 000	50 000	171 000	281 300	318 000	156 957
Share of land bank harvested (2011)	72%	66%	50%	90%	61%	44%	73%	65%
Average crop yield 2011 (tonnes/ha)	4.1	3.5	3.0	3.5	2.9	3.1	2.2	3.2
Revenue per ha (2011, USD)	1 480	1 855	715	980	607	589	335	937
Net income per ha (2011, USD)	406	233	19	69	3	-164	-181	55
Stock price performance – 1Y	77%	-11%	-10%	6%	-45%	-3%	-26%	-2%
Stock price performance – 3Y	NA	NA	-10%	NA	NA	NA	-46%	-28%
Stock price since IPO	9%	4%	-50%	-10%	-65%	-63%	-76%	-36%

Source: Foyil analysis, November 2012.

When comparing with local vertically integrated peers in terms of EV/EBITDA multiples, the analysis shows that farmland companies are valued higher at 5.3X (versus 5.1X for vertically integrated peers) in relation to 2012 EBITDA, but lower versus 2013 EBITDA projections (3.3X versus 4.6X respectively).

These year-on-year differences, also shown in P/E multiples, are related to more aggressive improvements in profitability forecasted for the farmland group than for the more mature industrial peers. EV/land is much higher for the vertically integrated group as land-based activities play a lesser role in their overall operations.

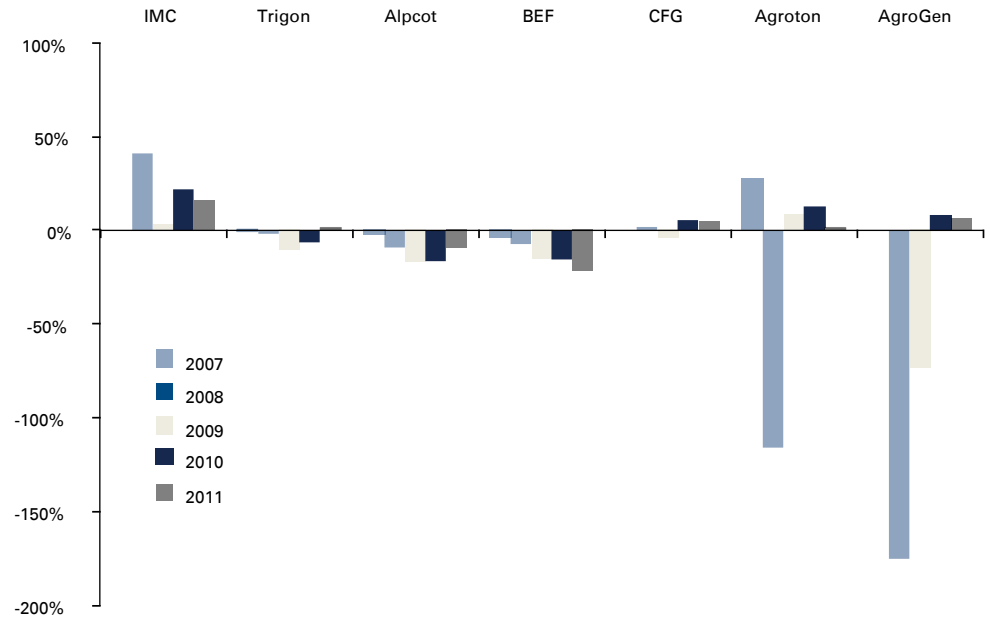
Figure 19: Return on invested capital (ROIC) – five-year dynamics (2007–2011)



Source: Foyil analysis, November 2012.

Note: IMC's ROIC in 2008 is distorted by a "one time exchange of property certificates".

Figure 20: Return on equity (ROE) – five-year dynamics (2007–2011)



Source: Foyil analysis, November 2012.

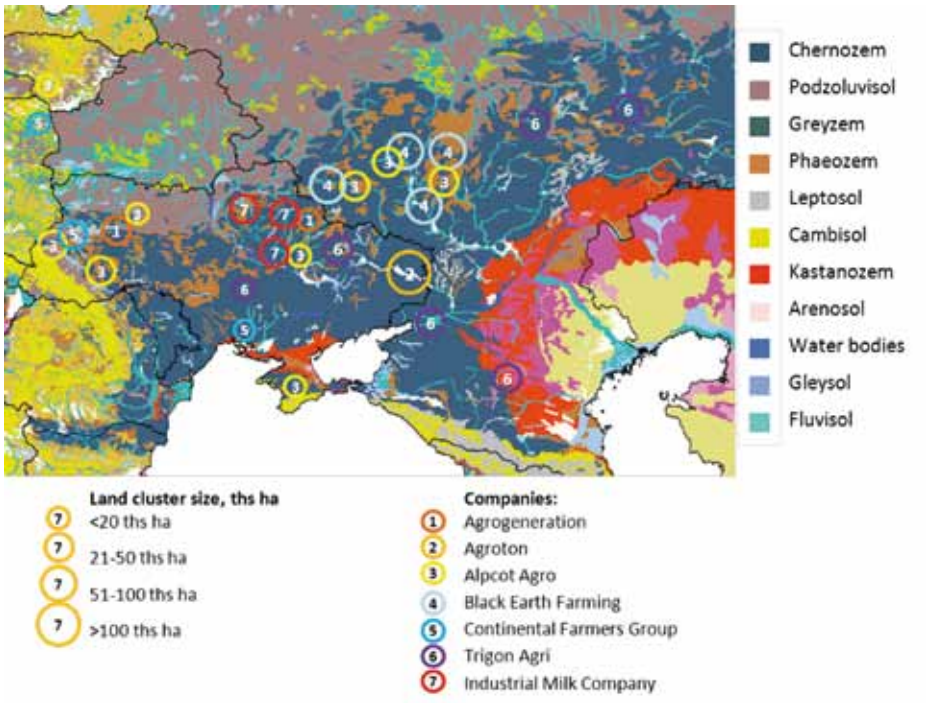
Financial performance and key drivers

Financial ratios

Table 28 compares financial performance among the sample companies. The basis of evaluation is a scored matrix of four measures: EBITDA per hectare, ROIC, ROE and share price performance (there is a more detailed analysis of performance drivers in a following section). IMC is the best performing company when evaluated on this basis.

Figures 19 and 20 show the Return on Invested Capital (ROIC) and Return on Equity (ROE) over the five-year period, 2007–2011 (data are shown only for the period that the particular company was listed). Again, IMC stands out in these comparisons.

Figure 21: Soil and company location map



Sources: Soil map from FAO; location data from individual company data, from Foyil Analysis, November 2012.

Key financial performance drivers

The sample companies have also been analysed within the framework of the following five key performance drivers: (i) location, (ii) infrastructure, (iii) business model, (iv) governance, and (v) financial management. Table 29 shows key financial performance indicators (KPIs) and share price performance, which are referred to in the analysis.

Location

Location impacts crop yields and profitability through climatic and soil characteristics. Location also affects costs and profitability through proximity to markets and logistics (storage, rail, other transit and ports), and through the costs and benefits arising from the concentration of clusters of land holdings in terms of both cluster sizes and geographical dispersion of farms. Optimal cluster size varies depending upon location and layout, but appears to be within a range of 30 000 to 50 000 hectares in, for example, the Russian Federation and Ukraine. Cluster size may also be dependent upon the geographic concentration of farms and storage and logistics facilities, and the nature and intensity of agricultural activities.

All seven companies are located within the Black Earth Belt of Ukraine and the Russian Federation (Figure 21). This is a region famous for its good soil, known as *Chernozem* (black earth).

An interesting feature illustrated in Table 30 is that Ukraine historically outperforms the Russian Federation in selected average crop yields. Three of the four companies, which are located predominantly or entirely in Ukraine (IMC, CFG, AgroGeneration), outperformed the average crop yield achieved by the group of companies. These numbers should, however, be treated with caution as the crop mix may increase (e.g. more corn) or reduce the numerical crop yield average (more sunflower).[147]

While analysis does not show any impact on company performance arising from the geographic diversification of farms, diversification of climatic and other location-specific risks has driven farm acquisitions and land bank restructuring in, for example, AgroGeneration, Alpcot Agro, Continental Farmers Group, IMC and Trigon Agri.

147 Agroton is the exception, however, this company cultivates a high percentage of sunflowers, which will pull down its overall (nominal) average tonnes per hectare.

Table 30: Selected crop yields: comparison between Ukraine and the Russian Federation (2007–2011)

Crop	Ukraine, tonnes per ha, 2007–2011	the Russian Federation, tonnes per ha, 2007–2011	Differential Ukraine vs. the Russian Federation
Winter wheat	3.1	2.9	+6.5%
Corn	4.9	3.5	+28.6%
Sunflower	1.5	1.2	+20.0%
Sugar beet	32.2	32.2	0%

Source: Ukraine State Statistics Service (2012); Rosstat (from Foyil analysis).

Trigon Agri's recent land-swap transaction enables the company to move production to a more rainfall-reliable location, and one that also enables the use of irrigation.[148] Alpcot Agro's recent acquisition of Landkom in January 2012 enables the company to position itself across a west-east range of climatic and soil conditions between the Russian Federation and Ukraine.

Agroton and Black Earth Farming have their farmland holdings within largely single geographic blocs. This may facilitate operational management but also concentrates exposure to climatic risk.

Infrastructure

Market price volatility is a key risk and is subject to seasonal variations. Investments in storage can mitigate this risk by enabling greater flexibility in timing sales. This impacts both capital and operating costs, and potentially profitability. Investment in storage and drying capacity can drive performance by enabling greater control over sales and creating the opportunity to handle and trade in products from other producers. The returns achievable on acquiring and/or installing storage and drying facilities are not evident from the analysis and would need a more detailed evaluation. These returns would also depend upon location, plant utilization and other key operating parameters.

Another key issue (though not within direct control of producers) is the grains export infrastructure in Kazakhstan, the Russian Federation and Ukraine. There are investments being implemented regionally, which will in future upgrade export capacity to adequate levels.

As illustrated in Figure 22, five of the seven selected companies have storage capacity that covers at least 80 percent of their current annual harvest potential.

Business model

Within the general analysis, and in particular within the context of the sample companies, there are several issues to be taken into account:

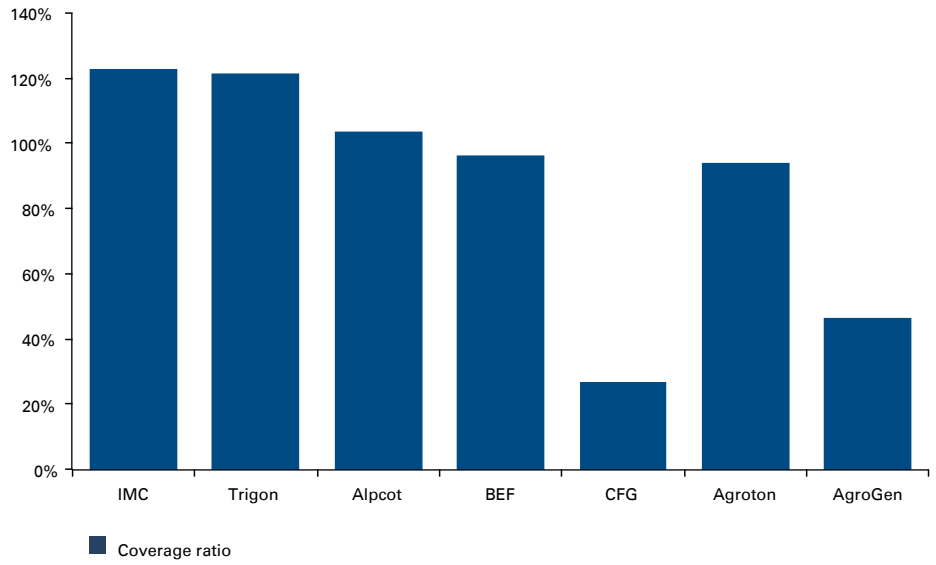
- Most of the best performing companies among the sample companies (Agroton, AgroGeneration, CFG and IMC)[149] cultivate a high proportion of their respective total land banks (from 70 percent to 100 percent of total land bank; see Table 31). In Ukraine, land rental is typically the largest component of indirect costs.
- As noted previously, a factor that distinguishes high performers (i.e. AgroGeneration, CFG and IMC) is a business model that started on a manageable scale (generally less than 30 000 hectares) and achieved operational efficiency in a single cluster before ramping up operations to a larger scale.[150]

148 In November 2012, Trigon Agri announced that the company had acquired a production cluster of 71 000 hectares in Rostov Oblast in Russia. Payment was made in the form of shares in the company's two existing production clusters in Samara and Stavropol, and a monetary payment of EUR15.1 million. According to Trigon, the new production cluster offers four strong competitive advantages: location near to major export ports, good historical rainfall (in regional terms), contiguous layout of the land, and potentially very significant irrigation potential (the example provided notes that the 10-year average rainfall record in the new Rostov cluster stands at 485 mm per year, compared to 374 mm per year in old Stavropol production cluster). Trigon note that these four factors together will enable higher and more consistent potential towards achieving profitability, compared to the land swapped (Global News Wire, 2012).

149 IMC expanded its land bank during 2011–2012 and cultivated area data therefore show a lower proportion used (spring cultivation is compared against total land at year end). The company has in the past cultivated 95-100 percent of its land bank.

150 Alpcot Agro (2012) have stated their intention to reduce the size of their land bank to around 200 000 hectares and to invest the proceeds from these disposals in addressing improved efficiencies.

Figure 22: Storage coverage ratio (percentage of storage to annual harvest volume)



Source: Foyil analysis, November 2012.

Table 31: Utilization of land bank (2011)

Company	Land bank hectares	Cultivated hectares	Share of land bank cultivated (%)
IMC	82 700	63 000	76
CFG	23 700	23 700	100
Trigon Agri	172 000	89 000	52
AgroGeneration	50 000	37 000	74
Agroton	171 000	171 000	100
Alpcot Agro	281 300	130 000	46
Black Earth Farming	318 000	260 000	82
Total/average	**1 098 700**	**773 7 0**	**76**

Sources: company data.

Note: Alpcot Agro data include acquisition of Landkom in January 2012 (additional 77 000 hectares).

- Intensity in primary agriculture refers to the overall value of inputs used per hectare including land (acquisition or lease), machinery (movables and irrigation equipment), buildings (storage and drying facilities) and working capital needs (crop inputs). Aspects such as crop choice and crop rotations also impact intensity. For example, an optimal crop rotation strategy may enable continuous production, without the need for land to lay fallow, or may decrease the need for fertilizer and other operational cost inputs. However, the significance of intensity as a performance driver will become more evident only with a longer operating history.
- Land ownership may become an important consideration over time (in the context of the moratorium on farmland sales in Ukraine). The relative financial performance among the selected companies to date appears to favour those that choose not to (or cannot) invest in acquisition of land. However, this must be weighed against the risks inherent in the security and tenure of land leases
- Crop selection and crop rotation are essential processes to manage soil structure and fertility. The ability to manage crop selection with some flexibility is an important performance driver. An example is the increase in the amount of higher margin corn

Table 32: Leverage ratios (as at 31 December 2011)

Ratio	IMC	CFG	Trigon	Agroton	AgroGen	Alpcot	BEF
Debt/equity	0.20	0.23	0.56	0.43	0.78	0.07	0.55
Debt/EBITDA	0.91	2.28	4.52	5.07	5.76	NEG	NEG
Net debt/EBITDA	0.72	0.89	3.24	3.34	4.08	NEG	NEG
EBITDA/interest expense	13.76	4.69	2.76	1.86	NMF	NEG	NEG

Source: Foyil analysis, November 2012.

being grown in Ukraine in recent years (areas planted to corn have almost doubled during the past five years).[151]

- Diversification across the value chain (vertical integration) may enhance returns (and mitigate risk) by adding value to primary crops. No clear model for diversification across the agribusiness value chain within large-scale arable crop producers has so far emerged in the CEE/CIS regions. Most companies are exploring options and popular concepts include utilizing grains in milk and protein production (in particular, pork production), further processing of grains and oilseeds, and developing downstream infrastructure (storage and port facilities and related logistics). Examples of diversification include: Trigon Agri, which has invested in cereals trading and milk production[152] (though milk production, located mostly in Estonia, is not specifically integrated into the company's core arable crops production); and Black Earth Farming, which in 2012 announced a strategic partnership with PepsiCo in the Russian Federation to produce potatoes and sugar on an exclusive supply basis, thus diversifying from their core cereals and oilseeds business.

Financial management

Use of leverage. Leverage is an important consideration in crop production because of the relatively short, intensive period of inputs and a potentially long sales period. Table 32 shows that IMC and CFG have low leverage ratios (debt/equity below 0.25 and net debt/EBITDA below 1.0). This compares with high net debt/ EBITDA multiples (over 3.0) in the other companies (AgroGeneration, Agroton, Trigon Agri) and negative ratios in Alpcot Agro and Black Earth Farming. In most companies, positive EBITDA covers interest expenses comfortably, except in AgroGeneration and Agroton where ratios are below 2.0. The highly leveraged companies carry substantial risks in terms of servicing existing debt and securing finance needed for the next growing season. High interest costs divert cash resources from more productive uses and may negatively impact performance. The leading performers appear to be managing leverage within satisfactory limits.

Gains from revaluation of biological assets. A company may reflect the evolving value of crops as these grow and mature in line with changing market prices by revaluing these biological assets. When revaluation is performed properly, income is realized gradually and consistently. However, there is a risk from manipulation of the process that may result in recording overly positive results in one period, which would subsequently have to be reversed. The accuracy with which a company records gains from asset revaluation is a factor that impacts performance as a measure of management and may create the possibility of unexpectedly dramatic changes in reported profit.

Table 33 illustrates gains from revaluation of biological assets in 2011. Some companies, like AgroGeneration, Agroton, Black Earth Farming and IMC, have been relatively aggressive in realizing gains from revaluation of crops before harvest. In some instances, aggressive revaluations may need to be reversed (Black Earth Farming reversed valuation gains in 2011).

151 An illustration of this aspect is Alpcot Agro (2012) who note that they "have examined the optimal mix of cropping across the business considering risk, return, storage and agronomic rotational requirements" and as a consequence will endeavour to maximize the production of corn, rapeseed and sunflower. In Ukraine, overall, areas under corn increased from 1 711 000 hectares in 2005 to 3 620 000 hectares in 2011 (Ukraine State Statistics Service, 2011).

152 The company Ramburs Trigon was established in 2008 and manages Trigon Agri's cereal trading and storage operations. Trigon Agri (2013) has dairy production activities in Estonia and Leningrad Region in Russia (milk production was recently listed by the company as a non-core asset).

Table 33: Gain from revaluation of biological assets (2011)

Asset class	IMC	CFG	Trigon	Agroton	AgroGen	Alpcot	BEF
Non-current bio-assets	3.2	-	-	-0.8	-	-0.1	0.0
Current bio-assets	5.3	-	-	23.1	1.3	-	
Crop inventory	15.7	-	-		6.0	2.6	16.0
Change in net realizable value of agricultural produce after harvest	-	-	-	-	-	-	-2.6
Total	**24.2**	**-**	**0.4**	**22.3**	**7.2**	**2.5**	**13.4**
% of EBITDA	100%	0%	2%	219%	105%	NMF	NMF

Source: Foyil analysis, November 2012.

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Annex 1 - Case studies: private agriculture equity funds in selected countries

Table of Contents

Key statistics for selected countries

Table 1: Population, GDP, agricultural GDP and agricultural labour

#	Country	Population (millions)	GDP (USD billion)	Agri GDP (USD billion)	Agri GDP as share of total GDP (%)	Agriculture % of labour employed
1	the Russian Federation	141.9	1 858.0	83.6	4.5	9.8
2	Ukraine	45.7	165.2	17.4	10.5	15.8
3	Belarus	9.5	55.1	5.2	9.5	9.4
4	Kazakhstan	16.6	188.0	9.8	5.2	25.9
5	Poland	38.2	514.5	18.5	3.6	17.4
6	Romania	21.4	179.8	14.2	7.9	30.0
7	Bulgaria	7.5	53.5	3.0	5.6	7.1
8	Croatia	4.4	63.9	3.3	5.1	5.0
9	Serbia	7.3	45.8	5.0	11.9	21.9
10	Turkey	73.6	775.0	70.5	9.1	25.5
	Total	**366.1**	**3 898.8**	**230.5**	**5.9**	**16.5**

Sources: World Bank (2012); EastAgri (2012); national statistics agencies.

Note: the total percentage of labour employed in agriculture is the weighted total.

Table 2: Total land, agricultural land and arable land

#	Country	Total land (million ha)	Agricultural land (million ha)	Agri land as share of total land	Arable land (million ha)	Arable land as share of total land (%)
1	the Russian Federation	1 709.8	196.2	11.5%	120.7	7.1
2	Ukraine	60.4	41.3	68.4%	32.5	53.8
3	Belarus	20.8	8.9	42.7%	5.5	26.5
4	Kazakhstan	272.5	90.2	33.1%	24.0	8.8
5	Poland	31.3	16.1	51.6%	12.9	41.4
6	Romania	23.8	13.5	56.7%	8.8	36.9
7	Bulgaria	11.1	5.0	45.3%	3.1	28.3
8	Croatia	5.6	1.3	23.0%	0.9	15.8
9	Serbia	8.8	5.1	57.2%	3.3	37.3
10	Turkey	78.4	38.9	49.7%	21.3	27.2
	Total	**2 222.5**	**416.6**	**43.9%**	**233.1**	**28.3**

Sources: World Bank (2012); EastAgri (2012); national statistics agencies.

Note: Globally, the 10 selected countries account for approximately 9 percent of total agricultural land and 17 percent of total arable land.[1]

1 FAO data defines agricultural land as comprising "arable land, pastures and land under permanent crops". On this basis, total agricultural land is approximately 4.8 billion hectares and total arable land is 1.38 billion hectares (FAO, 2010).

The Russian Federation

General overview

Since 2006, private equity funds and other foreign-led equity sources have invested around USD3.0 billion in primary agriculture in the Russian Federation, giving them control of some 1.7 million hectares of farmland.[2] This represents approximately 0.9 percent of the total agricultural land and 1.4 percent of the total arable land in the Russian Federation.[3]

The investment strategy for these groups focuses on primary agricultural production – in most instances arable crops farming and in a few instances milk production.

Two private equity funds have invested some USD470 million in Russian primary agricultural production,[4] controlling around 310 000 hectares of farmland. This represents approximately 0.16 percent of the total agricultural land and 0.26 percent of the total arable land in the country.

The balance of investments of some USD2.5 billion has been made through private investment companies. These investments control some 1.4 million hectares of land, which represent some 1.1 percent of the Russian Federation's arable farmland and 0.67 percent of its total agricultural land.

Recent listed investments in large-scale crop production in the Russian Federation have, overall, yet to demonstrate consistent and sustained profitability. This generally weak performance has been due to a combination of factors, including climatic, market and local operating conditions as well as, in some instances, poor strategic and operational management. Many ventures were launched with little experience of farming on a large scale, and the subsequent reality has proven an expensive learning curve for shareholders.

In most cases, early operational challenges overwhelmed initial strategies; there has been a continual evolution in strategy as management has become more experienced and competent at each level. Most of these large-scale ventures have now created platforms to drive improvements in profitability. Better performance will depend on companies' ability to achieve crop yield and operating cost standards and to manage market volatility.

A key part of the early strategy for these investments is securing ownership rights to the farmland. Consequently, there is a short-term focus on finalizing the land registration process, as well as improving crop production.

There are three major initiatives currently raising funds to invest in primary agriculture and agribusiness ventures: AVG Capital Partners, NCH Capital and VTB Capital. The latter two are private equity fund structures; the former has recently announced the conversion of its agriculture fund to an investment company structure. The total funding target amount being sought (in stages) is approximately USD2-3 billion. The investment focus of these proposed initiatives is mixed, with either or both primary agricultural production (arable crops) and added value activities such as greenhouse vegetables and various forms of livestock and meat production. Key investment drivers include domestic consumption trends and exploiting opportunities for import substitution.

A fourth investment initiative currently under development is AIMC (2012), an investment company (previously announced as a fund) which plans to invest in agricultural infrastructure, for example, storage facilities.

The potential scale of investments and the opportunity to acquire relatively cheap farmland will continue to drive investor interest in Russian primary agriculture. Farmland in the Russian Federation is undervalued relative to comparable land in global peers (e.g. Argentina and Brazil) and relative to its inherent production potential. However, a combination of factors has kept the market at low levels, including the abundant supply of land (currently only some 77 million of the 120.7 million hectares of arable land in the Russian Federation is cultivated); a lack of

2 "Farmland under control" may comprise either or both freehold or leasehold title to the land. In the case of foreign-led investments, most land has been or is in the process of being converted to freehold title.

3 This is based on data provided by the Russian Federal Service for State Registration, Cadastre and Cartography (2012). These data state that the country has 196.2 million hectares of agricultural land, of which arable land comprises 120.7 million hectares.

4 The funds are NCH Agribusiness Partners Fund and UFG Real Estate Fund.

Table 3: Key statistics for the Russian Federation

Indicator	Amount
Population	141.9 million
GDP	USD1 858 billion
GDP per capita	USD13 094
Classified by the World Bank as upper middle income	
Agricultural GDP	USD83.61 billion
Agricultural GDP per capita	USD589
Agriculture as % of GDP	4.5%
Agricultural % of labour employed	9.8%

Sources: CIA (2011); World Bank (2012).

Table 4: Total land and agricultural land

	Hectares	Share of total land (%)
Total land	**1 709 824 000**	
Agricultural land	196 269 000	11.5
Arable land	120 709 900	7.1
Orchards	1 791 000	0.1
Pastures	75 559 100	4.4
Irrigated land	4 300 000	0.3
Forests	813 156 700	47.6
Number of farms		
Average farm size		

Sources: data for agricultural land, arable land, pastures, forest land provided by the Russian Federal Service for State Registration, Cadastre and Cartography (2012); data for orchards provided by FAOSTAT (2009).

Note: cultivated land covers 76.6 million hectares (63 percent of the total arable land) (Russian Federal State Statistics Service, 2012).

Table 5: Percentage of area cultivated by category of agricultural producer

Type of producer	Share of land cultivated (%)
Agricultural organizations	75.3
Private (peasant) farms	20.3
Household plots	4.4

Source: Russian State Statistics Service (2009).

Table 6: Agricultural land ownership, Central Federal District in the Russian Federation

Type of ownership	Share of land (%)
Individuals	63
State and municipal entities	28
Legal entities	9

Source: BEFL (2012) quoting State Land Register. Data as at 1 January 2011.

Note: Total agricultural land in this district is around 17 500 000 hectares. The share of land controlled by legal entities in the individual regions within the federal district varies from 7 percent (Tula Region) to 26 percent (Lipetsk Region). The district accounts for some 24 percent of the Russian Federation's gross agricultural output.

Table 7: Agricultural land ownership, Southern Federal District, North Caucasian District and Volga Federal District, the Russian Federation

Type of ownership	Share of land (%)
Individuals	59
State and municipal entities	36
Legal entities	5

Source: BEFL quoting State Land Register. Data as at 1 January 2011.

Note: Total agricultural land in these districts is around 52 000 000 hectares. The share of land controlled by legal entities in the individual regions within the federal districts varies from 1 percent (Bashkortostan) to 23 percent (Tatarstan). Together, the districts account for around 48 percent of the Russian Federation's gross agricultural output.

demand and depth among land market players (including a relatively small class of individual commercial farmers); low operational profitability; and the relative lack of market sophistication (there is little collateralization of farmland). Country risk perceptions also continue to have a significant influence on many investors.

While national data were not currently accessible for this study, the following tables summarize the estimated distribution of land ownership in four of the most important agricultural production districts in the Russian Federation. These highlight the ownership of most agricultural land by individuals.

Overview of agriculture in the Russian Federation

The last 10 to 15 years have seen the emergence of agro-holdings or conglomerates which have taken over the remnants of collective and state farms and currently manage large tracts of land. These new primary agricultural producers have, in most instances, been funded by capital from outside the agricultural sector. The holdings are typically large (land banks of 20 000-100 000 hectares or larger), usually engaged in several stages of production and processing, and often vertically integrated. In many cases, farm acquisitions have arisen from previous commercial relationships, while in some instances assets have been acquired in exchange for settlement of debts. These groups have brought investment, new technology and, often, new management practices to the sector (Liefert, Liefert and Serova, 2009). Notable exceptions are the major resources and industrial groups in the Russian Federation, which have generally not invested in primary agriculture.[5]

This study identified 47 agricultural enterprises controlling at least 50 000 hectares of farmland. Of these, 33 control at least 100 000 hectares. Together, they control some 8.9 million hectares of land, which amounts to 4.6 percent of the agricultural land and around 7.5 percent of the arable land in the country.[6] Table 14 shows a list of these enterprises.

Information about the extent of land controlled by agro-holdings in the Russian Federation is often not available in the public domain.[7] Exceptions to this are publicly listed companies and foreign investors, most of which fully disclose their land holdings on their corporate websites.

Foreign-led equity groups have invested some USD3.0 billion in primary agriculture in the Russian Federation since 2006. These investments account for about 1.7 million hectares of farmland, which represents some 0.9 percent of agricultural land and 1.4 percent of the arable land in the country.[8]

5 There are a few exceptions. Examples include Sistema JSFC's joint venture investment with the Sierentz Group (Dreyfus family) in RZ Agro, which controls over 90 000 hectares, and Kuban Agroholding, which controls 75 000 hectares and is a subsidiary of Russian conglomerate Basic Element.

6 These are total land banks and not all land is arable or cultivated. Moscow consultancy IKAR reports that some 15.5 million hectares of agricultural land are controlled by the largest 250 agricultural enterprises in Russia, and that there are around 40 enterprises with land banks in excess of 100 000 hectares (Rylko, 2011).

7 For example, two of the 10 largest farmland operators do not have holding company websites.

8 These calculations are based on total agricultural land of 196 million hectares and total arable land of 120.7 million hectares (Russian Federal Service for State Registration, Cadastre and Cartography, 2012).

Table 8: Distribution of agricultural land by farm type

Type of farm	Share of agricultural land (%)
Agricultural enterprises	~80-85
Private farms	~10
Household farms	~5-10
Total	**100**

Source: author estimates.

Note: According to the latest Agricultural Census of the Russian Federation, conducted in 2006, the farming structure is broadly as follows: (i) There are some 59 000 agricultural enterprises averaging 2 300 hectares. The larger agricultural enterprises average around 4 000 hectares each. (ii) There are around 23 million household plots averaging some 0.4 hectares each. (iii) There are around 285 000 private farms averaging some 85 hectares in agricultural land and covering around 19.5 million hectares overall.

Table 9: Gross agricultural output (GAO) by type of producer (2011)

Farm type	Value USD (billion)	Share of total production (%)
Agricultural enterprises	54.8	47.7
Household farms	50.0	43.4
Private (peasant) farms	10.2	8.9
Total	**115.0**	**100**

Source: Russian Federation State Statistics Service (2012).

Note: "Agricultural enterprises" include production cooperatives, closed joint-stock companies, state enterprises, limited liability companies, and subsidiary farms of non-agricultural organizations. "Household farms" include private subsidiary and other plots in rural and urban settlements, individual citizen's farms with land plots at horticultural, garden and dacha associations of citizens. "Private (peasant) farms" represent unions of citizens, bound by relative relation and an attribute, having property in common ownership and producing agricultural products on the basis of their personal participation (Russian Federal State Statistics Service, 2012).

Investments from all sources, local and foreign, have been significantly driven by attractive government-funded incentives, including interest-rate subsidies and taxation incentives. Local strategic investors have accumulated large land banks to support vertically integrated strategies, particularly in sugar (e.g. Prodimex, Razgulay, Rosagro and Sucden), pork and poultry production (Cherkizovo) and, more recently, in beef production (Miratorg).

Notably absent from significant investments in primary agriculture in the Russian Federation are global commodity trading groups (e.g. Cargill, Bunge, Glencore), although these have invested significantly in logistics and added value processing (e.g. edible oils, and animal feeds).

Structure of farming in the Russian Federation

There are three main groups of producers in Russian farming: agricultural enterprises, private (peasant) farms and household plots. the Russian Federation has, however, preserved for the most part the bi-modal size distribution of farming inherited from the Soviet Union. In contrast to other market economies where only a small proportion of farms are organized as corporations, agricultural enterprises in the Russian Federation control about 80 percent of agricultural land. These enterprises are far larger in physical size than the largest farms in comparably large agricultural systems in North America (Lerman and Sedik, 2013).

Table 8 shows the distribution (usage) of agricultural land among these three producer groups.

The emergence of private family farms has been limited and the Russian Federation lags behind the rest of the CIS in terms of the individualization[9] of farming (only about 20 percent of agricultural land versus around 70 to 80 percent in most of Central Asia and around 40 percent in Ukraine) (Lerman and Sedik, 2013). However, household plots play a significant role in agriculture in the Russian Federation, accounting for around 43 percent of gross agricultural output, as illustrated in Table 9.

9 The "individual sector" consists of peasant farms and household plots.

Table 10: Share of agricultural output between crops and livestock (2011)

Activity	Value USD (billion)	Share of total production (%)
Crops	61.8	53.7
Livestock	53.2	46.3
Total	**115.0**	**100%**

Source: Russian Federal State Statistics Service (2012).

Table 11: Breakdown of cultivated land by type of producer (2011)

Farm type	Cultivated land (million ha)	Share of total crops (%)
Agricultural enterprises	56.7	74.0
Household farms	3.5	4.5
Private (peasant) farms	16.5	21.5
Total	**76.7**	**100**

Source: Russian Federal State Statistics Service (2012).

Table 12: Breakdown of cultivated land by crop type (2011)

Crop	Land (hectares)	Share of crops (%)
Grains and legumes	43 572 000	56.8
Industrial crops	11 836 000	15.4
Potatoes, melons and vegetables	3 117 000	4.1
Forage crops	18 137 000	23.7
Total in crops	**76 662**	**100**
Fallow land	13 991 000	
Total land listed for crops	**90 653 000**	

Source: Russian Federal State Statistics Service (2012).

Note: * The category "forage crops" includes perennial and annual grass (which together make up 88.5 percent of the category), as well as areas of maize grown for forage.

Table 13: Comparison of land in agricultural crops between 1992 and 2011

Crop	Land in 1992 (million ha)	Land in 2011 (million ha)	Difference (million ha)	Difference (%)
Grains and legumes	61 939	43 572	- 18 367	- 31
Industrial crops	5 891	11 836	+ 5 945	+ 100
Potatoes and vegetables	4 287	3 117	- 1 170	- 28
Forage crops *	42 474	18 137	- 24 337	- 58
Total in crops	**114 591**	**76 662**	**- 37 929**	**- 33**
Fallow land	13 026	13 991	+ 965	- 7
Total land listed	**127 617**	**90 653**	**- 36 964**	**- 29**

Source: Russian Federal State Statistics Service (2012).

Table 10 shows the split between crops and livestock for agricultural output.

Some 74 percent of total crops are produced by (larger) agricultural enterprises. Household farms, however, produce around 77 percent of crops like potatoes and vegetables (incidentally, these two sub-sectors are target sectors for fund investors, and a greater proportion of potatoes and vegetables is expected to come from larger, higher technology producers in the future).

Table 11 and Table 12 further analyse the sources and breakdown of crop production.
Table 13 illustrates the 29 percent fall in the area of agricultural land used for crops since 1992. However, most of the decline has been in the category "forage crops" which, as noted above, includes a high percentage of perennial and annual grassland. The area cultivated for crops (grains and oilseeds), has decreased by some 18 percent (or 12.5 million hectares) since 1992. The largest drop is in the production of forage crops, reflecting the sharp decline in livestock numbers since that year.

The Russian Federation is a significant importer of agricultural products, which amounted to some USD40 billion in 2011 (USDA, 2012c). The country is the second largest agricultural importer among emerging markets, after China. Key imports are meat, processed foods, fruits and vegetables.

The Russian Federation's current status as a major meat importer and grain exporter stands in contrast to its position on agricultural production and trade during the Soviet period, when it and the Soviet Union as a whole was a significant producer of meats and large importer of grains and oilseeds (Liefert, Liefert and Serova, 2009). During the 1980s, the Soviet Union imported an average of 34 million tonnes of grain per year. The switch to exporting 48 million tonnes of grain (in 2008–2009) represents a huge shift of over 80 million tonnes for supply on the world market.

Historical context to farmland structure and ownership

Between 1917 and 1990, all agricultural land in the Russian Federation was owned by the state. The transition to a market-oriented economy began with the privatization of land and farm assets and their free transfer to employees of large-scale farms as the fundamental principle guiding this process. As a result, farmland was divided into many small shares held by individuals. Restitution was impossible because of the extended period that had elapsed since collectivization. Smallholder agriculture was therefore not the default situation, unlike in former communist countries in Central Europe and the Balkans.

Mass privatization was launched in 1991–1992 with state land falling under the joint ownership of people who had lived and worked in collective and state farms. The privatized land was then divided into equal shares and each adult, whether collective farm worker, pensioner or employee of rural social services, received one land share.

A land share is a paper entitlement to fractional ownership in agricultural land. This mechanism created a new ownership category that became known as "joint shared ownership" – no longer state ownership, but not fully individual ownership. Shareowners were allowed to withdraw physical land plots from joint shared ownership to individual ownership, but the requirement to survey and register the plot was deferred to the actual moment when the shareowner decided to withdraw the land from the common pool of owners.

Russian land privatization produced 11.9 million shareowners with land shares covering 117.6 million hectares or 9.9 hectares per share. By 1995, the state had privatized fully 56 percent of the original 209.8 million hectares controlled by former collective and state farms at the beginning of reform. The remaining land was transferred to the state redistribution reserve, which provided the pool of land for future creation of peasant farms, expansion of household plots and various municipal needs.

The distribution of land shares gave shareowners the options to start an independent farm by withdrawing their land from the collective, or to leave their land shares in joint cultivation by the existing farm (Lerman and Sedik, 2013).

The new market environment created the expectation that private (family) farms would emerge in significant numbers and that large-scale collective farms would be restructured in commercial terms. However, few people were interested in establishing individual farms (Serova, 2009) and management practices inside large agricultural enterprises remained largely unchanged until the emergence of new investors.

Investments

Since 2006, private equity funds and other foreign-led equity sources have invested around USD3.0 billion in primary agriculture in the Russian Federation. Most of these investments

Figure 1: Map of the Russian Federation

Source: UN Cartographic Section (January, 2004).

have been made via private investment companies. These investments control some 1.7 million hectares of farmland, which may be held under either or both freehold and leasehold titles. This represents approximately 1.4 percent of the arable land and 0.9 percent of the total agricultural land in the country.[10]

Two private equity funds have invested around USD470 million in primary agriculture in the Russian Federation: NCH Agribusiness Partners Fund and UFG Real Estate Fund. These investments control some 310 000 hectares of farmland, which represents 0.26 percent of the arable land and 0.16 percent of the total agricultural land in the Russian Federation.

Since 2006, around USD2.5 billion of other foreign-led equity have invested in primary agriculture. Investments include Alpcot Agro, Black Earth Farming and Trigon Agri, which started as private company investments and subsequently transitioned to public listings. Other significant foreign-led equity investments include RAV Agro-Pro (2012)[11] owned by PPF Group, an investment and finance group based in the Czech Republic; Ekoniva, a German-led investment in farming and diversified agriculture; RZ Agro, an investment by Sierentz Group (Louis Dreyfus family) that recently merged with the farming interests of Sistema JSFC (RZ Agro, 2013); and Volga Farming,[12] a Swedish-led investment company.

At least two foreign hedge funds have invested in primary agriculture in the Russian Federation: Och-Ziff Capital Management's investment in Agro-Vista Tambov (Och-Ziff sold their interest in this business in 2011); and QVT Financial's investment in Vostok Agro, also located in the Tambov region. The total investment of these

10 These percentages are based on official data, which lists agricultural land at 196.2 million hectares and arable land at 120.7 million hectares (Russian Federal Service for State Registration, Cadastre and Cartography, 2012).

11 The holding company is PPF Group (www.ppfgroup.nl).

12 Volga Farming is the only agricultural venture in Russia with a MIGA guarantee. In 2009, the company merged with Heartland Farms, one of the earliest foreign private investments in farming in Russia (Volga Farming, 2013).

Table 14: the Russian Federation: land banks of 50 000 hectares and larger

Rank	Company	Land bank hectares	Regions	Website
1	AK Bars Holding Company	572 000	Tatarstan	www.abh.ru
2	Prodimex	570 000	Belgorod, Orel, Voronezh, Penza, Tula, Samara, Krasnodar, Bashkortostan	www.prodimex.ru
3	Ivolga	500 000	Kursk, Chelyabinsk, Orenburg	www.ivolga.kz www.orenivolga.ru
4	Vamin	468 000	Tatarstan	www.vamin.ru
5	Rosagro	450 000	Belgorod, Tambov, Voronezh	www.rusagrogroup.ru
6	Razgulay	411 000	Belgorod, Rostov, Kursk, Orel, Orenburg, Volgograd, Samara, Krasnodar, Altai, Stavropol, Bashkortostan, Tatarstan	www.raz.ru
7	SAHO	400 000	Rostov, Tula, Ulyanovsk, Novosibirsk, Altai	www.saho.ru
8	Krasny Vostok Agro	350 000	Tatarstan, Ulyanovsk, Tambov, Kursk, Voronezh	www.kvagro.ru
9	Napko	350 000	Lipetsk, Tambov, Voronezh, Penza, Samara, Ulyanovsk	No website
10	Black Earth Farming	318 000	Kursk, Lipetsk, Tambov, Voronezh	www.blackearthfarming.com
11	AgroTerra	280 000	Tula, Ryazan, Penza, Kursk, Tambov, Lipetsk, Orel	www.agroterra.com www.nchcapital.com
12	Agrosila	251 183	Tatarstan	www.agroforceg.com
13	VALINOR	238 000	Rostov, Stavropol, Krasnodar	www.valinor-in.com
14	Yug Rusi	200 000	Rostov, Volgograd, Krasnodar	www.goldenseed.ru
15	Alpcot Agro	161 000	Kursk, Tambov, Voronezh, Lipetsk, Kaliningrad	www.alpcotagro.com
16	Ekoniva	173 000	Voronezh, Kursk, Novosibirsk, Kaluga, Orenburg, Tyumen	www.ekoniva-apk.ru
17	RAV Agro Pro	164 500	Voronezh, Orel, Penza, Rostov, Kursk	www.ravagro.ru
18	Avangard Agro	160 000	Voronezh, Orel, Kursk, Belgorod	www.russolod.ru
19	GC ASB (Kristall)	160 000	Voronezh, Tambov, Penza	www.asbgrupp.ru
20	AgroGard	150 000	Krasnodar, Lipetsk, Orel, Tambov, Belgorod, Kursk	www.agrogard.ru
21	PAVA - RAD	150 000	Altai	www.apkhleb.ru www.radcorp.ru
22	Miratorg	148 700	Belgorod, Bryansk, Kursk	www.miratorg.ru
23	Terra-Invest	140 000	Volgograd, Saratov, Kursk, Tambov, Bryansk, Lipetsk, Smolensk, Orel, Krasnodar	www.terinvest.ru
24	Rusmolco	133 000	Penza	www.rusmolco.com
25	Nastyusha	150 000	Central Black Earth	www.nastyusha.ru
26	Agro Belgoriya	130 000	Belgorod	www.agrobel.ru
27	Penta Agro	125 000	Saratov	www.penta-agro.ru
28	Cherkizovo	125 000	Tambov, Lipetsk, Penza, Saratov, Orel, Voronezh	www.cherkizovo-group.ru
29	APK "Molochniy Produkt"	112 000	Ryazan	www.mol-prod.ru
30	Trigon Agri	107 000	Penza, Rostov, St Petersburg	www.trigonagri.com
31	Razvitiye Regionov Agric	101 700	Ryazan	No website
32	Bely Fregat	100 000	Orel	www.wfgt.ru
33	Getex	100 000	Volgograd	www.getex.ru
34	Agrico	100 000	Krasnodar, Stavropol	www.agrico.ru
35	Gelio-Pax	95 700	Volgograd	www.geliopax.ru

Rank	Company	Land bank hectares	Regions	Website
36	RZ AGRO	90 000	Rostov	www.rz-agro.ru
37	Sucden	90 000	Lipetsk, Penza, Krasnodar	www.sucden.ru
38	Agrocomplex	86 000	Krasnodar	No website
39	Orel NobelAgro	85 250	Orel	www.nobelprojects.ru
40	Talina	84 200	Saratov, Nizhny Novgorod, Penza, Ulyanovsk, Mordovia	www.talinagroup.ru
41	Trio Group	82 600	Lipetsk	www.trio21.ru
42	Kuban AgroHolding	75 000	Krasnodar	www.ahkuban.ru
43	Volga Farming	65 000	Penza	www.volgafarming.com
44	Rusgrain Holding	57 000	Voronezh, Rostov, Omsk	www.rusgrain.com
45	Agrotech-Garant	55 000	Voronezh, Belgorod	www.agroteh-garant.ru
46	Agro Vista Tambov	51 000	Tambov	www.agro-vista.ru
47	Vipoil-Agro	50 000	Volgograd	www.vipoil.com
48	Eksima	50 000	Orel	www.avk-exima.ru
	Total (hectares)	**9 065 833**		

Sources: company websites (where available), media reports, NOViROST research (2013).

ventures is about USD70-80 million and covers around 70 000 hectares.

The investment strategies of the above-mentioned investors focus on primary agricultural production, and in particular arable crop farming.

There are two global commodity groups invested in primary agriculture as part of vertical integration investment strategies. Olam International has invested in milk producer Rusmolco (OLAM, 2012) and Sucden has sugar beet farming investments supporting its sugar-processing operations. Table 15 provides a list of major foreign investors engaged in primary agriculture in the Russian Federation.

Three funds currently raise funds to invest in primary agriculture (farmland) and other agribusiness activities. NCH Capital is developing a second the Russian Federation and Ukraine farmland fund. VTB Capital has recently converted its proposed agricultural fund into a private investment company structure and is developing a more diversified agricultural-sector investment approach. AVG Capital Partners (2013) is developing a diversified fund focusing potentially on investments in farmland, pork production, greenhouse and open-field vegetables and agricultural infrastructure.

Explanatory notes to table 14:

- Information on land banks is frequently not disclosed explicitly, therefore some of this information may not be completely accurate. There may also be some fluctuation in the area of land "controlled" by some companies due to the short-term nature of lease agreements in some instances (land may be released back to the lessors at relatively short notice). Some of the best disclosures on land banks are those made by foreign-led companies.
- As far as could be ascertained, Ivolga Holding does not have a corporate holding website. There is consequently no official disclosure of the size and location of the land banks in the Russian Federation and Kazakhstan (information provided on the Ivolga Orenburg website lists the land bank in that region as 370 000 hectares). Media reports that Ivolga Holding controls a total of "1.5 million hectares" between Kazakhstan and the Russian Federation though the exact split between the countries is not reported. The number used for Ivolga in this schedule is the most commonly reported estimate (i.e. 500 000 ha in the Russian Federation).
- Nastyusha is reported as controlling a total of 350 000 hectares split between

Table 15: Land banks: foreign-invested companies in the Russian Federation

Rank	Company	Land bank hectares	Regions	Main activity	Ownership	Website
1	Black Earth Farming	318 000	Kursk, Lipetsk, Tambov, Voronezh	Farming	Public	www.blackearthfarming.com
2	AgroTerra*	280 000	Kursk, Lipetsk, Tambov, Tula, Ryazan, Penza, Orel	Farming	Fund	www.agroterra.com
3	Alpcot Agro	161 000	Kursk, Lipetsk, Voronezh, Kaliningrad	Farming	Public	www.agrokultura.com
4	Ekoniva	173 000	Kursk, Voronezh, Orenburg, Novosibirsk, Kaluga, Tyumen	Farming	Private	www.ekoniva-apk.ru
5	RAV Agro Pro	164 500	Kursk, Voronezh, Orel, Penza, Rostov	Farming	Private	www.ravagro.ru
6	Rusmolco	133 000	Penza	Integrated Milk	Olam JV	www.rusmolco.com
7	Trigon Agri	107 000	Penza, Rostov, St Petersburg	Farming	Public	www.trigonagri.com
8	RZ Agro	90 000	Rostov	Farming	Private	www.rz-agro.ru
9	Sucden	90 000	Penza, Lipetsk, Krasnodar	Integrated Sugar	Sucden	www.sucden.ru
10	Volga Farming	65 000	Penza	Farming	Private	www.volgafarming.com
11	Dan-Invest	36 000	Tambov	Integrated Pork	Private	www.dan-invest.com
12	RLB Agro **	28 000	Bryansk	Farming	Fund	www.rlbagro.com
13	Vostok Agro	20 000	Penza, Tambov, Saratov	Farming	Private	No website
	Total (ha)	**1 665 500**				

Sources: company websites (where available), media reports, NOViROST research (2013).

Note: the schedule includes only companies with land banks of 20 000 hectares and larger.

Kazakhstan and the Russian Federation. Again, no website can be found (some reports list holdings in the Russian Federation as 128 000 hectares, however there is no confirmation of the official number).

- Moscow-based consultancy firm IKAR reports that approximately 15.5 million hectares of farmland are controlled by the largest 250 agricultural enterprises in the Russian Federation, and that there are about 40 enterprises with land banks in excess of 100 000 hectares.
- As an interesting comparison, Cresud, one of the largest land managers in South America, owns 473 093 hectares and controls "over 850 000 hectares in Argentina, Brazil, Bolivia and Paraguay" (Cresud, 2012).

Ukraine

General overview

Since 2006, private equity funds and other foreign-led equity sources have invested around USD2.8 billion in primary agriculture in Ukraine, giving them control of some 1.5 million hectares of farmland (all land is under leasehold title). This represents about 3.6 percent of the total agricultural land, or 4.6 percent of the total arable land in Ukraine. The investment strategy of these groups in most instances focuses on large-scale arable crops production.

Three private equity funds have invested fully or partially in primary agriculture in Ukraine: NCH Agribusiness Partners Fund I, NCH New Europe Property Fund II and SigmaBleyzer Southeast European Fund IV. The total invested by these funds amounts to about USD750 million. Land

Table 16: Key statistics for Ukraine

Indicator	Amount
Population	USD45.7 million
GDP	USD165.2 billion
GDP per capita	USD3 614
Classified by the World Bank as lower middle income	
Agricultural GDP	USD17.35 billion
Agricultural GDP per capita	USD379
Agriculture as % of GDP	10.5%
Agricultural % of labour employed	15.8%

Sources: CIA (2011); Eurostat data (2009).

Table 17: Total land and agricultural land

Category	Hectares	Share of total land (%)
Total land	60 355 000	
Agricultural land	41 276 000	68.4
Arable land	32 498 500	53.8
Orchards	Included under arable land	
Pastures	7 886 000	13.1
Irrigated land	2 175 000	3.6
Forests	9 601 000	15.9%
Number of farms	56 133	
Average farm size	N/A	

Source: Ukrainian State Statistics Service (2012).

under control amounts to some 550 000 hectares of farmland, which represents about 1.3 percent of the total agricultural land or 1.7 percent of the total arable land in Ukraine.

The balance of foreign-led equity investments of some USD2.1 billion has been made mostly through private investment companies. These investments control some 950 000 hectares of land, which represents 2.3 percent of the total agricultural land or 2.9 percent of the total arable land in Ukraine.

There have been relatively few new foreign-led investments in primary agriculture in Ukraine since the 2008 global financial crisis. The most significant of these include investments by Continental Farming Group and Alpcot Agro's acquisition of Landkom.[13]

Ukraine currently has a moratorium on the sale and purchase of farmland, which was recently extended until 1 January 2016.[14] There is a lack of clarity at present regarding the timing and format of provisions of the Land Code that will govern agricultural land transactions. This creates uncertainty about existing and prospective investments. For example, recent reports indicate that there may be provisions to limit the scale of land owned by foreign entities.

Ukraine has the second largest area of arable farmland in Europe after the Russian Federation, and the country's total agricultural land of 41.5 million hectares represents about 25 percent of the EU's total agricultural land of some

13 Another example is Morgan Stanley's original investment in Enselco, which was subsequently acquired by JadenFinch Investments and then recently sold to Kernel Holdings.

14 In terms of the moratorium, agricultural land may not be purchased or sold, its usage designation may not be changed, and agricultural land may not be shown as a right in the charter capital of a business entity. The moratorium has reportedly been extended to enable the need to pass further legislation concerning the agricultural land market (Law-Now Ukraine, 2012).

Table 18: Number of business entities in agriculture

Type of entity	Number of entities	Share of total entities (%)
Business partnerships	7 757	13.8
Private enterprises	4 140	7.4
Producers cooperatives	905	1.6
Private farms	41 488	73.9
State enterprises	311	0.6
Other enterprise types	1 532	2.7
Total	**56 133**	**100**

Source: Ukrainian State Statistics Service (2012) (data as at 1 July 2012).

Note: These are official translations, so descriptions may not be literal.

Table 19: Agricultural land – ownership: distribution of enterprises by size of cultivated land area

Area (ha)	Number of holdings	Share of agricultural holdings (%)	Cultivated land (thousand ha)	Share of cultivated land (%)
Up to 20 ha	14 519	25.9	124.8	0.6
20 to 100 ha	18 430	32.9	862.2	4.1
100 to 1000 ha	9 790	17.4	3 627.8	16.8
1000 to 5000 ha	4 848	8.6	10 637.8	49.2
5000 to 10 000 ha	517	0.9	3 431.2	15.9
> 10 000 ha	152	0.3	2 886.8	13.4
Total	**48 256**	**86.0**	**21 570.6**	**100.0**
Without land *	7 877	14.0		
Total enterprises	**56 133**			

Source: Ukrainian State Statistics Service (2012).

Note: *These are registered agricultural enterprises operating without land.

172 million hectares.[15] Ukraine followed similar processes to the Russian Federation in land privatization, and the basis of rights is land share certificates ("pai"). Over 70 percent of agricultural land is under private ownership (see Table 20).

In this instance, the "number of farms" represents the number of registered business entities engaged in agriculture including private enterprises, private farms, state enterprises, cooperatives and other structures. Further analysis is provided in Table 18.

Ukraine has a largely bi-modal farming structure: about 78.5 percent of cultivated land is managed by agricultural entities controlling properties larger than 1 000 hectares (Table 19 shows a comparison on the basis of cultivated land). Many of these are subsidiary holdings of larger agro-holdings. Only about 1 percent of land is controlled by farm enterprises of 20 hectares or smaller in size.[16]

State ownership includes both state (national) and municipal ownership. A new law "On amendments to some legislative acts of Ukraine regarding distinguishing lands of state and municipal ownership", which takes effect on 1 January 2013, will define municipal ownership of land more clearly. It is estimated that the state will own 10 million hectares (which may be transferred to the authorized share capital of the newly established State Land Bank), and municipal ownership lands will constitute about 1 million hectares.

15 The top 10 arable land areas in Europe are (in this order) Russia, Ukraine, France, Spain, Poland, Germany, Romania, Italy, United Kingdom and Hungary.

16 This compares to the average overall farm size in the EU-27, which is 22 ha (Eurostat, 2012).

Table 20: Agricultural land: ownership

Land category	Hectares	Share of agricultural land (%)	Share of arable land (%)
Agricultural land, total	41 626 000	100	
- of which arable land	32 473 000		100
State ownership	11 041 000	26.5	
- of which arable land	5 612 000		17.3
Private ownership	30 578 000	73.5	
- of which arable land	26 848 000		82.7

Source: UCAB (Ukrainian Club of Agribusiness) from Ukraine land reporting data (November, 2012) (numbers differ slightly to those from the State Statistics Service used in table above).

Notes: The term "arable land" does not include permanent crops and pastures. A more detailed classification of agricultural land (adopted by State Land agency) is provided in Table 21. According to this classification, agricultural land includes arable land, fallow land, perennial plants (orchards, etc.), haylands and pastures.

Table 21: Analysis by type of land user

Type of land user	Land usage by sub-category	Total agricultural land (ha)	Share of agricultural land (%)
Agricultural enterprises, including:		17 003 000	40.8
- Private agricultural enterprises	15 936 500		
- State agricultural enterprises	1 064 900		
Individual citizens, including:		19 600 800	47.1
- Family farms*	4 016 300		
- Private farms	9 091 100		
- Subsistence farms	3 469 700		
- Homes on household plots	1 376 000		
- Land for gardening	182 100		
- Land for horticulture	196 500		
- Land for haying and cattle grazing	1 261 900		
Reserve lands		4 340 500	10.3
Total agriculture land (hectares)		**41 625 800**	

Source: (Ukrainian Club of Agribusiness) from Ukraine land reporting data (November, 2012).

Note: *Under this classification family farms are a form of legal entity, but are included into this section because the right of land ownership and use is granted to the farmer and members of his family.

Overview of agriculture in Ukraine

Ukraine has, geographically, the best access of all CIS countries to export markets, with direct access to the Black Sea and the European Union and a comprehensive internal and export distribution infrastructure. The country is generally self-sufficient in staple food production. Ukraine is the world's largest producer of sunflower oil, a major global producer of grain and sugar, and a future global player on meat and dairy markets. In most years, Ukraine produces significant exportable surpluses and has the potential to significantly increase grain production.

Ukraine has in recent years regained its status of a major supplier of grains to world markets and in 2011 achieved a record grain harvest of nearly 56 million tonnes and exports of over 22.5 million tonnes of cereals. Ukraine is one of the largest exporters of feed quality wheat and is becoming a significant exporter of corn.

Crop yields are on average about 40 percent below comparable EU yields and there is

Figure 2: Map of Ukraine

Source: not known.

significant potential to improve. In spite of Ukraine's significant potential for large-scale agriculture, households still produce 59.4 percent of gross agricultural output.[17]

There is an echelon of competent local and foreign producers emerging that are growing in financial and market sophistication. Agribusiness companies lead the economy in international stock listings.

Land lease rights acquisition costs about USD400 per hectare depending upon farm location and potential. Lease rights are normally acquired through the transfer of corporate rights from the current lease holding company to the new owners. Lease rights can also be transferred through re-registration of land lease agreements.

Annual land lease fees are generally fixed at 3 percent of the nominal land plot value, which varies from region to region. Current average land value, which is the basis for the calculation of rentals, is 20 635 hryvnia per hectare (approximately USD2 540 per hectare). Minimum lease rate on this basis is USD76 per hectare. The highest land valuations are in Cherkasy, Crimea and Donetsk.

There are potentially significant state subsidies although delivery is seldom effective (Demyanenko, 2012). These subsidies include

17 Gross agricultural output 2012: households 59.4 percent, agricultural enterprises 39.8 percent and private farms 1.7 percent (State Statistics Service of Ukraine, 2012).

Table 22: Ukraine: agricultural land banks of 50 000 hectares and larger

Rank	Company	Land bank hectares	Regions	Website
1	Ukrlandfarming	532 000	Volyn, Rivne, Zhytomyr, Kyiv, Chernihiv, Sumy, Lviv, Khmelnytskyi, Ternopil, Ivano-Frankivsk, Vinnytsya, Cherkasy, Poltava, Kharkiv, Lugansk. Kirovogrsd, Dnipropetrovsk, Mykolaiv, Donetsk, Zaporizhzhya, Kherson, Autonomous Republic of Crimea	www.ukrlandfarming.com.ua www.avangard.co.ua
2	NCH Capital	481 800	Volyn, Rivne, Zhytomyr, Poltava, Chernihiv, Sumy, Lviv, Khmelnytskyi, Ternopil, Vinnytsya, Chernivtsi, Mykolaiv, Kharkiv, Cherrkasy, Autonomous Republic of Crimea	www.nchcapital.com
3	Kernel	330 000	Khmelnytskyi, Ternopil, Vinnytsya, Cherkasy, Kirovograd, Mykolaiv, Odessa, Poltava, Sumy, Kharkiv, Dnipropetrovsk, Zaporizhzhya	www.kernel.ua
4	Mriya	295 000	Lviv, Khmelnytskyi, Ternopil, Ivano-Frankivsk, Chernivtsi	www.mriya.net
5	MHP	280 000	Volyn, Zhytomyr, Khmelnytskyi, Ternopil, Ivano-Frankivsk, Vinnytsya, Cherkasy, Sumy, Dnipropetrovsk, Donetsk, Autonomous Rapublic of Crimea	www.mhp.com.ua
6	Ukrainian Agrarian Investments	260 000	Volyn, Zhytomyr, Chernihiv, Sumy, Lviv, Khmelnytskyi, Ternopil, Ivano-Frankivsk, Vinnytsya, Zakarpattya, Chernivtsi, Cherkasy, Poltava, Kharkiv, Kirovograd, Mykolaiv, Odessa	www.uai.kiev.ua
7	Astarta	245 000	Zhytomyr, Khmelnytskyi, Ternopil, Vinnytsya, Poltava, Kharkiv	www.astartaholding.com
8	HarvEast (Illich-Agro)	220 000	Zhytomyr, Cherkasy, Donetsk, Zaporizhzhya, Autonomous Republic of Crimea	www.harveast.com
9	Sintal	150 000	Kharkiv, Kherson	www.sintalagriculture.com
10	Agroton	151 000	Kharkiv, Lugansk	www.agroton.com.ua
11	Privat Agro Holding	116 000	Lviv, Poltava, Cherkasy, Kharkiv, Kherson, Kirovograd, Dnipropetrovsk, Mykolaiv, Odessa, Autonomous Republic of Crimea	www.privat-agro.com.ua
12	Valars Group (Valinor)	120 000	Vinnytsya, Cherkasy, Sumy, Poltava, Mykolaiv, Kherson	www.valinor-in.com
13	Agroprodinvest	113 000	Zhytomur, Vinnytsya, Cherkasy, Poltava, Kirovograd, Dnipropetrovsk	No website
14	Agrain (DHC group)	110 900	Chernihiv, Kyiv, Kharkiv, Dnipropetrovsk, Poltava	No website
15	Druzhba Nova (Tveelingen Ukraine)	110 000	Chernihiv, Poltava, Sumy	www.druzhba-nova.com
16	Loture Corporation	100 000	Kharkiv, Lugansk, Sumy, Zhytomyr, Khmelnytskyi	www.loture.com
17	MCB Agricole Ukrzernoprom	95 000	Khmelnytskyi, Zhytomyr, Kyiv, Chernihiv, Poltava	www.uzp-agro.com.ua
18	Alpcot Agro	93 400	Ivano-Frankivsk, Ternopil, Lviv	www.alpcotagro.com
19	KSG Agro	84 000	Dnipropetrovsk, Kharkiv, Khmelnytskyi, Kherson	www.ksgagro.com
20	Glencore International	83 700	Kyiv, Vinnytsya, Odessa, Cherkasy, Chernivtsi	www.glencore.com
21	Industrial milk company	82 700	Poltava, Chernihiv, Sumy	www.imcmilk.com.ua
22	Nibulon	80 000	Zhytomyr, Vinnytsya, Khmelnytskyi, Cherkasy, Mykolaiv, Chernihiv, Sumy, Kharkiv, Poltava, Kyiv, Lugansk	www.nibulon.com
23	Svarog	75 000	Khmelnytskyi, Chernivtsi	www.svarog-agro.com
24	Harmelia	70 000	Kharkiv, Poltava	www.harmelia.com
25	Shakhtar Agrofirm (Zasyadko)	69 900	Donetsk, Kharkiv	www.zasyadko.net
26	Agroprogress	65 000	Chernihiv, Vinnytsya	No website

Rank	Company	Land bank hectares	Regions	Website
27	Agrotis (Donetskstal Group)	61 200	Donetsk	www.agrotis.donetsksteel.com
28	Inseco	60 000	Khmelnytskyi, Rivne	No website
29	Agrotrade Group	57 000	Kharkiv, Sumy, Poltava, Chernihiv	www.agrotrade.ua
30	Panda	55 200	Cherkasy	No website
31	Trigon Agri	52 000	Kharkiv, Kirovograd	www.trigonagri.com
32	UkrAgroCom	54 500	Kirovograd, Kyiv, Cherkasy, Mykolaiv, Vinnytsya, Zaporizhzhya	www.ukragrocom.com
33	AgroGeneration	50 000	Lviv, Zhytomyr, Ternopil, Sumy	www.agrogeneration.com
34	TAKO (Agrarian technological coy)	50 000	Kyiv, Zhytomyr	www.taco.ua
35	Agro-Region	50 000	Kyiv	No website
	Total (hectares)	**4 903 300**		

Sources: NOViROST research, Association "Ukrainian Agribusiness Club" (data based on information available from open public sources including company websites, Forbes Ukraine, latifundist.com, Bloomberg) (2013).

Note: Information on land banks is often not publicly or officially disclosed. This information may therefore not be completely accurate. There may also be fluctuations in the area of land "controlled" by some companies due to the short-term nature of lease agreements (e.g. in some instances land may be released back to the owners at relatively short notice).

Table 23: Ukraine: agricultural land banks of foreign-led investments

Rank	Company	Land bank hectares	Ownership	Website
1	NCH Capital	481 800	NCH Capital Fund	www.nchcapital.com
2	Ukrainian Agrarian Invest.	260 000	Renaissance Partners	www.rencap.com
3	Valars Group (Valinor)	119 400	Valars Group	www.valinor-in.com
4	MCB Agricole Ukrzernoprom	95 000	MCB Agricole	www.uzp-agro.com.ua
5	Alpcot Agro	93 400	Listed NASDAQ-First North	www.alpcotagro.com
6	Glencore	83 700	Glencore	www.glencore.com
7	Harmelia	70 000	SigmaBleyzer Southeast European Fund IV	www.harmelia.com
8	Trigon Agri	52 000	Listed NASDAQ-OMX	www.trigonagri.com
9	AgroGeneration	50 000	Listed Paris Alternext	www.agrogeneration.com
10	Agro-Region	50 000	East Capital Fund	www.agro-region.com
11	Grain Alliance	40 000	Claesson & Anderzén AB	www.grainalliance.com
12	Cygnet Agro	37 500	Talis Capital	www.taliscapital.com
13	Agro Invest Ukraine	30 000	MK Group (Serbia)	www.mkgroup.rs
14	Continental Farming Group	21 000	Listed London AIM	www.continentalfarmersgroup.com
15	Agro-Atlantic	10 000	American/Danish	www.kau.kiev.ua www.cormallagroholding.dk
16	Danosha (Axzon)	10 000	Axzon	www.axzon.eu www.danosha.com.ua
17	Grain Land Ukraine	8 000	Hamilton Farms	www.grainlandukraine.com
18	Magyar Farming	4 800	Magyar Farming	www.magyarfarming.co.uk
19	AGRANA Fruit	900	Agrana Group	www.agrana.ua
20	Danam Farms	230	Cormall Agro Holding A/S	www.danam.dk www.cormallagroholding.dk
	Total (hectares)	**1 517 730**		

Sources: NOViROST research; "Ukrainian Agribusiness Club" (data based on information available from open public sources including company websites, Forbes Ukraine, latifundist.com, Bloomberg) (2013).

Table 24: Land banks of locally controlled foreign listed firms with minority foreign shareholding

Rank	Company	Land bank hectares	Main activity	Ownership	Website
1	Kernel	330 000	Edible Oils	Listed Warsaw	www.kernel.ua
2	Mriya	295 000	Arable crops	Listed Frankfurt	www.mriya.net
3	MHP	280 000	Poultry	Listed London	www.mhp.com.ua
4	Astarta	245 000	Sugar	Listed Warsaw	www.astartaholding.com
5	Sintal	150 000	Arable crops	Listed Vienna	www.sintalagriculture.com
6	Agroton	150 000	Arable crops	Listed Warsaw	www.agroton.com.ua
7	KSG Agro	84 000	Arable crops	Listed Warsaw	www.ksgagro.com
8	Industrial Milk Company	82 700	Arable crops	Listed Warsaw	www.imcmilk.com.ua
	Total (hectares)	**1 616 700**			

Sources: NOViROST research; "Ukrainian Agribusiness Club" (data based on information available from open public sources including company websites, Forbes Ukraine, latifundist.com, Bloomberg) (2013).

partial interest rate subsidies, state financing against pledge of grain, partial reimbursement of insurance premiums, partial refunds on purchases of domestically manufactured farm equipment, and crop cultivation grants. However, in practice, these are reportedly rarely applied for by large agricultural enterprises because of the bureaucracy involved in the process.

Historical context to farmland structure and ownership

State and collective farms were officially dismantled in about 2000. Land distribution followed a similar process to the Russian Federation and farm property was divided among farm workers in the form of land shares ("pai") averaging about 4 hectares each. There are about 6.1 million pai holders and currently most of these owners lease their land to private agricultural enterprises.

According to state statistical data, there are currently about 4.5 million lease contracts covering about 17.3 million hectares. Approximately 80 percent of lease agreements are between three and 10 years in duration.[18]

Agro holding companies control approximately 5 million hectares, or 15 percent of arable land. There are at least two enterprises with land holdings exceeding 400 000 ha.

Investments

Table 23, Table 24 and Table 25 list agricultural enterprises with land banks of 50 000 hectares and larger, as well as agricultural land banks of foreign-led investments and those of locally controlled foreign listed firms with minority foreign shareholding.

Belarus

General overview

Primary agriculture in Belarus remains mostly under state control: citizens may own up to one hectare of agricultural land in a household plot, while foreign individuals and entities are not allowed to own or lease farmland. Belarus is self-sufficient in staple foods. Its location on the watershed of the Black and Baltic seas and outstanding logistical infrastructure make the country a potentially attractive venue for agricultural investment in the future. For now, however, there is no possibility of any meaningful private investment until further reforms of the agricultural sector and other larger issues have been addressed. Despite this, Belarus (58th) ranks well above the Russian Federation (112th) and Ukraine (137th) in the World Bank's Doing Business index (World Bank, 2012).

Overview of agriculture in Belarus

Belarus falls within one natural zone, temperate continental forest, and has a generally uniform landscape. Its soil is generally fertile and crops

18 State Land Agency of Ukraine (http://land.gov.ua) – data for first quarter of 2012.

Table 25: Key statistics for Belarus

Indicator	Amount
Population	USD9.5 million
GDP	USD55.1 billion
GDP per capita	USD5 820
Agricultural GDP	USD5.2 billion
Agricultural GDP per capita	USD553
Agriculture as % of GDP	9.5%
Agricultural % of labour employed	9.4%

Sources: CIA (2011); EastAgri. (2012).

Table 26: Total land and agricultural land

	Hectares	Share of total land (%)
Total land	**20 759 600**	
Agricultural land	8 874 000	42.7
Arable land	5 506 000	26.5
Orchards	121 700	0.6
Pastures	3 223 700	15.5
Irrigated land	131 000	0.6
Forests	7 912 400	38.1
Number of farms		See Table 27
Average farm size		See Table 27

Sources: CIA (2011); EastAgri (2012); NSC of the Republic of Belarus (2012).

Table 27: Distribution of agricultural land by user

Type of land user	Agricultural land (ha)	Arable land (ha)	Share of arable land (%)	Number of farms	Average size (ha)
Agricultural organizations	7 667 100	4 702 800	85.4	1 570	4 883
Private (peasant) farms	127 500	93 400	1.7	2337	54
Individual use*	902 400	666 500	12.1		
Total	**8 874 000**	**5 506 400**			

Source: NSC of the Republic of Belarus (2012).

Note: *Of the land in "individual use", 95 percent is classed as "private subsidiary plots for the construction and maintenance of dwelling houses" and 5 percent for "collective fruit and vegetable gardening, and summer house construction".

Figure 3: Map of Belarus

Source: UN Cartographic Section (January, 2004).

Table 28: Breakdown of major crops in Belarus by sown area

Crop	Hectares	Share (%)
Grains and legumes	2 672 000	46.2
Potatoes	345 000	6.0
Vegetables	73 000	1.2
Fiber flax	68 000	1.2
Sugar beet	101 000	1.7
Forage crops	2 189 000	37.9
Other crops	331 000	5.8
Total sown area	**922 861**	**100.0**

Source: NSC of the Republic of Belarus (2012).

Table 29: Comparative production of grains and legumes in four CIS countries, 2011

Country	Tonnes (millions)
the Russian Federation	93.9
Ukraine	56.7
Kazakhstan	27.0
Belarus	8.4

Source: NSC of the Republic of Belarus (2012).

Table 30: Comparative gross harvest of major crops, 1995 and 2011 (thousand tons)

Crop	1995	2011
Grains and legumes	5 502	8 375
Flax fibre	60	46
Sugar beet	1 172	4 485
Rapeseed	26	379
Potatoes	9 504	7 721
Vegetables	1 031	1 979
Meat	995	1 464
Milk	5 070	6 504

Source: NSC of the Republic of Belarus (2012).

Table 31: Types of organizations by legal structure

Type of organization	2006	2012	Change (%)
For-profit organization	1 900	1 564	(17.7)
Joint-stock company	136	507	272.8
Limited liability company	64	136	112.5
Superadded liability company	14	17	21.4
Unitary enterprise	578	511	(11.6)
Other forms/merged*	1 108	393	-
Non-profit organization	3	6	100.0
Total	**1 903**	**1 570**	**(17.5)**

Source: NSC of the Republic of Belarus (2012).

Note: *Includes organizations that have merged with one another.

vary according to zones: broadly speaking, the north is a flax-growing region; the centre leads in grain, vegetables and potatoes; and the south dominates in sugar beet. Belarus does not have an influential market position in any crop, although it ranks third in global production of flax fibre.

Belarus' major agricultural products are barley, rye, oats and wheat, as well as potatoes, flax, rapeseed and sugar beet. Grains and legumes (mainly barley and rye) account for 46 percent of the sown area and forage crops 38 percent. Potatoes and vegetables cover 7 percent of the sown area and industrial crops (sugar beet, flax and rapeseed) cover most of the remaining 9 percent. Meat production is mainly pork, beef and poultry. Crop production slightly outweighs livestock production, accounting for around 53 percent of gross agricultural output (Belarus National Statistics Committee, 2012).

In 2011, large farms accounted for 70.9 percent of gross agricultural output, household plots for 27.8 percent, and private (peasant) farms for only 1.3 percent (Belarus National Statistics Committee, 2012). As Belarus is self-sufficient in staple foods, agriculture is dependent largely on external trade. Table 29 shows the relatively small position of Belarus in regional production of grains and legumes.

Belarus has a negative population growth rate, and there is an ageing and declining rural population (Belarus Digest, 2012). The share of agriculture in employment has dropped from about 19 percent in the early 1990s to 9.9 percent at present.

Historical context to farmland structure and ownership

Belarus was one of the Soviet Union's most dynamic regions in terms of economic activity

(it had the highest national per capita income in the country). In addition, Belarus had the highest agricultural productivity. It accounted for 5.7 percent of gross agricultural output, yet only 1.7 percent of the total agricultural land (and 2.7 percent of arable land).[19]

Reforms have been slow and historical structures of land allocation remain largely intact: the state controls 85.4 percent of agricultural land,[20] households 12.1 percent and private farms just 1.7 percent (see Table 27). However, the share of private production has increased steadily to almost 30 percent of gross agricultural output (Belarus National Statistics Committee, 2012). Foreigners cannot own or lease farmland.

The Land Code defines two forms of land ownership: state and private. The latter is limited and includes only personal plots. Large farms cannot be privately owned. Land belonging to collective, state and peasant farms, when transferred into private hands, remains in state ownership (individual land shares do not exist in Belarus). The possibility for voluntary reform and choice of farming system is granted to collective and state farms. Peasant farms have the right to freehold possession of plots, but of limited sizes (no greater than 50 hectares, including personal land) (Giovarelli and Bledsoe, 2001).

There has been steady movement towards commercialization of farm structures (joint-stock companies) in Belarus, while the number of individual large farming enterprises has also fallen due to mergers. Table 31 illustrates these trends.

Investments

The absence of genuine, market-oriented restructuring of large farm enterprises has prevented investment of private capital in primary agriculture. There is very little or no prospect of meaningful private investment happening until reforms have been undertaken to enable private ownership or lease of farmland.

19 These data were recorded during the period 1986–1990 (Giovarelli and Bledsoe, 2001).

20 However, continued state support (and subsidies) meant that Belarus experienced the lowest rate of land abandonment following the end of the Soviet Union, at 10 percent, compared with 30 percent in Russia (IAMO, 2012).

Kazakhstan

General overview

In Kazakhstan, large-scale investments in primary agriculture are concentrated in the three northern regions of the country, which therefore form the focus of this section.[21]

While farmland can be purchased in Kazakhstan, some 84 percent is leased from the state, generally on 49-year leases and attractive rental terms. Lease processes are apparently not fully transparent and are exposed to political influences. Despite this, investment has grown significantly and cultivated land in the northern regions has expanded by over 50 percent since 2000.

Agricultural enterprises control around 61 percent of arable land and produce 69 percent of grain. However, there is diversity among farm categories, and private farms and households together contribute over 70 percent of gross agricultural output.[22] There are some 20 agro-holdings that dominate the grains sector, although disclosure about activities, particularly land holdings, is generally very sparse. In recent years, relatively strong wheat prices have enabled most large agro-holdings to re-capitalize and modernize their assets.

There is only limited private equity fund investment in primary agriculture in Kazakhstan. The only substantial foreign investment in primary agriculture is EBRD's investment in Kazexportastyk.

There are over 6 000 agricultural enterprises, which control an average of some 6 800 hectares of land. Collectively, they account for around 47 percent of agricultural land, but 61.4 percent of arable land. There are three mega agro-holdings, which have about 1 million hectares each.[23]

21 These regions comprise Akmola (4 919 300 hectares), Kostanai (5 135 600 hectares) and Northern Kazakhstan (4 576 500 hectares). Together, they total 14 631 000 hectares or 68 percent of the total sown area of 21 494 800 hectares (Kazakh State Statistics Committee, 2012).

22 Gross agricultural output in 2011 (Kazakh State Statistics Committee, 2012).

23 The mega agro-holdings are Alibi-Agro, Kazexportastyk, and Ivolga Holdings. Ivolga Holdings is probably the largest primary agricultural producer in the world (in terms of total area cultivated). The group reportedly controls about 1.5 million hectares of agricultural land in Kazakhstan and Russia. Table 36 provides further details of the largest agro-holdings in Kazakhstan.

Table 32: Key statistics for Kazakhstan

Indicator	Amount
Population	16.5 million
GDP	USD188 billion
GDP per capita	USD11 353
Classified by the World Bank as upper middle income	
Agricultural GDP	USD9.8 billion
Agricultural GDP per capita	USD590
Agriculture as % of GDP	5.2%
Agricultural % of labour employed	25.9%

Sources: CIA (2011); EastAgri (2012); World Bank (2012).

Note: GDP at purchasing power parity.

Table 33: Total land and agricultural land

	Hectares	Share of total land (%)
Total land	**272 490 000**	
Agricultural land	90 199 000	33.1
Arable land	24 033 600	8.8
Orchards		Included in arable land
Pastures	63 257 400	23.2
Irrigated land	3 556 000	1.3
Forests	3 400 000	1.2
Number of farms	188 616	
Average farm size	See analysis in table below	

Sources: CIA (2011); EastAgri (2012); Kazakh State Statistics Committee (2012).

Table 34: Farmland by usage in Kazakhstan

Land use	Hectares	Share of agricultural land (%)
Arable	24 033 600	26.6
Pasture	63 257 400	70.0
Total	**90 199 100**	

Source: Kazakh State Statistics Committee (2012).

Table 35: Distribution of agricultural land by user

Type of land user	Agricultural land (ha)	Arable land (ha)	Share of arable land (%)	Number of farms	Average size (ha)
Agricultural enterprises	42 321 100	14 752 700	61.4	6 197	6 829
Private (peasant) farms	47 576 600*	9 061 900	37.7	182 419	261
Household plots	301 400	219 000 **	0.9		
Total	**90 100 100**	**24 033 600**			

Source: Kazakh State Statistics Committee (2012).

Notes: *While the majority of land is listed as "private (peasant) farms" most of this figure comprises "hayfields and pastures". ** Land in household plots (or "individual use") comprises "personal subsidiary plots" (128 800 hectares) and collective and personal gardens and kitchen gardens (90 200 hectares).

Table 36: Area sown by enterprises and private farms (hectares)

	2007	2008	2009	2010	2011	Share in 2011 (%)
Agricultural enterprises	11 694 300	12 428 200	13 216 900	13 105 300	12 894 300	62
Private farms	6 987 900	7 432 400	7 952 100	8 075 400	7 935 400	38
Total sown area	**18 682 200**	**19 860 600**	**21 169 000**	**21 180 700**	**20 829 700**	**100**

Source: Kazakh State Statistics Committee (2012).

Figure 4: Map of Kazakhstan

Source: UN Cartographic Section (January, 2004).

Private farms (or peasant farms) control most of the agricultural land, although most of this consists of "hayfields and pastures".

Agricultural enterprises have slightly increased their share of total cultivated area over the past five years and currently comprise 62 percent of area cultivated (Table 36).

Overview of agriculture in Kazakhstan

Farmland in Kazakhstan is mainly owned by the state and operated by private lessees under long-term leases (49 years). Most large-scale arable cropping enterprises in Kazakhstan are located in the north of the country.

Crop production in Kazakhstan has risen strongly in recent years: between 2000 and 2010 cultivated area in the north increased by some 50 percent.[24] During the same period, agricultural value added in the region doubled and investments in farming operations rose five-fold.[25] Most of this was due to improved agronomy practices and greater use of modern machinery and equipment, as well as a prolonged period of higher grain prices (which enabled these

24 Some 80 percent of Kazakhstan's wheat is produced in the three northern regions of Akmola, Kostanai and North Kazakhstan.

25 These insights emerge from a study by the Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO, 2011).

investments). Current land under crops in the north represents around 80 percent of the area cultivated in 1990.

Kazakhstan is among the world's top 10 wheat producers and accounts for some 5 percent of global wheat exports.[26] Together with Canada, it is one of the two largest global producers of hard wheat.[27] Crop production comprises 58 percent of gross agricultural output and livestock 42 percent.

In the northern regions, grains are the predominant crops on all categories of farms. In 2011, agricultural enterprises produced 18 558 000 tonnes of grain (69 percent of the total crop) and private farms 8 367 000 tonnes (31 percent). While oilseed cultivation has almost doubled in the past five years, it still accounts for only around 8-9 percent (or 1.9 million hectares) of the country's total crop area of 21.4 million hectares (Ministry of Agriculture projection for 2013). Cotton is grown only in southern Kazakhstan and mostly on smaller private farms.

Beef production is a government priority and Kazakhstan plans to use local feeds to become a net exporter by 2016. Consequently, there are significant subsidies and concessional loans available for importing pedigree cattle, installing feedlots and other investment needs.

There are three categories of agricultural producer:

- agricultural enterprises, which are typically larger than 5 000 hectares and, as an indicator of production activities, produce 69 percent of grains;
- private (peasant)[28] farms, over 95 percent of which are smaller than 1 000 hectares, accounting for about 30 percent of grains; and
- household plots, which grow mostly vegetables, potatoes and livestock, and produce less than 1 percent of grains.

An agro-holding typically operates as an "umbrella" for several individual enterprises, providing operating capital and marketing channels for commodities produced on farms. In Kostanai Region, the top grain-producing area of its kind in Kazakhstan, the four largest holdings control over 40 percent of the agricultural area. In North Kazakhstan Region, some 20 agro-holdings control 80 percent of the sown area (USDA, 2010). Agro-holdings are mostly domestically owned and the larger ones have extensive storage and logistics facilities. In major grain-producing regions, there is generally a strong interdependence between the three categories of farms.

Family farms (officially categorized as private farms) play an important role in agriculture in Kazakhstan, which is somewhat uncommon in the CIS, particularly compared with the Russian Federation and Ukraine, the other two major regional producers. Recent work suggests that family farms are almost as productive as larger agricultural enterprises, although they lag behind in capital intensity (Petrick *et al.*, 2012).

Historical context to farmland structure and ownership

Large-scale crop production in northern Kazakhstan is due mostly to the "Virgin Lands" campaign developed by the Soviet Union in the 1950s, when vast areas of previously untouched land were developed for growing crops.[29] In line with the socialist ideology, farming was based on an industrialized model of agriculture.

As the indigenous inhabitants of northern Kazakhstan have traditionally led a nomadic pastoral existence, there is no widespread tradition of individual land use or ownership there. As such, smallholder farming has not been the default land rights situation, unlike in most of Central and Eastern Europe, with the result that property rights have been weak and disputable (Petrick *et al.*, 2012). The emergence of large agricultural enterprises and private farms has stabilized the situation and created an environment more conducive to investment. However, while the current tenure system

26 As an indication, grain exports in the 2012/13 marketing year are forecast at approximately 7 million tonnes of wheat and 200 000 tonnes of barley. Traditional markets include Afghanistan, Central Asian countries and Iran, and markets in North Africa and Europe (USDA, 2012).

27 Kazakhstan was the ninth largest wheat producer in the world in 2011–2012 (USDA).

28 "Peasant farm" is an official classification denoting a private or family farm. As noted in Table 35, the average size of a private (peasant) farms is 261 hectares.

29 Four hundred and ninety-two state farms were established with an average size of 25 000–30 000 hectares (Petrick *et al.*, 2012).

Table 37: Gross agricultural output by farm sector, 2011

Sector	GAO KZT million	Share of total (%)
Agricultural enterprises	671 018	29.4
Private (peasant) farms	1 028 600	45.0
Household plots	586 424	25.6
Total	**2 286 042**	

Source: Kazakh State Statistics Committee (2012).

lacks transparency and is exposed to political influences, it has shown that investment in agriculture can thrive, even in the absence of ideal property rights (Petrick *et al.*, 2012). The large-scale industrialized model of farming inherited from the Soviet Union has been neither preserved nor dismantled completely (unlike in other socialist countries). Rather, it has evolved into the current structure consisting of private farms, household plots and large agricultural enterprises (or agro-holdings). All three categories contribute significantly to gross agricultural output, as Table 37 highlights.

Farmland market

While private ownership of farmland is permitted in Kazakhstan, only around 1 percent of farmland has been purchased and the majority of land, some 84 percent, is leased from the state at apparently attractive rental rates (Petrick *et al.*, 2012). Secondary leases of state land are prohibited, and the authorities have the right to take back land that has not been farmed for consecutive seasons.

Farmland reforms in 2003 outlawed sub-leasing of small plots, instead enabling land plots to be added to the capital stock of an agricultural enterprise.[30] In such cases, shareholders (plot owners) receive a dividend on capital, rather than rental payments. The size of dividend depends on profitability and the good faith of the farm manager, as rural residents usually have little or no insight into business records and little bargaining power. Table 38 provides a breakdown of farm sizes for agricultural enterprises and private farms.

Investments

There is relatively very little foreign investment in primary agriculture in Kazakhstan. A prominent exception is the USD45 million investment made by the European Bank for Reconstruction and Development (EBRD) in exchange for 13 percent of Kazexportastyk, a vertically integrated grains producer in March 2012 (Gorst, 2012). The company's bonds are listed on the Kazakhstan Stock Exchange (KASE).

Investors who have announced intentions to seek opportunities in agriculture in Kazakhstan include the VTB agribusiness investment initiative (*the Russian Federation Today*, 2011) and the Islamic Development Bank. In June 2012, the latter launched a USD600 million agribusiness fund to invest in food and agribusiness in several Islamic countries, including Kazakhstan (Paxton, 2012). However, it is not clear whether the fund will consider investments in primary agriculture.

The "King Abdullah Initiative for Saudi Agricultural Investment Abroad" is an initiative being developed to provide state funding for private Saudi companies to invest in agribusiness and food production overseas. The primary objective is to enhance food security in Saudi Arabia. Target countries in the CIS include Kazakhstan and Ukraine (Kingdom of Saudi Arabia Ministry of Agriculture, 2010).[31]

30 According to Article 170 of the Land Code, passed in 2003, land shares were to be returned to the government on 1 January 2004 if the owners did not purchase and transform the land share into a physical plot, to establish a family farm, or transfer it into a corporate farm by that date. The aim was to abolish share privatization and concentrate ownership and management in large farms, thus avoiding the breakup of farms through land distribution (Wandel, 2009).

31 This Initiative is intended to support Saudi individuals and firms to invest in food and agriculture abroad and is aimed at securing food supply sources for Saudi Arabia. A state company (Agriculture and Food Investment Company (Agroinvest)) has been formed to work with Saudi companies and their foreign counterparts. The proposal envisages developing off-take agreements with the Saudi government to purchase crops produced by Saudi investors overseas. Crops targeted are rice, corn, barley, wheat, sugar and forage crops. Investments are also envisaged in poultry, fish and livestock. Most of the focus has so far been in African countries including Egypt, Mali, Ethiopia and Sudan (The Chamber, 2012; Standard Bank, 2012).

Table 38: Breakdown of farm sizes

Agricultural enterprises	
Size of agricultural enterprise	Share of total (%)
500-10 000 hectares	37.9
10 000-20 000 hectares	26.2
Over 20 000 hectares	33.7

Private farms	
Size of private farm	Share of total (%)
200-500 hectares	34.1
500-1 000 hectares	30.7
Over 1 000 hectares	8.3

Source: Kazakh State Statistics Committee (2012).

Table 39: Kazakhstan: Agricultural land banks of large agro-holdings

#	Company	Land Bank hectares	Cultivated hectares	Ownership	Website
1	Alibi-Agro	~ 1 0 mln	Not known.	Private	No website.
2	Kazexportastyk	~ 1 0 mln	700 000	Private EBRD 7%	www.kazexportastyk.kz
3	Ivolga	~ 800 000	600 000	Private	www.ivolga.kz www.orenivolga.ru www.ivolga-centr.ru
4	Agrocenter Astana	~ 700 000	400 000	Private	www.agrocenter.kz
5	Atameken-Agro	392 431	296 122	Private	www.atameken-agro.com
6	APK-Invest	Not disclosed	Not disclosed	Private	No website.
7	Bogvi	~ 400 000	280 000	Private	No website.
8	Karasu	410 940	225 100	Private	www.karasu.kz
9	Nastyusha	~ 200 000	Not disclosed	Private	www.nastyusha.ru
10	Grain Industry	100 000	100 000	Private	www.gi.kz www.korona.kz
11	Batt-Agro	Not disclosed	Not disclosed	Private	www.batt.kz
12	Tsesna Astyk	Not disclosed	40 000	Private	www.tsesna.kz www.concern.kz
	Total	**> 60 million**			

Sources: This information has been sourced from company websites (where disclosed), media research and, where possible, through personal communications. In most cases, land bank data are not available on company websites (in instances where company websites actually exist). As far as could be ascertained, there is no listing of large farmland operators in government or industry sources or at least in sources available in the public domain. The information in this table is therefore not comprehensive and should be regarded as indicative only.

Poland

General overview

The only dedicated private equity fund investing in farmland in Poland is the Rabo Farm Europe Fund, which owns farmland and leases it to third-party farming operators. Another fund, Altima One World Agriculture Fund, is invested in Spearhead International, a privately held farming company active in Poland and several other European countries. Foreign private and strategic investors, including vertically integrated pork producers, have also invested in farmland. However, overall investment (control) by foreign investors accounts for no more than 1 percent of Poland's agricultural land.

Under the terms of Poland's accession treaty with the European Union, foreign individuals cannot own farmland, although this restriction expires in 2016. In addition, further limitations were recently introduced that require foreign owners to return 30 percent of the land leased as a requirement for continuing with current ownership and/or lease arrangements. The highly fragmented nature of farmland ownership impedes productivity improvements. Almost 88 percent of farms are 15 or fewer hectares in size. At the same time, the continuing privatization of state farmland offers scope for investments on a viable scale. Since Poland's accession to the European Union, crop yields have improved significantly, which is due partially to the high levels of absorption of farm support payments (and applying these proceeds to improved farming methods). Farm subsidies have also affected valuations and placed a floor under rental values. In some instances, average farmland prices have more than tripled in nominal terms since 2004.

Overview of agriculture in Poland

Agriculture remains among the least productive sectors of the Polish economy, employing 17 percent of the workforce while contributing just 3 percent of the gross domestic product (GDP).[32] Crop production accounts for 56 percent of gross agricultural output and livestock production 44 percent.

Poland is a net exporter of food products, including confectionery, processed fruit and vegetables, meat and dairy products. However, local processors rely on imports to supplement local supplies of wheat, feed grains, vegetable oil and protein meals, which are generally insufficient to meet domestic demand. Attempts to increase domestic feed-grain production are hampered by the short growing season, poor soil and the small size of farms.[33]

Poland's agricultural policy is consistent with the EU's Common Agricultural Policy (CAP), and the single payments form a significant part of farm income.[34] This has important consequences in the farmland market, where the subsidies represent a relatively attractive return from farmland.

Since EU accession in 2004, crop yields have improved due to greater fertilizer and machinery use, facilitated by high absorption levels of EU subsidies and the change from small-scale to larger high-tech farming businesses (CFG, 2011). For example, between 2000 and 2011, average wheat yields increased from 3.23 to 4.13 tonnes per hectare (Poland Central Statistical Office, 2011).

Poland has over 2 million farms, of which some 800 000 operate on a fully commercial basis and the remainder are subsistence or semi-subsistence operations. Most farmers obtain additional income from work elsewhere or farm rentals and pensions (USDA, 2003).

Historical context to farmland structure and ownership

Within eastern and central Europe, the way in which Polish farms have developed has been unique. Farm sizes within the country vary significantly, largely dependent on history within the region. In general, farms in the north and west were influenced by Germany and Prussia, while those in the east were influenced by the Austria-Hungarian style or the Russian agricultural model of small-scale family farms, which also

32 Estimate for 2011 (Background Note: Poland, 22 March 2012. www.state.gov).

33 www.state.gov

34 By some estimates, payments form almost half of farm income. The Single Area Payment Scheme (SAPS) was designed to enable the new member states that joined the European Union in 2004 and 2007 to support farmers' income. It is currently applied in 10 EU states (Poland, Czech Republic, Slovakia, Hungary, Estonia, Latvia, Lithuania, Slovenia, Bulgaria and Romania), and the related expenditure amounted to EUR5 billion in 2011.

Table 40: Key statistics for Poland

Indicator	Amount
Population	38 million
GDP	USD514.5 billion
GDP per capita	USD13 462
Classified by the World Bank as high income: OECD	
Agricultural GDP	USD18.5 billion
Agricultural GDP per capita	USD485
Agriculture as % of GDP	3.6%
Agricultural % of labour employed	17.4%

Sources: EastAgri (2012); World Bank (2012).

Table 41: Total land and agricultural land

	Hectares	Share of total land (%)
Total land	**31 268 000**	
Agricultural land	16 119 000	51.6
Arable land	12 939 000	41.4
Orchards	400 000	1.3
Pastures	4 048 500	12.9
Irrigated land	116 000	0.4
Forests	9 351 000	29.9
Number of farms	> 2 000 000	
Average farm size	8.63 hectares	

Sources: EastAgri (2012); Poland Central Statistical Office (2011).

Note: the public sector accounts for 2.9 percent of agricultural land.

developed in the south of Poland. Today, land patterns remain largely the same, with smaller farms in the south and east and larger farms in the north and west.

Significant transformations occurred after the Second World War, which brought dramatic changes in population, land distribution and agricultural policy. Some 500 000 new farms were created on the so-called "recovered territories" in the north and west.

While there was a push to collectivize farms after the war, Poland was the only country of the former Eastern Bloc where large-scale collectivization was a failure. At the peak, collective farms accounted for less than 10 percent of its arable land.

The traditional structure of small plots and farms was thus left overwhelmingly intact and most of Poland's land remained in private hands throughout the communist period. As such, the country has enjoyed a long and relatively uninterrupted tradition of privately held farmland (USDA, 2003). Private farms have remained small and labour-intensive, and individual farms often comprise parcels of land scattered across considerable distances.

At the end of the Communist era, after being deprived of state support, most collective farms went bankrupt and were liquidated. Their assets were taken over by the newly formed Agricultural Property Agency (APA) of the Treasury, a government body set up to manage state assets.[35]

35 In 1989, the private sector controlled 76 percent of farmland, state farms 18.8 percent, and collective farms 3.8 percent. The private sector provided 79 percent of GAO.

Figure 5: Map of Poland

Source: UN Cartographic Section (January, 2004).

Current structure of farmland management and ownership

Foreign ownership of farmland (including through companies directly or indirectly controlled by foreigners) is currently restricted by a derogation[36] negotiated as part of Poland's accession treaty with the European Union. It expires on 1 May 2016.

A law passed in September 2011 affects leaseholds of state agricultural land held by foreigners (Agrimoney.com, 2011b). It allows the Agricultural Land Agency to oblige foreigners holding more than 300 hectares to return 30 percent of the land leased in exchange for the right to buy the remainder. The practical implications of the law remain to be seen (Hensen, 2011).

One of the major challenges for agriculture in Poland is the significant fragmentation of farmland, as most small agricultural holdings are fundamentally unviable. It is a government priority to address this issue by "re-parcelling" land, which involves selling off some 1.8 million hectares currently belonging to the APA.[37] This is expected to increase the average farm size slightly over time.

The average size of farms over 1 hectare is just 8.3 hectares (up from an average of 7.2 hectares in 2000).[38] There are around 1.7 million agricultural holdings over 1 hectare in size and around a further 975 000 holdings of less than 1 hectare.[39]

36 In EU terms, derogation implies that a rule does not bind a country. There are derogations from parts of the treaties for certain countries.

37 The Agricultural Property Agency (ANR) is a state institution and successor to the Agricultural Property Agency of the State Treasury (AWRSP). The ANR continues the process of restructuring and privatization of the treasury's agricultural property, initiated by the AWRSP.

38 In comparison, the average farm size in the United States is 200 hectares. The average EU farm is 18.4 hectares, but size varies widely, from 4.3 hectares in Greece to about 69 hectares in the United Kingdom (see also Poland Central Statistical Office, 2011).

39 The definition of an "agricultural holding" in Poland is relatively very small, with "at least 0.1 hectare of total agricultural area plus at least 1 head of cattle and/or 5 pigs" (or various other numbers and combinations of livestock) (Eurostat, 2008).

Table 42: Private farms exceeding 1 hectare of agricultural land

Farm size (ha)	Share of private farms (%)	Number of private farms	Average farm size within group (ha)
1 to 2	23.7	391 800	1.4
2 to 5	34.1	563 500	3.2
5 to 10	20.7	341 800	7.1
10 to 15	9.6	158 900	12.1
15 and over	11.9	195 700	35.5
Total	**100**	**1 651 700**	**8.3**

Source: Poland Central Statistical Office (2012).

Note: Over 88 percent of private farms are smaller than 15 hectares. The average farm size is 8.3 hectares. The average size of farms over 15 hectares is 35.5 hectares.

The largest average sizes are in the northern and western provinces (around 24 hectares per holding) and the smallest in the southern provinces (around 3.5 hectares per holding). In addition to the small size, efficiencies are further affected by the fragmentation of owned land. A typical farmer may have several (two to six) tiny plots scattered around the community (USDA, 2003).

At the same time, there are larger farms, primarily in the west, ranging from 30 to 100 hectares and larger. Cereal production occurs mostly in northwestern, central and northeastern regions, which are also the focus of large-scale investment.

Land prices have increased significantly, mostly after Poland's accession to the European Union and the commencement of EU farm subsidies, which underpin the increase in land values.[40] This dynamic forms a major part of the valuation of farmland and has an impact on its liquidity. Subsidies also encourage small farmers to hold on to land and lease it to other parties, rather than sell the land to neighbours (and in that way facilitate consolidation).

Government and farmland privatization

According to the APA, there are around 1.85 million hectares of land in the Agricultural Property Stock of the Treasury, of which some 1.38 million hectares are leased, about 303 000 hectares remain to be allocated, and around 100 000 hectares are subject to other forms of temporary allocation.[41] The largest parts of the treasury stock are in the northern and western regions, especially in Western Pomerania (359 400 hectares), Greater Poland (260 700 hectares), Lower Silesia (247 500 hectares), and Warmia and Masuria (220 500 hectares).

Agricultural land prices are increasing. In the third quarter of 2012, the average price of agricultural land sold by the APA was PLN20, 557 (USD6 621) per hectare. This represents an increase of 20 percent over the previous year, although part of the rise was a result of a greater proportion of sales in high-quality land regions.

Foreign investment in farming and farmland

Foreigners control a relatively small percentage of total agricultural land in Poland (one estimate puts this at 1-2 percent of total arable land, or at most 1 percent of total agricultural land).[42] Freehold ownership is a small percentage of this number, with the balance being leased from private landholders or the state. The only major investment funds invested in primary agriculture in Poland are the Rabo Farm Europe Fund, which invests owns and rents farmland, and the Altima One World Agriculture Fund, which has invested in Spearhead International.

Investments

The only fund actively making direct investments in farmland in Poland is the Rabo Farm Europe

40 Polish farmers currently receive over EUR2.0 billion a year in farm payments (www.europa.eu).

41 Agricultural Property Agency – land status as of 30 September 2012.

42 Personal communications.

Table 43: Examples of significant foreign investors in farmland in Poland

Investor	Land bank (ha)	Land bank status	Ownership	Source of information
Spearhead International	29 800	Leasehold	Private	www.spearheadinternational.com
Dangro Invest	19 968	15 682 ha owned, 4 286 ha leased	Private	www.dangroinvest.com
Poldanor	15 000	Leasehold	Axzon Group	www.poldanor.com.pl
Rolnyvik	6 705	Owned	Kinnevik	www.kinnevik.com
Continental Farming Group	2 400	1 600 ha owned, 1 100 ha leased	Listed company, London/Dublin	www.continentalfarmersgroup.com
Total	**73 873**			
Others				
Rabo Farm Europe Fund	Undisclosed	Owned	Fund	Not publicly disclosed
AgriPlus*	Undisclosed	Unknown	Murphy Brown Group	www.agriplus.pl
Other private farmers	>100 000	Undisclosed, mostly leased		Estimate from media And interview sources

Sources: Company websites and media research.

Notes: *AgriPlus, a leading pig producer in Poland, is a part of the Murphy Brown Group. AgriPlus produces crops in three regions of Poland: Warminsko-Mazurskie, Wielkopolskie and Zachodniopomorskie. Pig production accounts for 2.5 percent of total production in Poland (Agri Plus, n.d.). **These are private farmers mostly of Danish, Dutch, German and Swedish origin. A study in 2005 indicated that foreign farmers had purchased around 35 000 hectares (Banski, 2011).

Fund,[43] which is domiciled in the Netherlands. The fund target size is EUR315 million. The fund focuses on Central and Eastern European countries within the European Union. Its investment model is to buy land and lease it to specialized farming operators. In exceptional instances, the fund may take operational control of the land. Returns are targeted from rentals on farmland and farmland value appreciation. The fund also endeavours to achieve wider and sustainable economic benefits.[44]

Rabo Farm views the fund as a catalyst for positive change in farmland restructuring and management. There is strong emphasis on creating social and environmental benefits, as well as upholding high ethical and business standards, including compliance with the Principles for Responsible Investment in Farmland. Individual investments range between EUR3 million and EUR5 million, and some are expected to reach EUR40-50 million over several years. The focus is predominantly on annual arable crops.

Fund objectives include the preservation of wealth (inflation hedge) and income returns from leasing the farmland. A strong emphasis is placed on gains from improving the inherent economic value of the land (rather than seeking gains only from the scarcity value of the land, for example). The fund has a long-term horizon of "approximately 10 to 15 years". Exit options include sales of individual farms to existing leaseholders and/or other investors, or via an IPO or a sale to a strategic investor or another fund.

The Rabo Farm Europe Fund views the participation of IFIs in funds investing in farmland as a potentially very positive development. It believes that IFIs would raise the profile and qualities of the asset class as an investment, and thus encourage the entry of other institutional investors. IFIs would also help to articulate the reform agenda, which might include aspects like

43 Altima One World Agriculture Fund is an investor in Spearhead International (2012), a European farming group active in Poland. Spearhead operates through local subsidiaries in Slovakia (3 700 hectares), the United Kingdom (4 800 hectares), Romania (17 800 hectares), the Czech Republic (22 000 hectares) and Poland (29 800 hectares).

44 The Rabo Farm Europe Fund recently concluded a joint venture with Continental Farmers Group to manage 1 200 hectares of farmland in Poland on a profit-sharing basis (Continental Farmers Group, 2012).

improved land ownership rights and improved lending to agriculture and, where needed, aspects of agricultural policy reform.

Romania

General overview

Romania is one of the most favoured destinations for foreign investment in primary agriculture in CEE. There are at least four private equity funds that have committed to farmland. Fund investments total an estimated USD100-120 million at present and account for some 60 000 hectares, or 0.4 percent of total agricultural land in Romania.

Romania attracts a greater diversity of investors to its primary agricultural sector than any other new EU accession country. Recent reports attributed to the Ministry of Agriculture note that foreign investors have bought over 700 000 hectares of farmland, which represents some 8 percent of the arable land or 5.2 percent of total agricultural land. While no specific data are available, strategic (vertically integrated) and individual investors appear to account for most of the acquisitions.

There are no restrictions on foreign investors buying land, provided that they do so through a Romania-registered company. The agricultural land market becomes fully liberalized on 1 January 2014 after which EU foreign individuals will be able to own farmland.

At the same time, Romania is the most fragmented of all EU countries with 4.2 million agricultural holdings and an overall average size of 3.5 hectares (or 2 hectares for individual holdings). Romania has the highest proportion of subsistence farms and also ranks last in terms of the average economic size of its agricultural holdings.[45] Key to further institutional investment will be the country's ability to develop consolidated tracts of farmland.

The agricultural census conducted in 2010 revealed that the average utilized agricultural area (UAA) per agricultural holding had increased slightly (since 2002), although this trend has had only a small impact, as holdings under 1 hectare still control around half of the agricultural land. Around 80 percent of farms can be classified as subsistence holdings[46] and about half of these holdings are too small to qualify for EU support payments (Anghel, 2012), being smaller than one European Standard Unit (ESU).[47]

Overview of agriculture in Romania

Romania has a relatively high percentage of arable land (39.5 percent) and is among the top 15 in this categorization in the world.[48] The country is suited to a variety of farming systems, and given the quality of the soils, particularly the black earth soil found on the plains, it has the potential to be a significant producer of cereals and irrigated field vegetables. Romania also produces dairy and other livestock products, and has wine production on the slopes of the Carpathians, and fruit and vegetable production on the Danube. Around 70 percent of gross agricultural output is derived from crop production and the remainder is from livestock production (Romanian National Institute of Statistics, 2012).

Romania can be divided into three major agro-climatic zones:

- the plains region comprising the plain in the southeast of the country and the western plain (where most institutional investments are located);
- the hilly zone around the mountains; and
- the mountain zone.

Individual household farms dominate the mountain zone, while a mixture of state farms and private

45 Economic size is measured in economic standard units (ESUs). In 2007 this was an average of 1.0 ESU (Popescu, 2011).

46 Only 8 percent of agricultural holdings (or 300 000 holdings) are connected to markets (Barbu, 2011).

47 A European size unit (ESU) is a standard gross margin of EUR1 200 used to express the economic size of an agricultural holding or farm. For each activity on a farm (e.g. wheat production, dairy cows, etc.), the standard gross margin (SGM) is estimated based on the area used for the particular activity (or the number of heads of livestock) and a regional coefficient. The sum of all such margins derived from activities on a particular farm is its economic size, which is then expressed in European size units (by dividing the total SGM in euro by 1 200, thus converting it to ESU) (Eurostat, 2013). By comparison, in Poland, which is similarly fragmented, 44 percent of holdings are at least one ESU in size.

48 Arable land here is taken as a percentage of total land in the country.

Table 44: Key statistics for Romania

Indicator	Amount
Population	21.4 million
GDP	USD179.8 billion
GDP per capita	USD8 406
Classified by the World Bank as upper middle income	
Agricultural GDP	USD14.2 billion
Agricultural GDP per capita	USD664
Agriculture as % of GDP	7.9%
Agricultural % of labour employed	30.0%

Sources: CIA (2011), World Bank (2012).

Table 45: Total land and agricultural land

	Hectares	Share of total land (%)
Total land	**23 839 000**	
Agricultural land	13 523 000	56.7
Arable land and permanent crops	9 405 000	39.5
Arable land	8 789 000	36.9
Orchards and vineyards	412 000	1.7
Pastures	3 155 000	13.2
Irrigated land	3 157 000	13.2
Forests	6 380 000	26.7
Number of agricultural holdings*	3.9 million	
Average size of holding	3. 5 ha	

Sources: EastAgri (2012); FAO (2012) (forest land); Romanian National Institute of Statistics (2010) (number of holdings).

Note: This number represents total agricultural holdings, some 99.2 percent of which are individual ones. The average size for individual holdings is around 2 hectares, while for companies and associations it is 190.8 hectares. The overall average holding size is 3.45 hectares.

Table 46: Structure of agricultural holdings by size (2010)

Farm size (ha)	Number of farms	Share of total farms	Area (ha)	Share of total agricultural land (%)	Average size of farm (ha)
1 to 10	1 087 853	93.7%	3 000 720	31.25	2.95
10 to 100	61 182	5.3%	1 580 530	16.47	25.80
Over 100	11 994	1.0%	5 018 822	52.28	418.40
Total	**1 161 029**	**100%**	**9 600 073**	**100**	**8.83**

Source: Barbu (2011) quoting APIA data.

Note: These data exclude around 3 million tiny agricultural holdings, which are smaller than one ESU and do not therefore qualify for EU support.

Table 47: Structure of agricultural holdings by ownership structure (2009)

Size of farm (hectares)	Number of holdings	Individual	Legal entity (%)
Less than 20	837 900	99.8%	0.2
20 to 50	14 900	94.2%	5.8
50 to 100	4 500	76.2%	23.8
Over 100	9 400	25.4%	74.6
Total – all farms	**866 700**	**98.7%**	**1.3**

Source: Eurostat (2007).

Table 48: Number and percentage of subsistence farms (farms below 1 ESU in size)

Country	Number of farms < 1 ESU	Share (%)
Bulgaria	416 550	76.1
Poland	1 393 760	52.8
Romania	3 020 180	78.0
EU-27	6 660 710	46.6

Source: Eurostat (in Popescu, 2011).

farms is common in the two first zones. As noted above, the overwhelming majority of agricultural holdings are very small, and many are made up of 3-5 parcels of land. Consequently, most of these holdings have been described as representing not much more than shelter for the poor, with scarce assets, low productivity and production that seldom reaches markets (Cionga and Luca, 2008). The agricultural sector plays an even more important social buffer role[49] in Romania than it does in other recent EU accession countries[50] (Romania has the highest share of semi-subsistence farms in the European Union and the lowest share of commercial farms (Popescu, 2011).

Historical context to farmland structure and ownership

Romania had a particularly high proportion of collectivized agriculture and over 90 percent of agricultural land was included in collective structures. Since the fall of Communism in 1989, Romania has gone through a period of restitution, where citizens can claim rights to land and property previously confiscated. This has led to a fragmented land system, with large blocks of consolidated freehold land being scarce.

Most holdings operate at subsistence level with a very low level of competitiveness. Romania is also the country most reliant on farming and has the highest number of farmers in the European Union. Agriculture employs 30 percent of labour but contributes only 7.9 percent to GDP, a further indication of the low level of productivity in agriculture.

Farmland market

Romania is a particularly popular farmland investment destination for foreign investors because of its high agricultural potential, relatively low cost of farmland and labour costs, and proximity to certain investor countries within the European Union. A recent survey conducted by Savills Research (2012) reports that farmland prices in Romania rose by 1 817 percent between 2002 and 2012, the highest increase of all countries in the survey. As noted earlier, the agricultural land market will become fully liberalized on 1 January 2014.

Property management firm DTZ Echinox estimates that around 500 000 hectares of agricultural land are currently available for sale and purchase (DTZ Echinox, 2012). This

49 Romania has the highest level of family labour employed in agriculture in the EU-27. A considerable proportion of small farmers are economically and socially vulnerable and face difficulties in complying with EU requirements.

50 Employment climbed from 28 percent during the communist area to 43 percent after change, mostly due to a lack of urban opportunities; it is currently at 30 percent. Agriculture therefore remains of key importance to Romania (Knight, 2010).

Figure 6: Map of Romania

Source: UN cartographic section (January, 2004).

represents about 3.7 percent of total agricultural land or 5.6 percent of arable land.

Investments

Several funds are invested in Romania. These include: the Rabo Farm Europe Fund, the Altima One World Agriculture Fund (through its investment in Spearhead International; see list below), the NCH Agribusiness Partners Fund I and the North Bridge AgRoInvest Fund (this fund has around 7 500 hectares under control; North Bridge, 2013a). Another fund, the Pharos Global Agriculture Fund, has stated its intention to invest in Romania.

The Minister of Agriculture and Rural Development in Romania was recently quoted in the media as saying that foreign investors currently control more than 700 000 hectares of agricultural area in Romania, which represents about 8 percent of the arable land in the country.[51] Most of these investors are from EU countries, predominantly Germany and Italy.

The same reports note that "some 1 152 companies with Italian capital" are active in farming as at the end of June 2012 and that most of these companies are concentrated in western Romania and the region around Bucharest (*Business Review*, 2012).[52] While no specific data are available this example illustrates some of the scope and nature of investor interest in primary agriculture.

51 The media have recently reported that Romania may impose restrictions on foreigners buying agricultural land to protect local farmers and prevent speculation (EUBusiness, 2012).

52 The minister is quoted as saying: "The agricultural land owned by the foreigners in Romania at the moment is more than 700 000 hectares, with Italy having 24.29% of the surface, Germany 15.48% and the Arab countries, 9.98%. The request to buy agricultural land is a developing phenomenon." According to the minister, the total number of farms belonging to foreigners reached 709 in 2011, compared with 635 in 2010. The largest area is in Timis County, approximately 133 830 hectares this year, up from 62 736 hectares in 2010. In northeastern Romania, farmland bought by foreigners rose to 51 553 hectares in 2011 from 37 295 hectares in 2010, to 44 021 hectares from 26 457 hectares in southwestern regions, and from 149 569 hectares to 229 336 hectares in western Romania. According to the data revealed by the minister, other countries with significant participations are Hungary with 8.17 percent, Spain with 6.22 percent, Austria with 6.13 percent, Denmark with 4.25 percent, the Netherlands and Greece both with 2.4 percent, and Turkey with 0.78 percent, whereas Cyprus, Luxembourg, Malta, Monaco and San Marino are buying property through offshore companies, to the amount of 5.91 percent. Investors from Iran, Iraq, Lebanon and Syria are also present in the sector (Actmedia, 2011).

Several proposed funds have previously stated their intention to invest in Romania. While most of these funds were never launched they do provide examples of the potential scale of interest. Examples include:

- Agrotrust European Farm Fund (unsuccessful in raising capital and consequently shelved in 2012)[53];
- Pharos Miro Agriculture Fund (also shelved);
- Palmer Capital Pan European Farmland Fund (shelved in 2008);
- Schroder Agricultural Land Fund (shelved in 2008); and
- Romland Agrifund (a fund proposed by Pace Capital)[54].

Other prominent foreign investors in primary agriculture in Romania include the following companies, which combined reportedly control over 130 000 hectares of farmland:

- Jantzen Development (Denmark), a private investment firm[55];
- First Farms (listed on the NASDAQ OMX Copenhagen)[56];
- DCH International (Denmark)[57];
- Agri Invest (Denmark)[58];
- Aquila Capital (Germany)[59];
- Spearhead International (UK), also invested in the Czech Republic, Poland, Slovakia and Serbia[60];
- Agrarius (Germany)[61];
- Genagricola (Assicurazioni Generali)[62];
- Cerestial Farm Fund (Netherlands)[63];
- Ingleby Farms (Denmark)[64];
- Cascade Empire (Schweighofer Group – Austria)[65];
- Maria Trading and Delta-Rom Agriculture (10 000 hectares)[66];
- Prio Foods (Portuguese), which controls 25 000 hectares[67];
- DN Agrar (Dutch), which controls 11 000 hectares[68];
- Riso Scotti Danubio, an Italian rice producer, which controls 11 000 hectares[69];
- Gruppo Roncato (S.C. Padova Agricultural SRL and S.C. Contara SRL), an Italian rice producer, which controls 4 200 hectares[70];
- Smithfield Farms (US), which reportedly controls about 20 000 hectares (Smithfield Ferme, 2009); and

53 It was planned that the fund would own and operate large-scale farms in EU member states and EU candidate countries. Agrotrust envisaged a three-year (+1+1 years) commitment period and a fund life of eight years (+1+1 years). The fund target size was planned at EUR200 million and the target IRR was 12 percent (Agrotrust, 2011).

54 Romland AgriFund (n.d.) is a seven-year closed-ended and non-listed fund investing in an actively managed agricultural land portfolio in Romania. The fund expected to raise EUR100 million. The proposal includes assembling land plots of minimum 2 000 hectares up to 10 000 hectares. According to the company's website, the expected yield was 15 percent annually and capital appreciation of 100 percent over three years. The expected investment horizon is three to five years (Pace Capital, 2008).

55 Jantzen Development (n.d.) has invested, variously, in projects covering around 12 000 hectares in Romania.

56 First Farms (2012) invests in crops and dairy farming in Romania and Slovakia and owns 7 536 hectares in Romania.

57 DCH International AS, (n.d.) manages pig farms. A subsidiary company, *Agro Investments Moldova SRL,* buys and manages farmland in Romani.

58 Agri Invest A/S controls 12 500 hectares of farmland in Romania (Agri Invest, n.d.).

59 Aquila Capital (2013) also invests in Australia, Brazil, New Zealand and Uruguay. No information is available on any farmland investments in Romania.

60 The Altima One World Agriculture Fund is invested in Spearhead International (2012), which controls 17 800 hectares in Romania.

61 Agrarius (n.d.) controls approximately 3 200 hectares in Romania.

62 Genagricola is Assicurazioni Generali's agro industrial holding, operating in various agricultural areas. The group controls approximately 4 600 hectares in Romania (Generali Group, 2013).

63 Cerestial Invest (n.d.) is a Dutch-led investment initiative targeting Romanian farmland.

64 Ingleby (n.d.) owns three farms in Romania, totalling 10 435 hectares. Ingleby is a worldwide group of family farms with operations in Argentina, Australia, New Zealand, Romania, Uruguay and the United States, and also forests in Romania.

65 Cascade controls around 1 000 hectares with storage and drying facilities (Holzindustrie Schwighofer, n.d.).

66 Agro Chirnogi, which reportedly has foreign shareholding, controls over 26 000 hectares in collaboration with the Maria Trading website (www.agrochirnogi.ro). This report ranks the top 10 agricultural investors in Romania in 2011: *Profiles International* (2011).

67 Prio Foods is part of Nutre Group (2013), which has invested in biodiesel production in Romania.

68 DN Agrar is a dairy farming investment.

69 Riso Scotti (n.d.), Europe's largest rice producer, reports that it had invested over EUR40 million in Ialomita, Olt, Dolj and Braila counties in Romania (May 2011). The company controls 11 000 hectares, of which 6 000 hectares had been developed by 2011, and has announced plans to expand cultivation to 15 000 hectares.

70 Gruppo Roncato operates through two subsidiaries in Braila county. The company reports that average rice yields in their Romanian operations increased from 4 100 ka per hectare in 2005 to 8 500 kg per hectare in 2009 (Padova Agricultura, n.d.). A third Italian rice producer, Beg Agricultura, controls 1 100 hectares in Olt county (2009).

- Dangro Invest A/S (Denmark), which controls 8 730 hectares.[71]

There are also several foreign investments in forestry in Romania. Examples include:

- Nordcapital forest funds,[72] which invest in forests in Romania;
- Tornator Group[73] owns a total of some 620 000 hectares of forests in Finland, Estonia and Romania;
- Holzindustrie Schweighofer (Cascade Empire) (controls 8 000 hectares);
- Harvard Management Company (30 000 hectares);
- Swedish private investors (estimated 4 000 hectares); and
- The Porsche family (8 000 hectares) (Charmont Investments, 2013).

Despite Romania's reputation as having the most fragmented farmland, the country also boasts four of the five largest agricultural enterprises within the European Union. Large farming operations include, for example, the InterAgro Group with 43 000 hectares under cultivation, Racova Group with 54 000 hectares of arable land, and TCE3 Brazi Holding with approximately 59 000 hectares of which 40 000 hectares are irrigated.

Bulgaria

General overview

Institutional investors in Bulgarian farmland consist of a locally managed private equity fund, six real estate investment trusts (REITs) and one local listed company. Their overall commitments amount to around USD350 million and involve some 104 000 hectares or 2 percent of Bulgaria's agricultural land. The investors mainly own and lease the land to farmers, although there are also a few cases where they own and operate the farms.

The IFC is invested in Advance Terra Fund, a REIT that focuses on agricultural land and is listed on the Bulgarian Stock Exchange. Bulgaria also claims the distinction of hosting the first Chinese investment in primary agriculture in the European Union.

At present, only Bulgarian citizens and locally registered companies are allowed to acquire title to agricultural land. This restriction expires on 31 December 2013.[74] Over 90 percent of Bulgaria's agricultural land is privately owned. Fragmentation is a limitation. However, over 78 percent of the land is located in holdings of 100 hectares or more; their average size is 534 hectares. The rental market is also well developed and over 80 percent of farmland is leased to third parties.[75] However, small agricultural holdings continue to provide a valuable social buffer and around 93 percent of people employed in agriculture are family members.

The 2010 national agricultural census identified 358 000 agricultural holdings (defined as a "separate technical and economic unit" that has "single management") using land. Two trends were identified compared with the last national census in 2003: the number of agricultural holdings has fallen by 44 percent, and the amount of agricultural land utilized has risen. These have caused a significant increase in the average farm size, from 4.44 hectares to 10.1 hectares, which highlights the process of amalgamation in agricultural holdings (Bulgaria Ministry of Agriculture and Food, 2011).

There is a diverse mix of individual, corporate and cooperative management structures. Individuals ("natural persons") and sole traders control 98.6 percent of the agricultural holdings,

71 Dangro Invest A/S (n.d.) is a privately held investment company that has farmland investments in Poland (2011 – 19 968 hectares) and Romania (2011 – 8 730 ha).

72 "Investments in forests are seen as stable components of a well diversified asset portfolio thanks to their considerable potential for capital appreciation, low volatility and low correlation with financial markets". Nordcapital's (2013) holdings comprise 11 900 hectares in southern and northeastern Carpathians. EUR89.4 million is invested in two equity funds.

73 Tornator (n.d.) controls around 600 000 hectares of forestlands and is the third largest forest owner in Finland. In Romania, the company has some 12 000 hectares of forest.

74 Foreigners cannot purchase agricultural land in Bulgaria and Romania for a transitional period of seven years after their accession to the European Union. The countries considered these derogations necessary to preserve their socio-economic agricultural structure from possible shocks from the differences in land prices and income with the rest of the EU, and to be able to pursue an effective agricultural policy. They were also deemed necessary due to an unfinished process of privatizing and restituting agricultural land to the farmers in some countries. These two countries were granted transitional periods during which they could maintain existing provisions of their legislation restricting the acquisition of agricultural land or forest, in derogation to the freedom of capital movement enshrined in the treaty on the functioning of the European Union.

75 In 2007 only 17 percent of the agricultural land was farmed by owners (Eurostat, 2010).

Table 49: Key statistics for Bulgaria

Indicator	Amount
Population	7.5 million
GDP	USD53.5 billion
GDP per Capita	USD7 158
Classified by the World Bank as upper middle income	
Agricultural GDP	USD3.0 billion
Agricultural GDP per capita	USD401
Agriculture as % of GDP	5.6%
Agricultural % of labour employed	7.1%

Sources: Bulgarian Ministry of Agriculture and Food (2012); CIA (2011); World Bank (2012).

Table 50: Total land and agricultural land

	Hectares	Share of total land (%)
Total land	11 100 000	
Agricultural land	5 030 000	45.3
Arable land	3 139 000	28.3
Orchards and vineyards	155 000	1.4
Pastures	1 683 101	15.2
Irrigated land	102 000	0.9
Forests	4 138 000	37.3
Number of farms	358 000	
Average farm size	10.1 hectares	

Sources: Bulgaria NSI, (2011); Bulgaria Ministry of Agriculture and Food (2011); EastAgri (2012); Eurostat (2010).

representing some 48.7 percent of utilizable agricultural land. Legal structures comprising "commercial companies, cooperatives and other holdings" control the remaining 1.4 percent of agricultural holdings, or 51.3 percent of land.

While fragmentation of holdings is an issue, consolidation from rents means that a significant proportion of holdings are 100 hectares and larger. The average size of these larger holdings is 534 hectares, as illustrated in Table 52.

Overview of agriculture in Bulgaria

Bulgaria has a diversity of microclimates and agronomic conditions and produces a variety of agricultural products, including cereals, oilseed, grapes, wine, vegetables, tobacco and livestock products. The most fertile areas for cropping are the Danubian plain in the north and the Thracian plain in the south. Cereals covers 56 percent of arable land, oilseed 31 percent, and fodder, vegetables and other crops the remainder.

Crop production accounts for 66.5 percent of gross agricultural output and livestock production 33.5 percent (Bulgarian NSI, 2011). Agriculture is one of the few sectors in Bulgaria with a positive balance of trade. Over 70 percent of exports are sold within the European Union (Bulgaria Ministry of Agriculture and Food, 2011).

Bulgaria benefits from EU farm support payments. Although subsidies are still 50 percent of what farmers in the founding EU countries receive, they provide meaningful financial support and a floor to the rental market.[76] Banks will, for

76 Subsidy payments to agricultural producers in new accession countries in terms of the Single Area Payment Scheme (SAPS) of the EU's Common Agricultural Policy will increase in steps to 100 percent of the payments to older member states by 2016.

Table 51: Agricultural holdings and agricultural land

Legal status of agricultural holding	Number of agricultural holdings	Share of total holdings (%)	Utilizable agricultural land (ha)	Share of utilizable agricultural land (%)	Split (%)
Natural persons	363 620	98.0	1 226 150	33.8	48.7
Sole traders*	2 270	0.6	539 510	14.9	
Cooperatives	940	0.3	641 210	17.7	51.3
Companies	3 900	1.0	1 145 820	31.6	
Associations/other	340	0.1	75 950	2.0	
Total	**371 070**	**100**	**3 628 640**	**100**	

Source: Bulgaria Ministry of Agriculture and Food (2011).

Note: *A sole trader is defined as a business owned and controlled by one person, although it may have employees.

Table 52: Distribution of agricultural holdings by size

Size of holding (ha)	Number of agricultural holdings	Share of total holdings (%)	Utilizable agricultural area (ha)	Share of utilizable agricultural area (%)	Average size of holding (ha)
Less than 1.99	308 800	83.2	144 300	4.0	0.47
2.00 to 4.99	30 400	8.2	90 600	2.5	3.0
5.00 to 9.99	10 800	2.9	73 000	2.0	6.8
10.00 to 49.99	12 900	3.5	279 700	7.7	21.7
50.00 to 99.99	2 900	0.8	203 300	5.6	70.1
100 and over	5 300	1.4	2 830 300	78.2	534.0
Total	**371 000***	**100**	**3 620 900**	**100**	**10.1***

Source: Bulgaria Ministry of Agriculture and Food (2011).

Note: *There are effectively 358 000 agricultural holdings that own land; the remaining 13 000 do not utilize land in their activities. This explains why the average size of holding is slightly larger.

example, accept subsidy certificates as collateral for short-term financing (Voca Consult, 2012).

Historical context to farmland structure and ownership

Collectivization during the Communist period accounted for a high percentage of farms in Bulgaria. By 1958, 92 percent of farms had been collectivized. There were three phases of increasing concentration to form large agro-holdings. By 1971, the number of holdings had been reduced to just 161 complexes averaging 24 000 hectares, with several larger than 100 000 hectares. The idea was to pursue specialization in a few crops or type of livestock production, and to produce on a sufficient scale to enable meaningful integration between agriculture and (the processing) industry, seemingly to achieve symbolic unity between urban and rural workers.

Land reform abolished the agro-industrial complexes and a programme of land restitution began. Prior to Communism, agriculture in Bulgaria had consisted of some 1.1 million family farms averaging 4.2 hectares in size. The land restitution process was largely completed by 2000 and has left a highly fragmented ownership structure across most of the country. Around 8.7 million plots exist among over 5 million owners (Bueno, 2007).

Farmland market

EU accession has largely liberalized land markets in Bulgaria and integrated them into the single EU market. While the process has been temporarily delayed by ownership restrictions, EU accession has improved the functioning of other factor markets (including credit and technology) and output markets. Absorption of EU subsidies has also improved. These factors have collectively

Table 53: Area cultivated by crops, 2008–2011

Crops	Cultivated area (ha)	Share of cultivated land (%)	Crop split (%)
Wheat	1 154 320	36.7	56
Barley	228 086	7.3	
Maize	360 811	11.5	
Sunflower	735 201	23.4	31%
Rapeseed	250 000	8.0	
Fallow lands	201 883	6.4	13
Other crops	212 905	7.3	
Total land	**3 143 206**	**100**	**100**

Sources: Voca Consult (2012), with data from the Bulgaria Ministry of Agriculture and Food.

Figure 7: Map of Bulgaria

Source: Wikipedia.

affected agricultural productivity and demand for land, the net result being higher land values.

Land fragmentation is a central obstacle to the development of the land market. The dispersion of multiple plots in a non-contiguous manner within single agricultural holdings also hinders their sale and rental.

As mentioned, over 80 percent of Bulgaria's agricultural land is rented (Bulgaria Ministry of Agriculture and Food, 2011). The ratio of owned to rented land varies with the size of the farms. Research shows that small farms use some 40 percent of owned land and rent the remainder, while the largest farms rent up to 96 percent of the land that they cultivate (Swinnen and Vranken, 2010). Base rental rates usually equal the amount of the EU subsidy payment (the average base rental in 2010 was around EUR130 per hectare).

Bulgarian farmland prices have lagged behind those in the EU-25 and especially other recent accession countries. The Savills Farmland Index for 2012 reports that average sale value of farmland in Bulgaria was EUR2 112 per hectare, compared with EUR5 685 in Poland and EUR5 030 in Romania (Savills Research, 2012).

In 2011, around 150 000 hectares of farmland was bought and sold in some 170 000 individual transactions (Cibola Consultants, 2012). On average, in each of the past three years, some 100 000 hectares have been traded. This represents about 2 percent of total agricultural land, which appears to be within industry norms.[77]

Investments

There is one locally managed private equity fund invested in primary agriculture in Bulgaria: the Ceres Agrigrowth Fund, managed by Rosslyn Capital Partners.[78] The fund invests in farmland and owns some 21 000 hectares, reportedly making it one of the largest landowners in Bulgaria. The fund is capitalized at EUR45 million and includes European and US institutions as investors.

Bulgaria has six REITs invested in farmland. These structures have helped to develop the land market and raised the visibility of farmland as an asset class.

Most of these REITs (four of the six, at present) trade below book value. Due to this, the ELARG Agricultural Land Opportunity Fund REIT,[79] one of the early REITs, recently decided to cash in before the planned redemption date (Agrimoney.com, 2011a). The management was quoted as saying that "the markets do not appreciate properly both the work performed by the management and the value of our assets".

There are also other smaller investment initiatives, such as:

- Fair Play Agricultural Fund, a diversified agricultural investment proposal developed by FairPlay International, a real estate investment firm in Bulgaria (Fairplay International, 2013);
- The Black Sea Agriculture Fund,[80] an open-ended private placement fund launched in 2011 and focusing on Bulgaria. Its strategy

77 By comparison, less than 1 percent of farmland is traded annually in the United Kingdom, a mature farmland market. In the 1950s, the figure for the same market was about 2.5 percent (Savills Research, 2012).

78 Ceres Agrigrowth Fund (n.d.) was established in 2006 to invest in agricultural land in Bulgaria. The fund is at present the third largest private institutional investor in farmland in Bulgaria (in terms of land owned). The fund's investment vehicle is a locally registered joint-stock company. Fund investors include: Raiffeisen Centrobank AG, global investment funds Firebird Management, Black River Asset Management and Mezzanine Management, and fund manager Rosslyn Capital Partners. Investments focus on regions that offer an attractive combination of price and quality, good potential for large-scale agriculture, and a place where sizeable holdings can be concentrated and value added by further consolidating plots and renting land to agricultural producers. The fund may also invest in its own agribusiness projects to "take utmost advantage of any EU subsidies, get more financial leverage and ensure faster consolidation of acquired land".

79 ELARG (n.d.), incorporated in April 2005, was the first special-purpose entity created for investments in agricultural land in Bulgaria. This REIT's objective is the acquisition, leasing and expansion of agricultural land.

Investment duration was planned until 2018. In 2009, ELARG owned 29 320 hectares located in 38 900 owned properties and held at an average acquisition cost of EUR1 120 per hectare.

80 The fund's target size is USD10-20 million. Assets under management are around USD2 million. The fund owns some 120 hectares (Black Sea Agriculture, 2012).

Table 54: REITs and other private equity investors in farmland in Bulgaria

Name	Area (hectares)	Listing, ticker	Market cap (USD millions)	Website
Advance Terra Fund	29 486	Sofia 6A6:BU	129.5	www.karoll.net
ELARG Agricultural Land Opportunity Fund	25 117	Sofia 4EC:BU	92.5	www.elarg.bg
Agro Finance	14 080	Sofia 6AG:BU	40.3	www.agrofinance.bg
Agric Land Opportunity Fund Mel Invest	5 500	Sofia 6A7:BU	13.3	www.fzz-melinvest.com
Bulgarian Real Estate Fund** (multi-sector – 8% farmland)	2 330	Sofia 5BU:BU	1.7	www.brefbg.com
Bulland Investment	1 810	Sofia 5BD:BU	8.5	www.bulland.org
Subtotal	**78 323**		**285.6**	
Other private equity				
Agro Terra North**	5 000	Subsidiary	7.5	www.agroterrasever.com
Ceres Agrigrowth Fund	21 000	Fund	58.5	www.ceres.bg
Subtotal	26 000		66.0	
Total	**104 323**		**351.6**	

Sources: Bloomberg, company websites. Market capitalization as at 28 December 2012.

Notes: *The Bulgarian Real Estate Fund is a multi-sector fund with 8 percent of its portfolio in farmland (the market cap value in the table is therefore taken as 8 percent of the total market cap of USD21.3 million). **Agro Terra North is a subsidiary of Advance Equity Holding (market cap of USD15.6 million), which is listed on the Bulgarian Stock Exchange. In this instance, the market cap value in the table is taken as the stated value of the company's investment in Agro Terra (EUR5.8 million).

involves buying plots of farmland and leasing them to local farmers.

- The Winslow Agro Fund, which focuses on acquiring agricultural land and cultivating agricultural products. It currently owns some 1 500 hectares and leases an additional 2 000 hectares[81];
- Advance Equity Holding, an investor in non-listed companies. Listed on the Bulgarian Stock Exchange, it holds 90 percent of the equity in Agro Terra North, which cultivates around 5 000 hectares of farmland in northwestern Bulgaria. Investment in Agro Terra is EUR5.8 million.

There are several local strategic investors in large-scale farmland, including:

- Agria Group Holdings, which manages crop production, storage and trading and controls 16 000 hectares (of which it owns 3 000 hectares);
- BG AGRO Agricultural Company, which operates on more than 9 000 hectares in northeastern Bulgaria and produces grain and oilseeds; and
- Tianjin State Farms Agribusiness Group Company, which is reportedly operating on 2 000 hectares in northwestern Bulgaria (Novinite.com, 2011). Bulgaria recently invited Chinese groups to invest in primary agriculture, and this is reportedly the first of its kind in the European Union (Dimitrova, 2012).

81 Winslow Group was established in 2003 through a Bulgarian-British partnership. The Winslow Agro Fund is a separate division of the group.

Table 55: Key statistics for Croatia

Indicator	Amount
Population	4.4 million
GDP	USD63.9 billion
GDP per Capita	USD14 488
Classified by the World Bank as high income: non OECD	
Agricultural GDP	USD3.3 billion
Agricultural GDP per Capita	USD739
Agriculture as % of GDP	5.1%
Agricultural % of labour employed	5.0%

Sources: EastAgri (2012); World Bank 2012.

Table 56: Total land and agricultural land

	Hectares	Share of total land (%)
Total land	**5 659 000**	
Agricultural land	1 300 000	23.0
Arable land	892 000	15.8
Orchards *	82 000	1.4
Pastures	346 000	6.1
Irrigated land	31 000	0.5
Forests	2 231 764	39.4
Number of farms **	449 896	
Average farm size ***	2.4 hectares	

Sources: Croatian Bureau of Statistics (2012); EastAgri (2012).

Notes: *Orchards include vineyards and olive groves. ** Comprising 448 532 family farms and 1 364 private agricultural companies. *** The Ministry of Agriculture, using farm registry data, defines average farm size as 5.3 hectares – see Table 57 and comments below.

Table 57: Farm ownership by category

	Number of farms	Area (hectares)	Share of area (%)
Family farms	448 532	860 195	80
Agricultural enterprises	1 364	217 208	20
Total		**1 077 403**	

Source: Croatian Bureau of Statistics (2012).

Croatia

General overview

Agriculture in Croatia, a net importer of foodstuffs, is highly fragmented. Family farms occupy 80 percent of utilized agricultural land and average 2.4 hectares in size. Only 5 percent of farms are larger than 10 hectares (European Union, 2006b) and there are few large farmland operators. Prominent local agricultural operators include Agrokor and Zito Group. While the consolidation of farmland is a government priority, it is a long and slow process.

There are no private equity funds invested in primary agriculture in Croatia. However, the country is scheduled to become a member state of the European Union in July 2013, which will affect views about agricultural land ownership.

As Table 57 illustrates, family farms occupy 80 percent of the agricultural land in Croatia.

Table 58: Structure of agricultural holdings and land

	3 ha or less	3 ha to 20 ha	20 ha to 100 ha	More than 100 ha	Total
Number of holdings	120 230	63 707	6 060	675	190 672
Land (hectares)	103 680	424 719	238 654	240 906	1 007 959
Average size (hectares)	0.9	6.7	39.4	356.9	5.3
Holdings (%)	63.1%	33.4%	3.2%	0.4%	100%
Land (%)	10.3%	42.1%	23.7%	23.9%	100%

Source: Croatia Ministry of Agriculture, Fisheries and Rural Development (2009).

The Ministry of Agriculture, using Farm Registry data, reports that there are 1 007 959 hectares of agricultural land overall and 190 672 registered farms, giving an average of 5.3 hectares per farm (Croatia Ministry of Agriculture, Fisheries and Rural Development, 2009; see Table 58). [82]

Overview of agriculture in Croatia

Croatia produces a diversity of products from a small base of arable land. Various types of climate, relief and soil favour production of a wide range of agricultural products, from field and industrial crops to vineyards, continental and Mediterranean fruits and vegetables. Crops account for 66 percent and livestock products for 33 percent of gross agricultural output (FAOSTAT, 2011).

Cereals account for most arable production (65 percent). Corn and wheat are the predominant crops (Croatia is a net exporter of cereals). Crop yields for corn and wheat equal or exceed EU-27 average yields (FAOSTAT, 2011).

Most exports are to the European Union (65 percent of the total) and consist of cereals, sugar, meat products, and fruit and vegetables. Sugar is the most significant export. However, Croatia is a net importer of food.

Agriculturally, the country can be divided broadly into three natural and geographical areas (European Union, 2006b):

- the Pannonian and Peripannonian region, consisting of valleys and hills in northeastern Croatia, where arable farming and livestock predominate;
- the Mountainous region, dividing the Pannonian region from the coastal area, where small-scale farms prevail and cattle breeding is the predominant activity; and
- the Adriatic coastal region, covering a narrow coastal belt, which is separated from the hinterland by high mountains. The Adriatic coast consists of more than 1 000 islands and is one of the most indented in Europe. The mild climate enables the production of Mediterranean crops.

As in other parts of the region, most small-scale farms are not commercially viable and are reliant upon state subsidies and supports. However, the small farm sector, like elsewhere, has an important social component.

Historical context to farmland structure and ownership

Agriculture in Croatia is characterized by two parallel production systems: small family farms and larger private agricultural companies, most of which evolved from the large, formerly state-owned agricultural enterprises.

Croatia had a relatively higher share of socially or state-owned land – about one-third of agricultural land – compared with Serbia, where the share is about one-quarter of agricultural land.

The process of privatization has been similar to that pursued in Serbia. However, Croatian law on agricultural land is somewhat different to Serbian law in that it allows the sale of state-owned agricultural land (Zivkov, 2012). There

82 In Croatia, there are two sources of information pertaining to farm structure: one is data obtained in the agricultural census taken in 2003, and the other is the Farm Registry Office. Differences in these two sources relate to the use of land, among other things. The calculation methods lead to differing farm numbers and average farm sizes. However, these small farm size differences are not particularly relevant to the objectives of this study, as the study addresses mostly opportunities for investment in large-scale farms. For more details, see Zivkov (2012).

Figure 8: Map of Croatia

Source: UN Cartographic Section (January, 2004).

are restrictions on the ownership of farmland by foreign individuals. Restrictions on sales of farmland to foreign individuals will be retained for seven years after Croatia's accession to the European Union in 2013 (EU, 2013).

Land reforms conducted since the end of the former Socialist Federal Republic of Yugoslavia have not resulted in significant changes, as most land remains in the hands of small private farms. However, land leasing is expected to drive consolidation at the operational farming level in future (Bojnec, 2011). The land rental process is relatively well structured: contracts are registered in the cadastre and the land register. The minimum tenure is five years and the maximum tenure is 20 years. There are no limits on rental prices. Current average land prices are between EUR5 000 and EUR7 000 per hectare.[83] Prices obviously vary depending upon the location, size and other characteristics of the land.

Investments

There are no private equity funds invested in primary agriculture in Croatia. The largest private farmland operator is Belje, owned by Agrokor. Belje (2008) cultivates around 20 000 hectares of arable land, producing mostly cereals, oilseeds and sugar beet. Vupik, also part of Agrokor, controls over 7 000 hectares of arable land and produces grains, oilseeds and vegetables.

Zito Group (n.d.) is a primary agricultural and food producer, which cultivates 15 700 hectares over six locations in Croatia.

There are no large foreign investments in primary agriculture in Croatia. There are however several foreign agro-processors, including, for example, Dukat, a dairy processor, and GP & Partners, a cornstarch processor.

83 Prices in 2011 as quoted in Bojnec (2011).

Serbia

General overview

Primary agriculture in Serbia is highly fragmented: the country has one of the lowest average farm sizes in Europe (average holding is 3.6 hectares).[84] Some 778 891 family holdings (almost exclusively small family farms) own over 80 percent of farmland. There are larger farms, mostly in the northern regions, providing potential opportunities for institutional-scale investment in primary agriculture.

Around 90 percent of farmland is privately owned. The government is committed to privatizing most of the farms that remain currently in state ownership. Successful restitution of confiscated assets, including farmland, is an important issue in Serbia and a pre-condition to negotiations for Serbia's accession to the European Union.

Foreign individuals cannot own farmland in Serbia. However, foreigners can own farmland through a Serbian-registered company. Land registration procedures and land cadastre records are still in development. Despite this, the market for farmland on a commercial scale is reportedly competitive and efficient.

Serbia is the only country in the Western Balkans that is a net exporter of agricultural products. The country has made impressive progress in developing new markets.

There have been several foreign investments in farmland either as direct investment in primary agricultural production or as part of a vertical integration strategy. However, there are no private equity funds investing in primary agriculture in Serbia at present. A recent agreement with a sovereign-controlled company from Abu Dhabi to invest in several state-owned farms will be the first investment of its nature and scale within the countries being reviewed in this study. It is reported that the agreement will enable the investor the guaranteed right to export agricultural products to the United Arab Emirates.

84 Preliminary results from the Agricultural Census conducted in 2012 indicate that average farm holding may be slightly larger at 4.5 hectares (Serbian Statistics Office, 2013).

Overview of agriculture in Serbia

Serbia has the most agricultural land and the highest share of arable land among the countries of the former Socialist Federal Republic of Yugoslavia.[86]

Land and climatic conditions are conducive to producing a diversity of agricultural goods from crops to vegetables to fruit and wine and livestock. Crop production accounts for some 68.5 percent of gross agricultural output and livestock production for 31.5 percent (agricultural data for 2011; Serbian Statistics Office, 2012).

Serbia is the world's second largest producer of raspberries (after the Russian Federation) and plums (after China), as well as a major producer of corn and wheat.[87] There is recent precedent for trade restrictions: in March 2011, the government imposed a ban on wheat and flour exports in order to contain local bread price rises (USDA, 2012b).

85 A 2002 census defines a "family holding" as a household with "at least 10 aces of arable land" or "up to 10 ares of arable land" and holding a certain number of livestock (e.g. "five adult sheep" or 50 heads of adult poultry"). [Note that one "are" is 100 square metres, or 1/10th of one hectare]. Over 75 percent of family holdings own fewer 5 hectares (Serbian Statistics Office, 2012).

86 Serbia has 5.1 million hectares of agricultural land, followed by Bosnia and Herzegovina with 2.1 million hectares, Croatia with 1.2 million hectares, Macedonia with 1 million hectares, and Slovenia and Montenegro with some 0.5 million hectares each.

87 Serbia produces some 6 million tonnes of corn and 2 millions tonnes of wheat annually. About one-third of each of these crops is exported annually, mostly to European markets. For interest, Serbia produced 84 299 tonnes of raspberries and 147 776 tonnes of plums in 2012 (Serbian Statistics Office, 2012).

Table 59: Key statistics for Serbia

Indicator	Amount
Population	7.26 million
GDP	USD45.82 billion
GDP per capita	USD6 310
Classified by the World Bank as Upper Middle Income	
Agricultural GDP	USD5.0 billion
Agricultural GDP per capita	USD694
Agriculture as % of GDP	11.0%
Agricultural % of labour employed	21.9%

Sources: CIA (2011); Serbian Government (2012); World Bank (2012).

Table 60: Total land and agricultural land

	Hectares	Share of total land (%)
Total land	**8 836 000**	
Agricultural land	5 055 000	57.1
Arable land	3 298 000	37.3
Orchards	298 000	3.4
Pastures	1 455 000	28.9
Irrigated land	89 000	1.0
Forests	1 978 000	22.4
Number of farms *	779 603	
Average farm size **	3.6 hectares	

Sources: EastAgri (2012); Serbian Government (2012), Serbian Statistics Office (2012).

Notes: *Comprises 778 891 family holdings[85] and 712 legal entities and farm cooperatives (Serbian Statistics Office, 2012) – see below for an analysis of these holdings. **This average farm size applies only to private farms holdings (as noted above, first results from the agricultural census completed in 2012 indicate average family holding as 4.5 hectares of agricultural land) (Serbian Statistics Office, 2013).

Table 61: Distribution of arable land by region in Serbia

Region	Area (hectares)	Share of arable land (%)
North	**1 748 000**	**53.1**
Belgrade	170 000	
Vojvodina	1 578 000	
South	**1 546 000**	**46.9**
Sumadija/ West Serbia	781 000	
South and East Serbia	765 000	
Total arable land	**3 294 000**	**100**

Source: Serbia Statistics Office (2012).

Table 62: Distribution of legal entities and cooperatives by farm size

Area of land	Legal units (no.)	Share of legal units (%)	Cooperatives (no.)	Share of cooperatives (%)
Without land	16	3.1	32	14.7
Under 50 ha	123	24.1	52	23.9
51-100 ha	58	11.4	22	10.1
101-300 ha	78	15.3	59	27.1
301-500 ha	41	8.0	17	7.8
501–1 000 ha	73	14.3	21	9.6
1 001–2 500 ha	81	15.9	11	5.0
2 501-5 000 ha	28	5.5	3	1.3
Over 5 000 ha	12	2.4	1	0.5
Total	**510**	**100**	**218**	**100**

Source: Serbian Statistic Office (2012).

Table 63: Breakdown of labour in agricultural production in Serbia

Activity	Share of total labour (%)
Livestock	43
Crops production	42
Fruits and wine production	12
Other crops	3
Total	**100**

Source: European Union (2006a).

There are, broadly, three agricultural regions in Serbia:

- Vojvodina in the north is the wealthiest region and has a high proportion of arable land (76 percent of the total). It accounts for most of the marketed surplus of grains, oilseeds, meat and milk. Traditional family farms and private estates prevail, with the average commercial farm occupying 500-700 hectares (75 percent of commercial farms are smaller than 1 000 hectares – see the following tables).
- Central Serbia is characterized by hilly topography and diverse farm production systems (67 percent of land is arable). It accounts for a large proportion of fruits and vegetables and 90 percent of the berry fruit produced nationwide.
- Southern Serbia is the largest yet also the least developed region with large areas of forest and 55 percent of land classified as arable land.

As noted, 75 percent of legal entities in agriculture are less than 1 000 hectares in size.

Agricultural and food products account for about 20 percent of exports and the sector is the only one with a positive balance of trade. Main exports are cereals (corn and wheat), processed fruit (raspberries and prunes), refined sugar (to the EU) and livestock and meat products.

Serbia has negotiated free trade agreements with Belarus, the Russian Federation and Turkey, and preferential access to the European Union for beef, wine and sugar.

Serbia is landlocked and reliant upon transit via the Danube River[88] to the Black Sea to export grains. As seen in recent years, this route can be blocked during periods of low water levels or winter freeze.

88 Exports travel through Port Constanta in Romania.

Figure 9: Map of Serbia

Source: UN Cartographic Section (January, 2004).

Agriculture employs a relatively high proportion of the total population. The sector is viewed as both a driver of economic growth and a social buffer as it is in many other Central European countries. Similarly, as elsewhere in the region, there has been a significant migration of people out of the rural areas so the population engaged in agriculture is ageing. Table 63 shows the breakdown of labour and indicates the distribution of agricultural production.[89]

Farm subsidies are modest by EU standards. In March 2012, Serbia introduced a new system of subsidies based upon production of goods, rather than on a per hectare basis.[90]

Historical context to farmland structure and ownership

Agriculture was never fully collectivized in former SFRY: private farmers owned about 75 percent of the arable land and accounted for over 80 percent

89 Fieldwork for a census of agriculture, the first in over 50 years, was completed in 2012, and will provide a valuable update on the status of agriculture in the country (current census data does not for example include data on larger agricultural enterprises).

90 Agricultural subsidies in Serbia are very modest by any standards. The total state budget for agricultural subsidies in 2012 was around USD230 million.

of gross agricultural output. However, they were limited to a maximum of 10 hectares. Large vertically and horizontally integrated holding structures ("agrokombinats") dominated the "socialized sector" (farm holdings owned by the state or communal structures). As there was little commercial imperative to register family holdings, the land registration and cadastre systems are often inconsistent or incomplete today.

Following the end of the Yugoslav republic, land reform in Serbia started with the creation of a public land fund, about half of which was allocated to landless people. Restitution is an important national issue and a pre-condition to negotiations for Serbia's accession to the EU. Restitution conditions also apply to around 50 percent of the residual farmland currently controlled by the state.

There are three components to farmland privatization in the countries of the former Socialist Federal Republic of Yugoslavia:

- restitution of confiscated farmland to the previous owners;
- privatization of *agrokombinats*, which included farmland; and
- land cultivated by socially owned enterprises not subject to restitution.

Privatization of state farms is a government priority. There are two categories of state farmland:

- *Agrokombinats* (former state farms): About 60-70 percent of farmland controlled by them is being leased. As an indication of scale, the top five farms are around 10 000-20 000 hectares in size; the largest is 25 000 hectares. A further 100 000 hectares of farmland are due to be sold through the privatization process.
- Cooperatives (former collectives): Farmland controlled by most cooperatives has been returned to the original owners.

Farmland market

Serbia has a composite structure of farmland ownership consisting of pre-privatized land, small semi-subsistence farms, large family farms in the north, and large commercial farms of mixed ownership.

The average farm size is one of the smallest in Europe, at 3.6 hectares (additionally, farms have an average of four plots each). There has been some success in Vojvodina, where there is a higher concentration of larger farms, with consolidating small plots (Bogdanov and Vasiljevic (2010). The overall trend is towards large farm sizes through rental arrangements.

Some 90 percent of farmland is privately owned. The market for farmland is currently competitive and, in select regions, characterized by strong local demand. For example, discussions with local experts reveal that prices have increased significantly over the past three to four years. Prices for commercial-scale farmland are currently around EUR4 000-5 000 per hectare, compared with EUR1 500 per hectare a few years ago. Average-sized large farms, which typically cover 200-300 hectares, may command around EUR7 000-8 000 per hectare and, in some cases, up to EUR12 000.[91] A key driver is attractive farming returns achieved from higher commodity prices in recent years.

As such, there seems to be little room for speculative profit on farmland at current prices. The rental market for farmland is also firm with quality land commanding rates of EUR250-500 per hectare.

Foreign individuals cannot directly own farmland in Serbia. However foreigners can own farmland through a locally registered company structure.

Ownership rights are relatively poorly defined and recorded in Serbia. The cadastral system and land ownership register is not fully functional. However, while the lack of clear ownership rights is a hindrance to the operation of the land market, banks do apparently accept farmland as collateral.

Investments

There are several foreign private equity investments in Serbian primary agriculture either directly or as part of a vertical integration

91 Personal communications.

Table 64: Distribution of private farms by farm size

Size of farm	Number of farms	Share of farms (%)	Farms 5 ha or less (%)
Without land	6 288	0.8	
Under 1 hectare	208 100	26.7	
1.01 to 3 hectares	254 832	32.7	**77.6**
3.01 to 5 hectares	135 161	17.4	
5.01 to 8 hectares	96 843	12.4	
8.1 to 15 hectares	62 326	8.0	22.4
Over 15 hectares	15 341	2.0	
Total	**778 891**	**100.0**	

Source: Serbian Statistics Office (2012).

Note: 90 percent of private farms are fewer than 8 hectares in size.

strategy. There is also recent interest reported from sovereign wealth groups. However, there no private equity funds are currently directly invested in primary agriculture in Serbia.[92]

Serbia was one of three core markets (along with Poland and Romania) in focus for the proposed Agrotrust European Farm Fund. However, this fund was not successful in raising capital and has consequently been shelved.[93]

Notable foreign investments in primary agriculture include Agricultural Capital Partners, who have invested into a 12 000-hectare intensive farming operation (AIM, 2012),[94] and Magyar Farming Company, which acquired a former state farm in the Vojvodina region in 2006. The farm cultivates grain and oilseed crops over 1 370 hectares and owns a grain drying and storage business.[95] Another example is a Canadian investment in BD Agro (2010), a dairy producer that also controls 6 000 hectares of farmland.

There are several major domestic farmland operators including Delta Agrar (controlling 15 000 hectares; n.d.) and MK Group (controlling 20 000 hectares; n.d.).[96]

There is recent interest from sovereign wealth groups: Serbia and the United Arab Emirates (UAE) are reported to have recently signed a memorandum of understanding on cooperating in agriculture, agro-industry and the construction of irrigation systems (Tanjug, 2012).[97] The proposed agreement envisages investment in eight state farms spanning some 9 000 hectares of arable land. The agreement has been made with the Al Dahra company, which specializes in the production of animal feeds. The company is a subsidiary of Al Ain Holding, a sovereign investment company.

92 Indirectly, Altima One World Agriculture Fund has a shareholding in Spearhead International, which has operations in Serbia.

93 This fund planned to own and operate farms in EU member states and EU-candidate countries. Agrotrust (2011) envisaged a three-year (+1+1 years) commitment period and a fund life of eight years (+1+1 years). The target size of the fund was EUR200 million and the target IRR was 12 percent minimum.

94 Investment in Serbia is reported as EUR65 million.

95 Magyar Farming is currently selling its farming business in Serbia (Serbian Farm for Sale, 2011).

96 MK Group also owns Agro Invest Ukraine, which controls 30 000 hectares of agricultural land in Ukraine.

97 The proposed agreement includes funding provided by the UAE, while Serbia would repay the loan through a guaranteed multi-annual delivery of various agricultural products to the UAE (see also Arabnews.com, 2013). Under the agreement, Al Dahra will use a third of its investment to purchase eight bankrupt agricultural firms, mainly in Serbia's fertile north, to grow and process food and fodder for export. The remainder will be invested in irrigation and the development of at least five fodder plants. The investment is reported as "the biggest investment in Serbian agriculture for decades". UAE's Development Fund at the same time approved a separate USD400 m loan for Serbian agriculture.

Table 65: Key statistics for Turkey

Indicator	Amount
Population	73.64 million
GDP	USD775 billion
GDP per capita	USD10 524
Classified by the World Bank as upper middle income	
Agricultural GDP	USD70.53 billion
Agricultural GDP per capita	USD958
Agriculture as % of GDP	9.1%
Agricultural % of labour employed	25.5%

Sources: CIA (2011); Turkey Ministry of Food, Agriculture & Livestock (2012).

Table 66: Total land and agricultural land

	Hectares	Share of total land (%)
Total land	**78 356 000**	
Agricultural land	38 911 000	49.7
Arable land + permanent crops	24 294 000	31.0
Arable land	21 315 000	27.2
Orchards	2 979 000	3.8
Pastures	14 617 000	18.7
Irrigated land	5 215 000	6.7
Forests	21 500 000	27.4
Number of farms	3.0 million	
Average farm size	5.9 hectares	

Sources: EastAgri (2012); Turkey Ministry of Food, Agriculture & Livestock (2012); TurkStat.

Turkey

General overview

Primary agriculture in Turkey is highly fragmented, which severely limits improvements in productivity and production. The average farm size is only 5.9 hectares, compared with the EU-27 average of 18 hectares. Each land holding has an average of six fragments. While consolidation of farmland is a national priority, progress is slow and less than 3 percent of land has been consolidated so far. In addition, foreign ownership of farmland is prohibited.

There is limited scope for institutional-scale investments in farmland. The only fund invested in farmland in Turkey is the Egeli & Co Agriculture Investment Trust, listed on the Istanbul Stock Exchange. While ownership of farmland on any scale presents significant challenges, there may be interesting opportunities for fund investments in lease-and-operate ventures like those being developed by the Doruk Group.[98]

Overview of the agriculture in Turkey

Turkey is the seventh largest country in the global agricultural economy[99] and the largest agricultural producer in Europe. Growth over the past decade has been impressive: agricultural GDP grew from

98 Doruk Group (n.d.) is the largest private sector primary agricultural producer in Turkey. It is also the largest organization in the world to have fully integrated the wheat value chain from cultivation to end product. The group consists of 12 companies involving seed production, farming and animal husbandry, grain trading, animal feed production, flour milling, yeast production, industrial baking and pastry mixes and ingredients, international domestic trade, industrial baking and retail baking.

99 The top seven agricultural economies are China, India, the United States, Brazil, Indonesia, Japan and Turkey (World Bank, 2011).

Table 67: Evolution of agricultural GDP (2002–2011)

Year	Agricultural GDP (USD billlion)
2002	23.7
2003	30.2
2004	37.0
2005	45.0
2006	43.5
2007	49.5
2008	56.4
2009	51.0
2010	61.7
2011	62.7

Source: Turkey Ministry of Agriculture, Food and Livestock (2012).

USD23.7 billion in 2002 to USD70.5 billion in 2011. A large percentage of people in Turkey work in agriculture (17.3 million people or 23.2 percent of the total population) and employment in the sector accounts for 25.5 percent of the total work force. As such, agriculture is both an engine for economic growth and an important social buffer in the economy.

Turkey is one of few countries in the world that are self-sufficient in terms of food production. Its fertile soil, adequate climate and abundant rainfall enable cultivation of various crops, the main ones including wheat, rice, pulses, oilseeds, cotton, tea, tobacco, hazelnuts, and fruits and vegetables.[100] Livestock is reared in all regions and accounts for 52 percent of the value of agricultural production (or 42 percent of marketable production) (Turkish Statistical Institute, 2010).

Turkey's proximity to major markets in Europe, the Middle East and North Africa contributed to exports tripling (in nominal USD terms) during the decade to 2009 (Deloitte, 2010). Exports in 2011 exceeded USD5.5 billion (Turkstat, 2012). Turkey's main trade partner is the European Union (mostly fruits, vegetables, nuts and related preparations). The country is also a major importer of agricultural raw materials that are converted into other products and often integrated into exports.

100 Turkey is the world's largest producer of hazelnuts, figs, apricots and raisins, the fourth largest producer of fresh vegetables and grapes, number six for tobacco, the eighth largest producer of wheat, and number 10 for cotton.

Strategic vision

The Turkish government has developed an ambitious "Agricultural Vision" to increase agricultural GDP to USD150 billion and exports to USD40 billion by 2023 (the centennial year of the Turkish Republic), and to position Turkey within the top five countries in the world in terms of agricultural GDP.

Agricultural land

About half of Turkey's land area (49.7 percent) is devoted to agriculture, above the EU-27 average (41 percent). There are around 3 million agricultural holdings, most of which are family farms employing family labour. As noted, the average holding size is 5.9 hectares, compared with 18 hectares in the European Union. Less than 2 percent of farms are larger than 50 hectares. Subsistence and semi-subsistence farming is an important characteristic of Turkish agriculture and farms are typically characterized by low productivity and often a small percentage of production being marketed.

Initiatives aimed at adapting to EU harmonization rules have improved agricultural performance and facilitated the introduction of modern agricultural practices and technologies. Such initiatives include expanding administrative capacity in the agriculture and rural development sectors and, as concerns farmland, developing a system of land identification and the National Farmer

Table 68: Individual farm size distribution

Farm size (ha)	Share of total farms (%)
1-1.99 ha	21
2.0-19.9 ha	68
20.0-49.9 ha	9
50.0 ha +	2

Source: Turkish Statistical Institute (2006).

Figure 10: Map of Turkey

Source: geology.com, 2007.

Registration System (NFRS)[101] to prepare for controls on agricultural land. Farmers enrolled in the NFRS receive Direct Income Support[102] from the state, which includes subsidies for chemical fertilizer and diesel fuel. However, there are concerns about dependency on state subsidies and their long-term sustainability.

Key issues in Turkish agriculture

Fragmentation. Fragmentation of agricultural holdings is a significant challenge to improving production and productivity in Turkey (one estimate is that most farms yield 60 percent of their potential at most). The average parcel number is around six (the average parcel size is around one hectare) (Ulger and Cay, 2012) on an average farm landholding of 5.9 hectares. The state has an ongoing farmland consolidation process that has made progress, although it has been relatively insignificant in terms of total

101 The NFRS is a database managed by the Ministry of Agriculture and Rural Affairs comprising 2.75 million farmers (90 percent of the farm households) and 17 million hectares of agriculture land (63 percent of the 27 million hectares of agriculture land).

102 Direct Income Support (DIS) is provided on a per hectare basis and allocated once per production period directly to producers registered in the NFRS for areas between 0.1 to 50 hectares. Farmers must be associated with agricultural activity for a minimum of one production season (8-10 months) on the same land. DIS payments are made to the farmers (natural or legal persons) who deal with land-based agricultural activity regardless of the status of land tenure. Agricultural land either needs to be tilled (cultivated to produce crops) or otherwise sustained for agricultural use. Payments are independent from crop type and quantity of agricultural production. Additional DIS payments are granted to farmers who undertake soil analysis and utilize organic farming or certified seeds on their land (European Commission, 2006).

agricultural land:[103] just 2.2 percent has been consolidated so far (Akkaya Aslan *et al.,* 2007). At present, consolidation is carried out only where irrigated agriculture is practised; indeed, improved access to irrigation is a significant incentive to farmers to participate in consolidation programmes.

EU accession initiatives. The agricultural sector is undergoing a restructuring process to achieve harmonization with EU regulations.

Agricultural finance. Agricultural financing has expanded substantially with the introduction of interest-free loans for irrigation and livestock farming, and 5 percent interest rates for other agricultural activities. Loan tenures have also been extended for working capital and investment credits. The Agricultural Bank of Turkey (Ziraat Bankasi) provides most loans to farmers and cooperatives. There are also substantial support programmes for livestock genetic improvement and fodder production.

State support. The state has encouraged farmers to adopt modern techniques with mechanization and has provided infrastructural support for irrigation. The most significant of these projects is the Southeast Anatolia Project (GAP).

Strategic initiatives. An "Agricultural Basin Model" has been formed to implement efficient and rational agricultural support policies based on these basins, and to plan and increase production while protecting natural resources. Strategic and competitive products have been selected for support in each of the basins.

Investment. Private investment in agriculture accounts for a relatively small percentage of total private investments (3 percent of total capital investments in 2011). Foreign investment in primary agriculture is almost non-existent. While there have been reports of interest from Middle Eastern investors in recent years, there have been no investments, or at least any of significant scale, to date.

Historical context to farmland structure and ownership

The Ottoman Empire was an agrarian economy characterized by a scarcity of labour and capital and an abundance of land. The majority of people earned their living from small family holdings in a predominantly agricultural economy characterized as "backward and impoverished, yet possessing vast potential" (Quataert, 1975). Reforms introduced by the Land Code of 1858 gradually led to the recognition of private property on agricultural land. Peasant families had until then been considered as tenants with usufruct rights.[104] Commercialization of agriculture in the nineteenth century was driven by greater market opportunities, both domestic and export, and by the increasing monetization of the Ottoman economy. A rise in farm productivity resulted from irrigation projects, intensive agriculture and utilization of modern agricultural tools. However, smallholder production predominated and there was very limited emergence of large landholdings throughout the Ottoman Empire.

To maintain farms large enough to support "a family and a pair of oxen" (Metz, 1995), the Ottomans exempted land from Muslim inheritance policy, a practice subsequently reversed as the state reinstituted Islamic inheritance practices, sold land to gain revenues and authorized land transfers. These latter changes favoured the growth of a class of large landowners during the latter decades of the empire. By 1923, land ownership had shifted in favour of a small group with large holdings. However, during the republican period land concentration declined, a development that reflected the effects of division through inheritance. At the same time, the opening of new areas to cultivation made land available to those farmers without holdings.

103 In terms of the consolidation plan, special product land and marginal agricultural lands are limited to an "Indivisible Parcel Size" of 2 hectares. Similarly cultivated lands are limited to 0.5 hectares and greenhouse lands to 0.3 hectares. Significant progress has been made since 2003, with over 1.3 million hectares consolidated, compared with 450 000 hectares during the preceding 41 years. An additional 1.8 million hectares are currently being targeted for consolidation (Turkey Ministry of Agriculture, Food and Livestock, 2012).

104 The Land Code also enabled foreign ownership of farmland. This initially led to purchases of large tracts in fertile eras of western Anatolia, although most of the owners were forced to sell the land due to the persistence of peasant family farms and the difficulties of securing sufficient wage labourers for the farms (Pamuk, 2008).

Consequently, Turkey has a more equal distribution of land than many other emerging economies. However, political and social imperatives in the past have meant that average landholdings have remained very small.

Investments

Egeli & Co Agriculture Investment Trust, a closed-ended private equity fund listed on the Istanbul Stock Exchange, is the only fund invested in farmland in Turkey.[105] The fund has a market capitalization of around USD7.5 million (TRY13.76 million) (at 30 November 2012) and about 3 800 retail investors.

The fund focuses on livestock, arable farmland and organic farming. In livestock, the aim is to seek returns from superior management practices and economies of scale in production. In farmland, the business model targets the consolidation of land and the related provision of water supply and infrastructural services. The fund targets an allocation of 25 percent in farmland. Organic farming seeks to build scale of production to enable the employment of high-quality professional management. Investment drivers include the supply and demand fundamentals in food and agriculture, including Turkey's demographics (a young population) and proximity to EU and MENA markets.

Bati Tarim Agricultural Investments (Bati Tarimsai Yatirmlar A.S.) is the fund's investment holding company and is owned by the Egeli & Co Agriculture Investment Trust (90.9 percent) and Egeli & Co Investment Holding (9.1 percent). Bati Tarim has so far consolidated 370 acres (150 hectares) of farmland and targets a total of 1 100 acres (445 hectares). The objective is to invest in sheep production on the land. Over 100 individual titles have been involved in the initial consolidation, which illustrates the extent of fragmentation and the complexity involved in consolidating farmland. In July 2012, the fund announced the acquisition of a major stake (90.05 percent) in the dairy farm Doga Tarim Hayvancilik.

The relatively tiny scope of farmland investment opportunities in Turkey is also due to the very slow process of consolidating farmland.

Larger scale investment exists potentially in opportunities presented by the privatization of state farms. However, these opportunities generally carry additional local community covenants and other social complexities. Around 38 large farms comprising some 350 000 hectares remain in state ownership.[106] Although no official figures were available, it is understood that around half of them are currently leased to private-sector players. State farms are also periodically offered for outright sale by auction.

Beraberce (meaning "Together") is an initiative developed by Berce, a subsidiary of the Doruk Group. It creates efficient agricultural supply chains by working with groups of small farms in regions that are currently underperforming their agricultural potential due to migration of skills to urban jobs, distance to market and/or lack of capital. This concept is particularly effective where the layout of the farms enables management and equipment synergies and other economies of scale.

Berce's pilot investment in this concept is a livestock project in the Eflani district in the Black Sea region of Turkey. The project comprises some 1 800 hectares and over 3 000 individual land titles. Berce provides single management, including common services and working capital. Around half the land is leased and managed by Berce and the balance of farms includes participation by farmers (Berce provides the inputs and the owners work the farms). The objective is to improve production through proper capitalization of farms and achieving economies of scale. Berce reports that yields rose by 50 percent during the first year of operations.

105 Egeli & Co. Agriculture Investment Trust ("EGCYO") is the first Turkish closed-end fund focusing on the agricultural investment theme. The fund is listed on the Istanbul Stock Exchange and provides investors with the opportunity to invest in exposure to the growth potential in the agriculture industry through a transparent investment platform, which is regulated and monitored by the Capital Markets Board. According to the company website, "EGCYO aims to provide sustainable returns in the long-term with its value-based approach, which entails identification of and investing in the best occasions in agriculture industry".

106 TIGEM (The General Directorate of Agricultural Enterprises) owns around 350 000 hectares. This comprises 38 farms about half of which are leased to the private sector (ATA Invest, 2010).

Berce's intentions are to expand the Eflani concept into other districts throughout Turkey where uncultivated or abandoned farmland exists. Key challenges include building sufficient scale of operations to make this attractive to institutional investors. The concept is critically dependent on skilled management and good information systems that enable efficient execution of investment strategies. The scale of investment in each location is around USD20-25 million.[107] Berce estimates that there is potential for over 800 similar locations within Turkey. The investment strategy is to develop the projects and then exit to other investors, leaving in place a productive supply chain.[108]

Investment in downstream value chains is part of the Doruk Group's strategy to manage the cost of inputs (wheat) into its core flour products and in this way endeavour to eliminate earnings volatility.

Farmland market

The farmland market in Turkey is relatively illiquid and farmland prices and lease rates are relatively high by other European standards. Rental arrangements are either fixed rentals and sharecropping arrangements, or a blend of both. Some 39 percent of the land is rented, 21 percent is under fixed rental contracts and 18 percent is under sharecropping rental agreements. Rental rates are not regulated (Ciaian *et al.*, 2012). The most common practice is yearly leases with fixed values (often fixed to an absolute amount of product, e.g. 100 kilograms of cotton) payable at harvest.[109] In reality, most leases involve small plots of land and transactions between neighbours.

Farmland is currently relatively fully priced, although selected investment opportunities exist, mostly in high-value niches like organic production. Prices average around TRY30 000 (USD16 500) per hectare. Farmland prices in prime locations may be as high as TRY150 000 (USD83 000) per hectare pers. comm.). [110]

At present, farmland fragmentation and the slow pace and limited scale of consolidation in Turkey are restricting the scope for institutional-scale opportunities. Fragmentation and reliance on state farm supports also places in doubt the long-term sustainability of farming in the present circumstances. In time, competitive conditions may force a faster pace of land reform (consolidation), but this will come with major social and political challenges.

There are limited opportunities to lease state farmland assets in Turkey. Where available, they generally come with additional conditional ties, which require strong partnership with local interests. However, the Berce approach of leasing many small farms and building profitable economies of scale offers promising scope for fund investment if the concept proves itself over time.

107 Investment needed for a venture of around 3 000 hectares of land and 3 000 milking cows (personal communications).

108 Another Berce initiative is the Mus Alparsian project in Eastern Turkey, a 6 400-hectare farm recently leased through state auction. Berce is renovating this farm through the application of modern management and building expertise in large-scale farmland management. This investment will also create public awareness of the potential in this remote region and offer possibilities for expanded scale through linkages to small farmers.

109 This is typically the wheat harvest, but sometimes occurs at harvests of the particular region's predominant crop (personal communication).

110 These prices are also quoted in Bojnec (2011).

Annex 2 - Funds investing in primary agriculture and agribusiness

FUNDS INVESTING IN PRIMARY AGRICULTURE AND AGRIBUSINESS

	Funds size (USD million)	Land bank (ha)	Number of funds	Share of funds (#s)	Share of cash (USD)
EBRD countries: funds investing in primary agriculture	2 077.8	Over 1 094 294	10		
Bulgaria: REITs investing in farmland	$286	78 323 ha	6		
TOTAL EBRD region: ALL FUNDS	**$2 364**	**1 172 616**	**16**	**28,1%**	**10,5%**
EBRD countries: Funds seeking funding (estimate)	2 260	600 000 ha	3		
[TOTAL EBRD region - existing and proposed funds]	$4 624	1 772 616	19		
NA, SA, A/NZ: funds investing in primary agriculture	Over 18 749 million	Over 6 174 882	37	64,9%	83,2%
NA, SA, A/NZ: funds investing in food and agribusiness	Over 525 million	119 945 ha	4		
TOTAL North America, South America, Australia, New Zealand: ALL FUNDS	Over 19 274 million	6 294 827 ha	41		
Africa: funds investing in primary agriculture	$1 425 mln		4	7,0%	6,3%
Africa: funds investing in food and agribusiness	$1 188 mln		11		
TOTAL Africa: ALL FUNDS	**$3 613 mln**		**15**		
TOTAL - ALL REGIONS (both food and agribusiness)	**Over 25 250 mln**				
of this total:					
Funds investing predominantly in primary agriculture	Over 22 537 mln	Over 7 947 498	57	100,0%	100,0%
Funds with mixed purpose investing in food and agribusiness	Over 2 713 mln	Over 119,945	15		
TOTAL: Funds invested - both primary agriculture and mixed food and agribusiness	Over 25 250 mln	Over 7 467 443	72		
TOTAL: Funds seeking funding	2 260		3		

	Funds size (USD million)	Number of funds
Funds investing in publicly-listed agricultural equities globally	Over $2 900 mln	17

EBRD COUNTRIES: FUNDS INVESTING IN PRIMARY AGRICULTURE AND AGRIBUSINESS

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
FUNDS - CURRENTLY FUNDED AND INVESTING								
1	Altima One World Agriculture Fund	2007	125,0	73 300	United Kingdom, United States	Czech Republic, Poland, Romania,Serbia, Slovakia, United Kingdom	Various institutions, IFC has invested USD75 million	Altima Fund is a hybrid fund that combines listed (25%) with unlisted investments (75%). Altima invests primarily in farmland and in world-class farm operators ("Agro Champions"). The exit strategy envisages IPOs or sale to strategic investors. The fund allows investors to co-invest in acquired assets. Altima has a shareholding in Spearhead International, a private farming group with operations in the Czech Republic (22 000 hectares), Poland (29 800 hectares), Romania (17 800 hectares), Slovakia (3 700 hectares), the United Kingdom (4 800 hectares) and Serbia. The fund is registered in the Cayman Islands. Fee structure is 2% annual management fee plus 20% performance fee. (www.spearheadinternational.com) *[Note:* investment in Spearhead is assumed as 20% of Altima Fund's original capitalization of USD625 million.]
2	Ceres Agrigrowth Investment Fund	2006	58,0	21 400	Bulgaria	Bulgaria	Various institutions (see next box)	Ceres Fund focuses on farming and acquisition of arable lands. The fund investment strategy is to seek returns through convergence of farmland prices towards those in other EU member states, further land appreciation as a result of consolidation of plots, increased yield per unit as a result of EU subsidies and support, and increased profitability from improved operating practices. The fund is managed by Rosslyn Capital Partners (www.rosslyncp.com). Ceres is the third largest institutional investor in farmland in Bulgaria. Investors include Raiffeisen Centrobank AG, funds Firebird Management, Black River Asset Management, Mezzanine Management, and fund manager Rosslyn Capital Partners. The fund investment is EUR45 million. (www.ceres.bg)
3	Egeli & Co Agriculture Investment Trust	2010	7,5	150	Turkey	Turkey	Llisted on the Istanbul Stock Exchange	The fund is Turkey's first closed-end fund focusing on agriculture investment. The fund invests in the food value chainto form a portfolio of agribusinesses. The goal is to establish partnerships with promising companies, which are ready to increase their performance with the fund's financial and know-how support. The market cap is TRY13.76 million (December 2012). (www.egcyo.com)
4	NCH Agribusiness Partners Fund I	2007	1 002.8	625 000	United States	Bulgaria, Kazakhstan, Moldova, Romania, the Russian Federation, Ukraine	NCH Capital is General Partner. Various insitutional and other investors.	The fund invests in primary agricultural production and related agribusiness assets in the Russian Federation and Ukraine. Most assets are actively managed by operating subsidiaries. The fund has also acquired farmland and agribusiness assets in Bulgaria, Kazakhstan, Latvia, Moldova and Romania. Terms include an annual management fee of 2% on funded commitments and 20% carried interest. (www.nchcapital.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
5	NCH New Europe Property Fund I	2005	257,8	202 000	United States	Ukraine	NCH Capital is General Partner. Various insitutional and other investors.	NCH Capital's investment strategy is to seek deeply discounted assets, restructure and improve these assets, and steer them towards optimal exits. The fund owns majority shares in three joint venture farming companies, and actively operates about 35 farms and elevator companies in Ukraine. Terms include an annual management fee of 2% on funded commitments and 20% carried interest. (www.nchcapital.com)
6	North Bridge AgRoInvest	2008	17,7	4 083	Norway	Romania	Fund invested into by North Bridge Agri Invest AS fund of funds	AgRoinvest Fund seeks to capitalize on the combination of low land prices in Romania and strong demand for agricultural produce. The objective is to secure land assets for revaluation, with a substantial proportion of land being acquired coming through acquisition of parcels, assembled into operable units over time. The fund controls both owned and leased land. Parent company, North Bridge Agri Invest AS, operates as a fund-of-funds investment company. The fund's objective is to invest in international agricultural funds and investment companies, which are directly or indirectly exposed to agricultural properties. (www.northbridge.no)
7	Rabo Europe Farm Fund	2008	409,0	50 000	he Netherland	Central Europe within the EU	Significant institutional investors are TIAA-CREF and Dutch pension fund PGGM	Rabo Farm Europe Fund is a closed-ended fund that invests in farmland within the EU-27 with a focus on Central and Eastern European countries. The fund has "a maximum horizon of 15 years" and total commitments of EUR315 million. The fund "focuses on investing in farms, farmland and onsite farming infrastructure". The investment strategyis to acquire underperforming farms, and the focus is on arable crop farming and closing the yield gap. Farms are generally owned and leased to specialist farm operators. Potential exits include asset sales to existing leaseholders or other investors, or IPO or sale of the fund to strategic investors. *[Note:* land holdings are an estimate.] (www.rabofarm.com)
8	SigmaBleyzer Southeast European Fund IV (SBF IV)	2007	112,0	70 000	United States	Ukraine	General Partner is SBGF BV. OPIC has USD50 million committed to this fund. EBRD has EUR50 million invested.	SigmaBleyzer is one of the largest and most experienced private equity investors in Eastern Europe. The firm specializes in investments in turnaround and distressed situations. The firm manages around USD1.0 billion in assets in six investment vehicles. One of the SigmaBleyzer Southeast European Fund IV (SBF IV)'s main holdings is HarmeliaInvestments Limited, whose core business is arable farming. Harmelia owns and operates farming and storage operations in the Kharkiv and Poltava regions in Ukraine. SBF I'sV total fund size is EUR250 million – of this, EUR85 million (USD112 million) is invested in Harmelia. The fund is a Netherlands Limited Partnership. (www.sigmableyzer.com www.harmelia.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
9	UFG Real Estate Fund	2007	48,0	28 360	the Russian Federation	Bryansk region in the Russian Federation	UFG Real Estate Fund	UFG Real Estate Fund is fully invested/committed in five early vertical development projects in Central the Russian Federation. One of these investments is UFG Agro Partners (invested July 2008), which owns RLB AGRO, operating 28 360 hectares in Bryansk. This is a holding with production of wheat, barley and rapeseed. Additionally, there are grain sheds with 60 000 tonnes capacity and grain drying and handling facilities. The strategy involves achieving "sustainable returns through initial registration of title and subsequently development and management of modern farming operations". (www.re.ufgam.com/portfolio/ www.rlbagro.com)
10	Vostok Agro	2008	40,0	20 000	United States	the Russian Federation	QVT Financial	OOO Vostok Agro is an investment made in circa 2008 by QVT Financial, a US-based hedge fund. Amount invested is an estimate. No official disclosures or website available.
	Sub-total - funds investing		**2 077.8**	**73 450 ha**			***Note:* Fund amounts include both committed and target funding**	

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
Other fund and equity structures - currently seeking funding								
1	AVG CIS Agricultural Opportunities Fund	2012	500	Not disclosed	the Russian Federation	CIS & the Russian Federation	Currently seeking funding	AVG Capital Partners (AVG) is focused on investments in Russian agriculture. AVG has a 29% controlling public equity stake in Razgulay, a major Russian agro-holding and one of the leading sugar and rice producers. The firm pursues investments which have synergies to existing Razgulay operations, and to leverage the returns by accessing subsidized Russian state credit for agriculture investments. Investment proposals include farmland, meat production and greenhouse vegetable production. Proposed exits include IPO, sale to strategic investor or private sale of stock. Fund size: first stage USD200 million, with a target size of USD500 milion to USD1.5 billion. This may be in one or several funds depending upon investors. Proposed fee structure: management fee 1.50% per annum, performance fee 20%. (www.avgfund.com/funds)
2	NCH Agribusiness Partners Fund II	2012	1 160	600 000	United States	the Russian Federation, Ukraine	Currently seeking funding	The fund will invest in primary agriculture and related agribusiness assets in the Russian Federation and Ukraine. The fund may also acquire farmland and agribusiness assets outside of these principal markets (up to 10%). The target size is USD1.16 billion. (www.nchcapital.com)
3	VTB Capital	2012	600	Not disclosed	the Russian Federation	CIS & the Russian Federation	Currently seeking funding	The fund structure proposed for this investment has since been changed to an investment company structure. VTB will invest in primary agriculture and related agribusinesses. Target investment total amount is proposed USD600 milion to USD1.0 billion. (www.vtbcapital.com)
	Sub-total - structures *currently seeking* funding		**2 260**	**600 000 ha**			***Note:* Funds amounts are target funding**	
	Total		**4 338**	**1 694 293 ha**				

#	EBRD-region analysis	USD	Hectares
6	Dedicated funds	1 620.0	773 933.0
4	General funds	457,8	320 360.0
10	**TOTAL**	**2 077.8**	**1 094 293.0**

BULGARIA: REITs INVESTING IN PRIMARY AGRICULTURE

#	Name	Vintage year	Market cap (USD)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
1	Advance Terra Fund	2005	$129,5 mln	29 486	Bulgaria	Bulgaria	Listed on Bulgarian Stock Exchange. IFC holds 17.7%.	The fund is the largest landlord in Bulgaria after the government. The focus is to seek capital appreciation by consolidation of acquired plots. The fund acquires and leases land. The fund also invests in land located within the borders of the largest cities in Bulgaria. Shareholders include Karoll Finance 18.61%; IFC 17.70%; others 63.69%. (www.karoll.net)
2	Agro Finance	2006	$40,3 mln	14 080	Bulgaria	Bulgaria	Listed on Bulgarian Stock Exchange	Agro Finance invests in agricultural territories – arable lands (fields, orchard and vegetable gardens, vineyards, meadows, etc.) and uncultivated lands; landed properties in forest territories – forests and woodlands; landed properties in urbanized territories (towns and villages and settlement formations), intended for residential, public-servicing, production, storage, resort, villa, sports and entertainment functions. (www.agrofinance.bg)
3	Bulgarian Real Estate Fund	2005	$1,7 mln	2 330	Bulgaria	Bulgaria	Listed on Bulgarian Stock Exchange	The fund partially invests in agricultural land projects consisting of investments in high-category land plots. The properties are located in a top agricultural location and a wheat-growing area, known for its rich soils and for the highly developed and mechanized crop growing process there. This is a multi-sector fund with about 8% invested in agriculture (note: *market cap is prorated to reflect agri holdings only*). (www.brefbg.com)
4	Bulland Investments	2005	$8,5 mln	1 810	Bulgaria	Bulgaria	Listed on Bulgarian Stock Exchange	The fund invests in land that is used for agricultural production; consolidation of land plots with theaim of increasing its value and attractiveness for agricultural producers; renting-out land properties to agricultural producers; management of land properties; creating a diversified portfolio consisting of agricultural properties in different regions of the country. (www.bulland.org)
5	ELARG Agricultural Land Opportunity Fund	2005	$92,5 mln	25 117	Bulgaria	Bulgaria	Listed on Bulgarian Stock Exchange	Main purpose of the fund "is to organize the acquisition, leasing and expansion of agricultural land".ELARG recently announced its decision to wind up because of the poor performance of its shares, which have traded at a large discount to asset value. Shareholders include Agromanage 49.50%; Bio Farming 18.58%; Unicredit Bank Austria 5.49%; Rompharm Company 5.02%; others 21.41%. (www.elarg.bg)
6	Mel Invest	1996	$13,3 mln	5 500	Bulgaria	Bulgaria	Listed on Bulgarian Stock Exchange. 90.59% owned by Venture Equity Bulgaria	Mel Invest owns principally agricultural land in the municipalities of Bourgas, Pleven and Yambol. The company has four major subsidiaries and minority interests in several agricultural companies that primarily produce bread and meat products. (www.fzz-melinvest.com)
	Total		**$286 mln**	**78 323 ha**				

Note: Market capitalization as at 28 December 2012 (Bloomberg)

NORTH AMERICA, SOUTH AMERICA, AUSTRALIA, NEW ZEALAND - FUNDS INVESTING IN PRIMARY AGRICULTURE AND AGRIBUSINESS

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
Funds - predominantly primary agriculture								
1	Adveq Real Assets Harvested Resources L.P.		$300,0	Not disclosed	Switzerland	Central and Eastern Europe, Latin America, North America, Oceania	Various institutions	Adveq's allocation to agriculture is concentrated in Adveq Real Assets Harvested Resources, LP, structured as a closed-end fund. The focus is on farmland investments, owning and [primarily] operating the farmland, or leasing in select situations. Adveq started investing in agriculture five years ago and, and has additional exposureto agribusiness through other Adveq generalists fund managers. Adveq Real Assets Harvested Resources, LP is hard-capped at USD300 million. An opportunistic allocation of 0-30% in timber would only happen if the fund can identify the right opportunities at the right price. Adveq's real assets portfolio aims to bring diversification and inflation protection to an investors' portfolio as well as capital efficiency (risk capital), hence PE-type deals are excluded from the core investment in farmland. The platform is global, with a keen focus on Australia, Canada, Latin America and New Zealand. Specific commodities include both crops and livestock, and have been selected based on strong demand drivers and supply constraints. Returns are composed of the current income from harvesting the commodity, as well as capital appreciation of the land with increased productive capacity. Real assets provide inflation hedging, lower risk (because they are asset-backed) and no need for currency overlay. Adveq anticipate net 12% IRR on investments. (www.adveq.com)
2	American Farmland Co	2010	$100,0		US REIT	United States		The REIT constructs its portfolio with an eye to diversity, from citrus groves in the southeast to soybeans in the midwest to cotton and rice in the Mississippi Delta. The company owns and seeks to acquire additional high quality row and permanent cropland leased to qualified tenants for operation. (www.americanfarmlandcompany.com)
3	Agcapita Farmland Fund	First fund launched 2008	$60,0	Not disclosed	Canada	Saskatchewan Canada	Canadian investorsonly	Agcapita currently manages three funds with USD18-20 million each. Agcapita's funds directly hold diversified portfolios of farmland in western Canada, and in particular Saskatchewan. Investors are provided with direct investment in farmland combined with a model of front-end loaded cash rents. AgCapita is Canada's only RRSP eligible farmland investment fund. The AgCapita IV fund is due to launch in April 2013 (CAD20 million). Fund open to investors only in certain provinces of Canada. AgCapita is one of three farmland investment managers inCanada - along with Assiniboia and Bonnefield. (www.farmlandinvestmentpartnership.com)
4	Agro Ecological NZ Farmland Fund	2010	$50,0		United Kingdom	New Zealand		Agro-Ecological is a specialist asset management firm, focused on investment in agriculture and farmland as an asset class managed ecologically/organically. The fund is focused on investment in, and the ecological management of farmland in New Zealand (organic farming). The current portfolio is structured as 70% dairy farming, 15% beef and sheep, 15% mixed crops. (www.agro-ecological.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
5	Altima One World Agriculture Fund	2008	$800,0	1 100 000	New York/ London	Australia, Eastern and Central Europe, South America, sub-Saharan Africa	Various institutions, IFC has invested USD75 million	Altima Fund is a hybrid fund that has a mandate to combine listed (25%) with unlisted investments (75%). Altima invests primarily in farmland and in world class farm operators ("Agro Champions"). Its exit strategy envisages IPOs or sale to strategic investors. The fund allows investors to co-invest in acquired assets. Altima has shareholdings in portfolio companies: El Tejar in Argentina, CENAFARM in Zambia, Australian AgribusinessGroup, and Spearhead International in Poland, Romania and elsewhere in Europe. The fund is registered in the Cayman Islands. The fee structure is 2% annual management fee plus 20% performance fee. The total fund is noted as USD1.1 million *[Note:* assumed that ~USD800 invested in Latin America and Australia]. (www.altimapartners.com)
6	Aquila Capital Agri Opportunity Fund (AgrarInvest fund)	2009	$400,0	Not disclosed	Germany	Australia, Brazil and New Zealand		Aquila has several investments in farm properties that produce dairy, beef, sugarcane and crops. Aquila and AgInvest (a rural assets management company) have set up AAGreenINVEST, an investment management company based in New Zealand which manages NZD400 million in pastoral farming assets ("around 50 farms"). Aquila's Capital Farms Team acts as an agribusiness investment manager with a global presence. The business model combines a horizontal approach (thereby enabling the best possible strategy analysis through global presence) with a vertically integrated structure (i.e. macro and micro management at first hand). Aquila Capital Farms Pte. Ltd., Singapore is the "macro manager", with subsidiaries and representations in Australia, Brazil, Romania, New Zealand, Uruguay and United States/Canada. The ere have been no disclosures on recent investments, but total exposure is now probably in excess of USD400 million. (www.aquila-capital.de www.aginvest.com)
7	Assiniboia Farmland Limited Partnership	2005	$23,0	47 000	Canada	Saskatchewan Canada		Assiniboia Capital Corp. launched the first in a series of four farmland limited partnerships in 2005. The partnerships were designed to provide an opportunity for Canadian investors to participate in farmland ownership in Saskatchewan. In 2009, the four Assiniboia Farmland limited partnerships were merged into one entity, now known as Assiniboia Farmland Limited Partnership, the largest farmland fund in Canada. (www.assiniboiacapital.com)
8	Australian Pastoral Funds Management	2012	$45,0	350 000	Brisbane Australia	Australia	Reportedly four institutional investors, including Municipal Employees' Retirement System (Michigan)	Australian Pastoral Funds Management Pty Ltd, a fund management entity, has been formed to assemble investor capital and acquire and operate large-scale livestock (cattle and sheep) properties producing mainstream pastoral products for both the domestic and export markets of Australia. This company is an association between Alan Hayes and his family, Pitt Capital Partners, Equilibrium Capital LLC, and a number of private individuals. Returns are anticipated from both operational profits and capital growth in both land and livestock values. The entity will take advantage of rising global meat consumption and Australia's position in producing competively priced feed stocks. (www.apfm.net.au)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
9	Bonnefield Canadian Farmland Limited Partnerships I and II	2010	$43,0	10 000	Canada	Canada	Canadian investorsonly	Bonnefield is "Canada's only national farmland investment manager". They manage two private unlisted limited partnerships investing in Canadian farmland. AUM CAD43.5 million. Investment objectives are to provide exposure to stable lease income and capital appreciation from Canadian farmland (in Alberta, Manitoba, Ontario, Saskatchewan). Funds are available only to Canadian investors. The minimum investment is CAD150 000 and the management fee is 1.25%. Bonnefield Canadian Farmland LP I currently holds 15 000 title acres of farmland. Returns are generated through a combination of lease income and capital gains. Farmland LP I is now closed to new investment and completed its farmland acquisition programme in 2012. In January 2013, Bonnefield announced the closing of its second farmland partnership, Bonnefield Canadian Farmland LP II, which is currently deploying capital and providing land lease financing to farmers across Canada. (www.bonnefield.com)
10	Brookfield Brazil Agriland Fund		$400,0	220 000	Canada	Brazil		The fund invests in agriculture in Brazil "targeting regions that have the ability to produce a number of agricultural products in a cost-competitive manner and provide some product and geographic diversity, while maintaining a degree of asset concentration to generate economies of scale through large-scale farming". It manages 220 000 hectares of agricultural land, located in six Brazilian states in the "Cerrado" area, utilized for cattle, sugarcane, soy, corn, rice, rubber trees and pineapple crops. The fund target is reported as USD400 million. (www.brookfieldbr.com www.brookfield.com)
11	Canadian Pension Plan Investment Board (CPPIB)		2 000	Not disclosed	Canada	Australia, Brazil, Canada, United States, others		The CPPIB propose to invest up to USD2.0 billion in farmland in four principal global regions as part of the fund's diversification into real assets. Investments will be made on an owned and leased investment model. (www.cppib.ca)
12	Ceres Partners	2009	$187,0	12 300	United States	United States	178 investors consisting of individuals, trusts, pension and insurance coys, endowments and foundations	Ceres Partners is a limited liability company organized in 2009 to serve as investment manager and general manager of Ceres Farms, LLC, Heartland Farms, LLC and any successor investment funds. Ceres Partners manages a portfolio of properties totaling over 30 400 acres consisting of 114 farms in the states of Indiana, Illinois, Michigan, Ohio, Tennessee and Kentucky. Ceres Partners believes that the purchase decision is critical and looks to identify undervalued farms that generate positive cash flows. Risk is reduced when a farm is bought at the right price with multiple sources of return. Ceres also looks to improve its farms, which increases the long-term value of the property and compels a higher rent. Ceres Partners actively manages each farm and selects a proven farmer from its existing network of preferred producers who desire to expand as Ceres acquires more farmland. (www.cerespartners.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
13	Colvin Farmland LP		$600,0		United States	United States	Institutions and individuals	Colvin & Co. is an agriculture-focused investment manager with offices in Minneapolis and New York. Colvin & Co. is the General Partner of two farmland funds – Sather Agriculture LP (farmland in South Dakota and Wisconsin) and Colvin Farmland LP – and also manages separate accounts for individuals and institutions. Thesefunds provide investors with an opportunity to invest in midwestern farmland. Funds are *estimated at* a total of USD600 million. (www.colvin-co.com)
14	Duxton Agricultural Land Fund (and other funds)		$430,0	115 000	Singapore	Global (4 continents)	Institutions and individuals	Duxton manages approximately USD600 million, of which USD430 million is invested in agriculture – predominantly as direct investments. Duxton is one of the very few managers with a truly global direct investment footprint and track record. Duxton has operating investments on four continents.To date, the company manages approximately 115z 000 hectares of farmland across four continents. Clients comprise institutions including global pension funds, sovereign wealth funds, insurance companies and asset managers, family offices, private banks and UHNWIs. Duxton is the delegated manager of Deutsche Asset Management's DWS Vietnam and DWS Global Agricultural Land & Opportunities Fund. The firm offers three funds in agriculture: Duxton Agricultural Land Fund, which comprises strategic land-based direct investments with a private equity like tenure; the Duxton Agricultural Land Trust, which offers a hybrid structure with limited liquidity; and the Duxton Agricultural Commodities and Equities Sub-Fund, which offers exposure to agriculturesector-related equities and commodities. (www.duxtonam.com)
15	Farmland LP		$43,0	2 540	United States	United States		Farmland LP is a US private equity fund that buys conventional farmland and converts it to certified organic, sustainably managed farmland. Farmland LP, adds value to farmland by converting it to organic farmland and managing it in an ongoing manner. It currently owns ~2 540 hectares across five farms. The Fund has "USD43 million in assets and 75 investors". (www.farmlandlp.com)
16	Full Harvest Agricultural Opportunities Fund	2007	$100,0	16 100	United States	United States	REIT	The fund invests in farmland in the United States. It is reported as owning "over 40 000 acres". (www.chesscapitalpartners.com)
17	Galtere Global Agribusiness Fund	2010	1 000	25 000	United States	Australia, Brazil, Uruguay		Galtere is currently developing a private equity agribusiness fund that "aims to capitalize on the lack of agriculture-related infrastructure in Brazil and plans to make strategic investments involving agricultural warehousing and grain storage". The fund's objective is to make direct investments in industrial-scale commodity production facilities across the three regions, with the intention of holding assets for seven years before exiting through a trade sale or initial public offering. The fund target size is USD1 billion. (www.galtere.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
18	Gladstone Land Company	1997	$75,5	650	United States	United States	Farmland REIT	Gladstone Land is a real estate investment company that pays monthly dividends to its stockholders. Gladstone Land invests in farmland located in major agricultural markets in the United States that it leases to corporate and independent farmers. The company currently owns 12 farms (appraised at approx. USD75.5 million), predominantly concentrated in locations where its tenants are able to grow row crops, such as berries, lettuce andmelons, which are planted and harvested annually or more frequently. The company also may acquire property related to farming, such as storage facilities utilized for cooling crops, processing plants, packaging facilities and distribution centers. Its investment strategy is to maximize returns through a combination of monthly cash distributions, sustainable long-term growth in cash flows from increased rents, and potential long-term appreciation in the value of farm properties upon future sale. REIT is funded by a mix of equity and debt. Gladstone raised net proceeds of USD51.5 million in an IPO in January 2013 and is listed on NASDAQ Global Market (ticker: LAND) as a farmland REIT. (www.gladstoneland.com)
19	Greenfield	2005	$30,0	21 000	New Zealand	New Zealand		Greenfield is NZ's leading institutional fund manager specializing in agricultural investment management. Greenfield actively manage their fund investments. This approach is unique in NZ agriculture and is designed to maximize productivity and cash yield from scale agricultural investment portfolios. Greenfield has investment products available targeting: pastoral farmland, carbon forestry, dairy and viticulture. It expects to generate total returns of 15–25% over a 10-year holding period and annual cash yields of 5–10%. Greenfield Rural Opportunities Fund, the inaugural fund, closed in 2006 after raising USD30 million in equity. The fund acquired 21 000 hectares of underperforming pastoral farmland and focused on capital reinvestment to increase productivity levels. The properties are actively managed to deliver yields of 10-12%. The fund targets yields of 10- 12% and a target IRR of 25%. (www.greenfield.co.nz)
20	Hancock Agricultural Investment Group	1980s	1 700	113 804	United States	Australia, Canada, United States		Hancock Agricultural Investment Group (HAIG) is a subsidiary of Manulife, Canada's largest insurer. Hancock invests through Hancock Global Farmland Income Fund in both row and permanent crops. AUM are USD1.5 billion, making Hancock one of the largest global farmland managers. They construct farmland portfolios diversified by geography and crops based on parameters that reflect a client's risk/return profile. The minimum portfolio is USD50 million. The land bank is 111 000 ha in the United States, 2 400 ha in Australia and 40 ha in Canada. (www.haig.jhancock.com)
21	Insight Global Farmland Fund	2008	$500,0	Not known	United Kingdom	Global		Insight is a fund of farmland holdings, aiming to provide investors with exposure to projected growth in the agricultural sector, "as a result of the anticipated supply and demand imbalance over the next 10 to 20 years". The fund provides investors with exposure through a variety of holdings, which include stakes in exclusive vehicles incorporated to hold farmland assets, shares in listed farmland companies, direct ownership of farmland, debt covenants over farmland and stakes in existing farmland funds. The management fee is 1.50%. The fund amount is an estimate of funds committed (USD500 million). (www.insightinvestment.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
22	JPT Capital Agrifund	2011	$81,0	Not known	Mauritius	Australia	Institutional and retail investors	The fund invests in commercial farmland in Australia, primarily focused on wheat production. It is envisaged that the fund will be wound-up after 8-10 years. At this time the land, and all other assets, will be sold and the proceeds returned to the investors. Capital appreciation will depend on the value of the land at this time. The fund target is GBP50 million. (www.jptcapital.com)
23	Laguna Bay Pastoral Company		$40,0	Not known	Australia	Australia	Currently raising new fund	Laguna Bay Pastoral Company is a specific purpose funds group designed to facilitate the investment in agricultural properties by institutional investors. The company provides a full service agricultural funds management vehicle, responsible for both asset and operational management. Partners currently own USD40 million of agricultural assets in Australia plus further funds under management. Laguna has achieved audited EBITDA operating yields of 10-11% per annum averaged over the last 10 years from fully developed assets. It is currently seeking USD600 million for a new fund promising annual returns of "about 10%". (www.lagunabaypastoral.com.au)
24	Lumix AgroDirect Fund	2009	$4,0	N/A	BVI	Argentina, Brazil, Paraguay, Uruguay		The Lumix fund makes direct investments in agriculture in Latin America. The fund invests in the production of agricultural commodities on leased farmland. Production is outsourced to local agricultural operating partners. The fund does not own land. Lumix targets a 10-25% return for investors. (www.lumixcapital.com)
25	Macquarie Crop Partners	2010	$800,0		Australia	Australia, Brazil		The fund focuses on grain and oilseed production in Brazil and Australia. It aims to provide investors with ongoing income generated by the sale of the produce and capital growth returns through ownership of the land and increasing land values. Australia and Brazil were chosen for their climate, availability of large properties, mature agricultural industries and access to overseas markets for exporting produce. The fund target is USD800 million. (www.mirafunds.com)
26	Macquarie Pastoral Fund	2007	1 000	3 500 000	Australia	Australia		The fund owns 100% of Paraway Pastoral Co who operate large-scale sheep and cattle enterprises across Australia. The fund is one of the largest pastoral land owners and operators in Australia. Paraway has purchased 30 properties and has aggregated these into 17 pastoral businesses, totalling 3.5 million hectares. The current total land holding has the capacity to run approximately 220 000 cattle and 240 000 sheep. (www.macquarie.com www.parawaypastoral.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
27	Pampa Agribusiness Fund	2005	$365,0	Not disclosed	Argentina	Argentina, Brazil	IFC ($20 mln) invested in this fund.	Pampa is an investment firm that has been a pioneer in agribusiness investing in Latin America. In 2002, they were one of the first vehicles to offer the opportunity to invest in farmland in South America. In 2007, through their current fund, Pampa offered additional exposure to other opportunities across the agribusiness value chain. The investor split is: high-net worth 37%, institutional investors 31%, endowments 16%, multilateral 12%, generalpartner 4%. The fund manager is Pampa Capital Management (www.pampacapital.com)
28	PrimeAg Agricultural Fund	2011	$600,0		Australia	Australia		PrimeAg will "endeavour to acquire assets at attractive prices and to expand the fund progressively, in conjunction with new investors focusing on cotton and winter crops". Anticipated returns are "*6-7% over a 10 year cycle*". The proposed fund target is USD600 million. The fund is managed by PrimeAg Australia Limited, a company on the Australian Securities Exchange, which invests in agricultural properties in Australia. The company recently announced plans to "privatize the assets" in order to unlock shareholder value which was not being recognized in the company's stock market price. (www.primeag.com.au)
29	Rural Funds Management RiverBank Fund	2005	$280,0	Not disclosed	Australia	Australia		Rural Funds Management Limited (RFM) is a fund and asset manager that specializes in Australian agriculture. RFM manages a portfolio of large-scale farming and agricultural enterprises for investors who seek to diversify portfolios away from traditional equity and property markets. The primary assets are in land, water, infrastructure, poultry, cattle, sheep, viticulture, cotton and almonds. RFM is the responsible entity for 10 agricultural investment funds and, as of 30 June 2012, had approximately USD280 million of agricultural assets under management in Australia. *Riverbank Fund* is a unit trust which aims "to provide investors with consistent, risk-adjusted returns generated through the acquisition and long-term lease of almond orchards and water entitlements near Hillston, New South Wales." (RiverBank Fund AUM is ~USD47million. The management fee is 3.93%). (www.ruralfunds.com.au)
30	Sustainable Agriculture Fund	2009	$145,0	29 188	Australia	Australia		The fund is an unlisted investment fund which owns and operates five farms involved in winter and summer crops, irrigated and rainfed crops, Angus beef cattle and four pasture dairies. (www.sustainableag.com.au)
31	Teays River Investments Ag Real Value Fund	2012	$900,0	Not disclosed	United States	United States		Teays River Investments, LLC, is a privately held holding company based in Carmel, Indiana, that invests in and manages assets in the agricultural sector. As a long-horizon investor of integrated agricultural assets in the United States, the company seeks "to create value for our partners and deliver sustainable returns for investors, by working with their operating teams and production partners to create vertically integrated agricultural systems that are built on the stewardship of productive natural resources". (www.teaysriverinvestments.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
32	TIAA-CREF Global Agriculture LLC	2012	2 000	300 000	United States	Australia, Eastern Europe, Latin America, North America	Consortium of pension funds (see next box)	TIAA-CREF's Global Agriculture LLC plans to invest USD2.5 billion in farmland globally. Investors include AP2, one of the largest pension funds in northern Europe with about USD32.1 billion under management; British Columbia Investment Management Corporation (bcIMC), an independent investment management company thatmanages about USD91.6 billion; and the Caisse de dépôt et placement du Québec, which manages funds for public and private pension and insurance plans and has about USD161 billion in net assets. Most recent news (February 2013) includes acquistion of farming properties from PrimeAg in Australia. (www.tiaa-cref.org)
33	TIAA-CREF		2 500	250 000	United States	Australia, Brazil, United States		TIAA-CREF currently manages "about USD2.5 billion in more than 400 properties totaling (more than) 600 000 acres (~250 000 ha) of farmland in the United States, Australia, South America and Eastern Europe." TIAA-CREF is a US financial services organization with USD487 billion in assets under management (as of 31/3/12) and is the leading provider of retirement services in the academic, research, medical and cultural fields. (www.tiaa-cref.org)
34	UBS AgrInvest	1983	$675,0	62 300	United States	United States		UBS AgrInvest LLC holds an agricultural land portfolio spread over 14 states and 30 crops. It has a structure of tailored portfolios with a minimum investment of USD50 million. Portfolio and investment strategies maintain a representative exposure to the universe of farmland investments while exploiting pricing inefficiencies across local markets. Portfolios are diversified geographically and across land used in the production of 25 different row,vegetable and permanent crops. All properties are leased to third-party operators. UBS AgriVest LLC is a SEC-registered investment advisor and was one of the first investment managers to be appointed by pension funds to invest in farmland on their behalf. (www.ubs.com)
35	US Farming Realty Trust Fund	2010	$300,0	Not disclosed	United States	United States		The US Farming Realty Trust is a USD300 million institutional fund dedicated to investing directly in farming properties. Property types include row crops, pasture land, dairy farms and permanent crops (i.e. citrus). The firm pursues acquisition of both domestic and international opportunities. (www.intlfarming.com)
36	US TRUST		$140,0	Not disclosed	United States	United States		The U.S. Trust "directly coordinates the management of over 1.6 million acres of farm and ranch land" (as at March 2012). The gross cash return is anticipated at 5.5 to 6% per annum from farm income. (www.ustrust.com/ust/pages/SAM-farm-and-ranch.aspx)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
37	UK Agricultural Land Fund Brooks MacDonald	2010	$32,0	Not disclosed	United Kingdom	United Kingdom	Listed fund	The UK Agricultural Land Fund invests in arable farmland and related buildings, which are managed as a portfolio of tenanted farms, with the aim of capital growth. The tenancies are managed by the Property Adviser, Chesterton Humberts, and the land is farmed by tenants who grow predominantly cereal crops. Braemar Group PCC Limited UK Agricultural Land, an Open Ended Investment Company, is listed on the Channel Island Stock Exchange LBG (CISX). The target size is USD32 million. The entry fee is 5% and the management fee is 1%. (Braemar Estates is the specialist property management division of Brooks Macdonald Group plc. Fund has reportedly raised GBP12.3 million and invested in five farms). (www.brooksmacdonald.com)
	Sub-total - Predominantly primary agriculture		**Over $8.549 mln**	**650 ha**		***Note:*** **Fund amounts include both committed and target funding**		

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
Funds - mixed objective - food and agriculture								
1	Al-Hadharah Boustead	2007		19 945	REIT launched in Malaysia	Malaysia		The strategy is to own and invest primarily in plantation assets comprising plantation estates and mills. As at 30 June 2012, the fund comprises 12 oil palm estates and three palm oil mills in Peninsular Malaysia. (www.al-hadharahboustead.com.my)
2	Amerra Capital Agri Fund II	2012	$500,0		United States	Latin America, United States		The fund targets debt instrument investments in agricultural producing, processing and marketing companies in the Americas.
3	The Gulamerah Fund	2008			Cayman Islands	Indonesia		This proposed fund will acquire raw agricultural land and existing plantations in Indonesia and cultivate them on a sustainable and organic basis. The focus is on high quality, single plantation organic cocoa, and palm trees to produce palm sugar. The management fee is 2.5%; the performance fee is 20%; and the hurdle rate is 10%. (www.thegulamerahfund.com)
4	UCGI Cypanga Latin American Opportunities	2012	$25,0	100 000	United Kingdom	Colombia, Peru, Uruguay		The fund invests in greenfield projects and operating companies in the agriculture, energy and forestry sectors, aswell as infrastructure and real estate, looking broadly across Columbia, Peru and Uruguay. The fund has investedin Union Agriculture Group, one of the largest agricultural landholders in Uruguay (100 000 ha) and a leading producer of agricultural products. (www.ucginvestments.com www.unionagrogroup.com)
	Sub-total - Multi-purpose food and agriculture		**Over 525 million**	**119 945 ha**		***Note:*** **Fund amounts include both committed and target funding**		
41	**TOTAL**		**Over 19 274 million**	**6 294 827 ha**				

SUMMARY OF FUNDS INVESTING PREDOMINANTLY IN PRIMARY AGRICULTURE

Analysis by region	Amount
Australia	2 191.00
Canada	126,00
South America	769,00
New Zealand	80,00
United Kingdom	32,00
United States	3 120,50
Global (multi-country focus)	12 430.00
	Over 18 749 million

* May include combinations of predominantly Australia, Brazil, Central and Eastern Europe (not in CIS) and the United States. Note: These are approximate amounts and include a mix of committed and target funding (where data are provided).

AFRICA - FUNDS INVESTING IN PRIMARY AGRICULTURE AND AGRIBUSINESS

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
Funds - Predominantly primary agriculture								
1	Emergent Africa Land Fund	2008	$500 mln	10 000	Luxembourg	Sub-Saharan Africa	Various institutions, including TLG Capital, Truestone Global Impact Fund	EmVest is a diversified, agricultural investment company for institutional investors operating in sub-Saharan Africa. The company is an operating structure owned by Emergent Africa Land Fund. EmVest was previously part of Emergent Asset Management. EmVest regards itself as the pioneer in transforming, unitizing and promoting this new asset class, namely Southern Africa agriculture. EmVest currently operates agricultural assets in five countries. EmVest is targeting returns of "about 20% per annum" in the fund over a seven-year period. The fund will commit between USD1 million and USD20 million per deal, although the investor is expecting the commitment size to sit between USD3-5 million. Target funding: USD500 million. (www.emvest.com)
2	Futuregrowth Agri-Fund	2010	$125 mln	Not known	South Africa	Southern Africa		Futuregrowth Agri-Fund is a unit of Old Mutual Investment Group (www.oldmutual.co.za) and invests in "responsible equity investments in agricultural land, agribusinesses and farming infrastructure". The fund provides diversification "due to exposure to tangible assets with a low correlation to equities and fixed income, and a high correlation to inflation". The fund offers exposure to African farmland via well-established investment managers, and multiple sources of income through lease income, capital appreciation and value creation from operational efficiencies. The fund is managed by UFF Agri Asset Management, a specialized investment management company with a dedicated focus on the agricultural sector in Africa. It is invested mostly in fruit and vegetables farms in South Africa. The fund is denominated in SA Rand (R400 million, target R1.0 billion). It has a term of 12 years and a commitment period of three years; carrying 20% of outperformance; with a management feeof 1.75%. (www.futuregrowth.co.za. www.uff.co.za)
3	Pharos Global Agricultural Fund	2011	$350 mln	Not known	Cayman Islands	Sudan, Tanzania, Global		This (proposed) fund is focused on "capturing long term value through investments in arable farmland and relatedassets". To create value, Pharos "will focus on income generation and long term asset value appreciation; make investments in diversified global locations; capture value up and down the agribusiness value chain; and ensure investments are made in a sustainable manner with a focus on integration with the local smallholder population". The most recent plans include a 200 000-ha arable farming development in Tanzania in partnership with Summit Farms (US). An earlier fund, PharosMiro Fund (now discontinued), had a funding target of USD350 million (this estimate is used as an indication of the current fund target). (www.pharosfund.com)
4	Silverlands Fund	2007	$450 mln	Not known	Luxembourg	Central and Southern Africa	CDC, Finnfund, PKA Pension Fund, OPIC	Silverlands Fund invests in large-scale commercial farming businesses and employs a business model called the "Hub-Out Growers Model". The fund's geographic focus is Central and Southern Africa, covering the main fertile growing areas of Africa and farming "across a broad range of crops". It has a 2% management fee, a 20% carry and a 7% hurdle rate. The fund manager is SilverStreet Capital LLP, an investment management firm focusing on Africa and the agricultural sector. The fund has a partnership with "Foundations for Farming", an NGO based in Zimbabwe, which trains small farmers in eight countries in Africa. (www.silverstreetcapital.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
	Sub-total - Predominantly primary agriculture		**$1 425 mln**		***Note*: Fund amounts include both committed and target funding**			

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
Sub-total - Multi-purpose food and agriculture								
1	Actis Agribusiness Fund	2010	$83 mln		United Kingdom	East, Central and Southern Africa		Actis is an emerging markets private equity firm with USD5 billion AUM. Actis was established in 2004 after spinning out from CDC, the UK's development arm (CDC's interest was bought out in 2012). Actis Africa Agribusiness Fund was launched in 2006 with a committed capital of USD92 million. The fund has made investments in Cote d'Ivoire, Kenya, South Sudan, Tanzania and Zambia. The fund invests across the entire agribusiness value chain from input supply, through production, processing, distribution to marketing, and focuses on expansion capital, change of control and, buy and build transactions with a deal size of between USD5 million and USD15 million (www.act.is)
2	Africa Agriculture and Trade Investment Fund (AATIF)	2011	$59 mln		Germany	Africa	KfW, German Federal Ministry for Economic Corporation and Development (BMZ), Deutsche Bank, others	The fund was set up by KFW at the request of BMZ and is "an innovative public-private partnership dedicated to uplifting Africa's agricultural potential for the benefit of the poor". The fund aims at improving food security and providing additional employment and income to farmers, entrepreneurs and workers alike "by investing patiently and responsibly in efficient local value chains". The fund is set up as closed-ended investment company organized under Luxembourg law in the form of a public limited liability company ("SICAV-SIF"). The fund is structured to allow investments at three different levels, each offering a unique risk/return profile with dividends being paid following a waterfall principle. There is an accompanying technical assistance facility (managed by the Common Fund for Commodities (CFC) (www.common-fund.org)). To assess investment compliance with the Fund's Social & Environmental Safeguard Guidelines, the fund partners with an independent Compliance Advisor, the International Labor Organization (ILO). The Investment Manager is Deutsche Bank AG. The fund is denominated in Euro (EUR45 million). (www.aatif.lu)
3	African Agricultural Capital Fund	2005	$9 mln		Uganda	Kenya, Tanzania, Uganda	Gatsby Charitable Foundation, Volksvermogen, Rockefeller Foundation	The fund objective is to provide funding to businesses in the agriculture value chain with a particular focus either on inputs and service provision to farmers or on providing farmers with improved access to market opportunities, including plant breeding and seed production, cereal crop handling and marketing, agricultural production and agro-processing. AAC is managed by PCP Uganda Ltd, a subsidiary of Pearl Capital Partners, a Mauritius resident investment management business. (www.aac.co.ke)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
4	African Agriculture Fund (AAF)	2010	$300 mln		South Africa	Sub-Saharan Africa	Various DFIs and Development banks, OPIC(see next box)	The fund invests in a wide range of food and agricultural businesses (food production and distribution in cereals, livestock farming, dairy, fruit and vegetables, beverages, FMCG food, crop protection, logistics, fertilisers, etc.) in sub-Saharan Africa. The fund invests in management buy-outs and buy-ins, acquisitions, expansions, early stage equity (minority/majority), outgrower and smallholder developments. Primary agriculture is considered only where this forms part of a vertically integrated business. It is a closed-ended fund, with a 10-year tenure, and an annual fee of 2%, carry 15% rising to 20%. Investment ranges from USD5-20 million, and the fund targets returns "IRR above 25%". The fund has a EUR10 million technical assistance facility funded by the EC, AGRA, UNIDO andothers, to support SME linkages. The fund manager is Phatisa (South Africa). Investors include Agence Française de Développement, African Development Bank, Spanish Agency for International Development Cooperation, Development Bank of Southern Africa, Banque Ouest Africaine Développement and the ECOWAS Bank for Investment Development. The fund target size is USD300 million (of this, USD151 million was raised by January 2013 plus a USD100 million commitment from OPIC). The fund is seeking private investors for the balance of the fund - these investors have a preferred return. (www.phatisa.com)
5	Agri-Vie Food and Agribusiness Fund	2010	$110 mln		South Africa	Sub-Saharan Africa	SP-aktif and Sanlam Private Equity with South African and international investors and the Makotulo Consortium. Investors include IFC.	Agri-Vie is a private equity investment fund focused on food and agribusiness in sub-Saharan Africa with "a mission to generate an above average investment return, as well as demonstrable socio-economic development impacts through its equity investments in food and agribusinesses". Agri-Vie invests with a view to realizing its investment in 7-10 years by way of one of the following mechanisms: strategic (trade) or financial sales;sSales back to management or other shareholders; listing on a main or alternative stock exchange; and appropriate dividend policies. Primary agriculture is considered generally only where this forms part of a vertically integrated business. (www.agrivie.com)
6	Agvance Africa	2012	$500 mln		Tunis	Fund of funds Africa	AfDB, other DFIs, private institutions	Agvance Africa Fund is the first agribusiness-focused fund of funds in Africa. The objective is "to increase private investment into the agribusiness sector to address food security, and unleash the largely unexploited potential of African agriculture and agribusiness sectors". Agvance will be managed by Credit Suisse Customized Fund Investment Group (CFIG) and will target total capital commitments of USD500 million. It is anticipated to invest in 12 to 15 best-in-class private equity funds targeting portfolio companies along the agribusiness value chain and across the continent. The fund will design an environmental and social management system in cooperation with the World Wildlife Fund (WWF). (www.afdb.org)
7	Mahaseel Agriculture Investment Fund	2010	1 000		Sudan	Egypt, Sudan	Beltone Private Equity, Kenana Sugar Company	This fund is the creation of Kenana Sugar Company, which was founded in the 1970s by Lonrho and the Government of Sudan. The fund is mandated to invest across the agriculture sector "starting with opportunities in primary agriculture business through to the value added, food processing, and retail businesses". The fund target is USD1.0 billion. The fund will acquire a controlling stake (51%) in operating companies; if less than 51% is invested then the fund should be able to exert strong influence through shareholder agreement. The fund term is eight years, extendable to 2x2 years period. There is a management fee of 2%. Kenana Agriculture GP Ltd is the general partner. The fund is managed by Beltone Agriculture, a joint venture between Beltone Capital and Kenana. Exit options include: sale of stake to third party, IPO and listing the fund on a recognized stock exchange. Limited Partners may have the opportunity to co-invest in the fund's portfolio companies. (www.kenana.com. www.beltonefinancial.com)

#	Name	Year estab.	Fund size (USD millions)	Land bank (ha)	Fund location	Geographic focus	Investors (where known)	Investment strategies, fund operations and terms
8	ManoCap Soros Fund		$5 mln		Sierra Leone	Sierra Leone	Soros Foundation, CDC Group	ManoCap is a private equity fund manager that makes investments in small to midcap enterprises in West Africa. The firm manages two funds: the Sierra Investment Fund (SIF) and the ManoCap Soros Fund. SIF is a multi-sector fund (excluding mining) that focuses on investing in Ghana, Liberia and Sierra Leone. The ManoCap Soros Fund invests in agribusiness and related services in Sierra Leone, such as growing, buying, wholesaling and exporting agricultural goods, line haulage and warehousing, cold chain distribution, agro-processing, logistics, equipment leasing and financial services in Sierra Leone. (www.manocap.com)
9	Standard Chartered Private Equity		$80 mln		South Africa	Africa with focus on sub-Saharan Africa	Division of Standard Chartered Bank	Standard Chartered Private Equity is a division of Standard Chartered Bank. They invest across a range of industries in mid to late-stage companies in need of expansion capital or undergoing management buyouts and will invest from USD25 million to over USD100 million in a single transaction often with co-investors. The objective is "to see value and liquidity delivered within a five-year period". In March 2011, Standard Chartered Private Equity acquired a 30% holding in the Afrifresh Group, enabling it to increase its farming asset base and continue its growth (www.afrifresh.co.za). Afrifresh is, in turn, invested in several agribusiness-related portfolio companies including Ariston Holdings, an agribusiness company in Zimbabwe. An estimated USD80 million is used as an agribusiness component. (www.wholesalebanking.standardchartered.com)
10	TransFarm Africa Transformation Fund	2011	$30 mln		United States	Eastern and Southern Africa	Various charitable and related private institutions being targeted	The fund targets growth-oriented, mid-scale commercial farms and agri-businesses whose business models incorporate small farmers and agricultural SMEs as suppliers, customers, partners or employees. There is a particular focus on Development Corridors. The pilot fund will be "USD30-50 million". The initiative is managed by Lions Head Global Partners, a UK investment firm, and will target funding principally from philanthropic institutions. The investment horizon is 7 to 10 years, with equity stakes from USD2-5 million. (www.transfarm.org)
11	Voxtra East Africa Agribusiness Fund	2011	$12 mln		Norway	East Africa	Norfund (35%), Grieg International, Kavlifondet, private individuals in Scandinavia	The fund will invest in 8-10 small and growing enterprises in East Africa that provide improved inputs, processing capacity or market access to smallholder farmers. Voxtra's investments are expected to significantly strengthen the incomes and food security of more than 200 000 smallholder farmers. (www.voxtra.org)
	Sub-total - Multi-purpose food and agriculture		**$1 188 mln**		***Note:*** **Fund amounts include both committed and target funding**			
15	**Total**		**$3 613 mln**					

FUNDS INVESTING IN PUBLICLY-LISTED EQUITIES IN THE AGRICULTURAL SECTOR GLOBALLY

#	Name	Year estab.	Fund size (USD millions)	Fund location	Geographic focus	Investment strategies
1	Allianz Global Agricultural Trends	2008	$309,0 mln	Germany	Global	The fund invests in companies that profit directly or indirectly from developments in the following areas in particular: production, storage and transport of agricultural commodities; processing and sale of foodstuffs and beverages. Denominated in Euro (EUR238 million). (www.allianzgi-b2b.eu/intb2b/download?docid=1190418)
2	Amundi Global Agriculture	2008	$168,59 mln	Luxembourg	Global	The fund seeks long-term capital growth investing in equities of companies active in the farm value, from cultivation and breeding to activities supporting the entire industry (transport, equipment, infrastructure, biotechnology, irrigation, etc.). (www.amundi-funds.com/priv/product/?isin=LU0347595299&doc=FP)
3	Baring Global Agriculture Fund	2009	$210,5 mln	United Kingdom	Global	The objective of the fund is to invest in companies where the majority of earnings are derived from activities related to any commodities which are grown or raised, commonly known as agriculture or soft commodities. Denominated in Sterling (GBP 131.3 milion). (www.barings.com/ucm/groups/public/documents/marketingmaterials/017215.pdf)
4	Birla Sun Life Commodity Equities Global Agri Fund	2008	$2,2 mln	India	Global	The fund invests in overseas companies or overseas mutual funds investing in companies that have business exposure to agricultural commodities. Such companies could include producers of agricultural products, crop growers, owners of plantations, companies that produce and process foods or fertilizer-producing companies.(http://mutualfund.birlasunlife.com/Pages/Individual/Our-Solutions/WealthCreation-Funddetails.aspx?SchemeShortName=BSL%20Commodity%20Equities%20Fund&Highlighted=No)
5	BlackRock World Agriculture Fund	2010	$360,1 mln	Luxembourg	Global	The fund invests globally at least 70% of its total assets in the equity securities of agricultural companies. Agricultural companies are those which are engaged in agriculture, agricultural chemicals, equipment, infrastructure, agricultural commodities and food, bio-fuels, crop sciences, farm land and forestry.(www.blackrocklatam.com/content/groups/latinamericansite/documents/literature/1111111656.pdf)
6	CF Ecelectica Agriculture Fund	2007	$145,0 mln	United Kingdom	Global	The fund invests in the shares of global companies which have exposure to agriculture and farming. (www.eclectica-am.com/pdf/EAGF/EAMF%20Full%20Prospectus.pdf)
7	Coxe Global Agribusiness Income Fund	2011	$36,6 mln	Canada	Global	The fund invests in a diversified portfolio of publicly listed Agribusiness Issuers engaged in various aspects of agriculture, including food production, such as grains and livestock, agriculture equipment and sales, fertilizers, seed and specialty chemicals and agriculture infrastructure, including water, energy and alternative energy, transportation, agriculture technology and biotechnology related to the agribusiness industry. Denominated in CAD (CAD36.18 million). (www.bmocm.com/investorsolutions/closed-end-funds/coxe-global-agribusiness)
8	DJE - Agrar & Ernährung	2008	$114,0 mln	Luxembourg	Global	The fund invests primarily in the equity securities of domestic and foreign companies that are directly or indirectly working in the agricultural and food value chain. Denominated in Euro (EUR88.62 million). (www.dje.de/DE_de/fonds/factsheet/LU0350835707-DJE-Agrar-und-Ernaehrung-P.pdf)
9	DWS Global Agribusiness	2006	$775,34 mln	Singapore (managed by Duxton Asset Managers)	Global	The fund invests in opportunities at various points along the "food chain" ranging from agricultural commodities to consumer products. Areas include land and plantation, seed and fertilizer, protecting and irrigation, food processing and manufacturing companies. (www.dws.com.sg/Products/Fund/817/Overview)
10	First State Global Agribusiness Fund	2010	$59,3 mln	United Kingdom	Global	The fund invests primarily in equity and equity-related instruments of issuers in the agribusiness sector. This includes but is not limited to companies involved in the production, processing, transporting, trading and marketing of soft commodities, as well as those that supply products and services (including seeds, fertilizers, crop nutrients, agricultural equipment and water) to the agricultural industry. Denominated in Sterling (GBP 37 million).(www.firststate.co.uk/uploadedFiles/CFSGAM/PdfFundFactsheets/AGRI.pdf)

#	Name	Year estab.	Fund size (USD millions)	Fund location	Geographic focus	Investment strategies
11	GAIA World Agri Fund	2008	$17,31 mln	Cayman Islands	Global	The fund invests opportunistically in upstream farming operations, equipment and technology, logistics and related businesses in emerging regions such as Asia, Africa, the former Soviet Union and Latin America. Investors in the fund will gain direct exposure to global agri operators via the fund's investments in mostly listed, but also unlisted equities. (www.gaiacap.ch/newsletters/GWAF_NAV_July_08.pdf)
12	Julius Baer Multistock - Agriculture Fund	2008	$40,33 mln	Luxembourg	Global	The fund aims to achieve long-term capital growth by investing in both equities of companies involved in the agriculture value chain worldwide and in agricultural commodities. The long-term target allocation of the fund is 85% equity and 15% commodity exposure. (www.jbfundnet.com/data/tempdoc/bishikhgish.pdf)
13	Pictet Funds (LUX)-Agriculture fund	2009	$245,0 mln	Luxembourg	Global	The fund seeks capital growth by investing primarily in a diversified portfolio of the shares of companies operating in the agribusiness value chain. The fund particularly favours companies operating in production, packaging, supply and in the manufacture of agricultural equipment. The investment universe is not restricted to a specific geographical zone. (www.pictetfunds.com)
14	SAM Sustainable Agribusiness Equities	2008	$150,0 mln	Luxembourg	Global	The fund invests worldwide in listed stocks of sustainable companies in the agricultural sector and along the entire agriculture value chain. A sub-fund of Robeco Capital Growth Funds. Denominated in Euro (EUR116 million). (www.robeco.com)
15	Sarasin AgriSar Fund	2008	$263,0 mln	United Kingdom	Global	The aim of the fund is to achieve capital appreciation through investment in the longer term trends within the global food and agricultural industry. Denominated in Sterling (GBP164.3 million). (www.sarasin.co.uk)
16	Trigon Emerging Agri-Sector Fund	2008	$2,73 mln	Estonia	Global	The fund invests in the agricultural sector and related companies within global emerging markets. It focuses on undervalued small and mid-cap primary producers with strong growth prospects. Research is supported by Trigon Agri, which manages close to 200 000 ha of farmland. Denominated in Euro (EUR2.1 million). (www.trigoncapital.com)
17	Troika Dialog Agriculture Sector	2011	$0,63 mln	the Russian Federation	CIS/ Global	The fund invests in companies of the agro-industrial sector for a complete chain of production of foodstuffs. Approximately 50% of the fund will be invested in the companies of CIS countries and 50% in other countries. Investment instruments are the shares of companies as well as ETFs.(www.sberbank-am.ru/eng/funds/sector/ag.wbp)
	Total		**Over $2 900 mln**			

Please address questions and comments to:

Investment Centre Division
Food and Agriculture Organization of the United Nations (FAO)
Viale delle Terme di Caracalla – 00153 Rome, Italy
investment-centre@fao.org
www.fao.org/investment/en

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