

# Fighting food inflation through sustainable investment

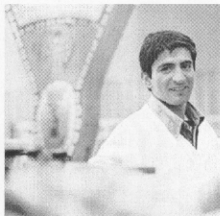
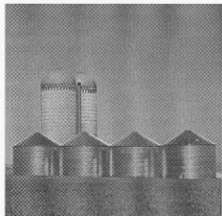
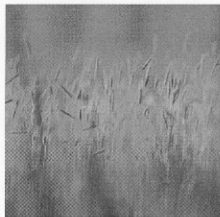
10 March 2008, London

Rising food prices: causes, consequences and policy responses

Grain production and export potential in CIS countries



European Bank  
for Reconstruction and Development



# Rising food prices: causes, consequences and policy responses<sup>\*</sup>

## I. Introduction

A sudden rapid increase in prices of key agricultural commodities in 2007 has put food price inflation on the top of the agenda for policymakers worldwide. Consumers in the transition region – as elsewhere – are facing higher prices for basic foodstuffs such as bread, butter and milk. The most affected are usually the poor that spend a high proportion of their income on food. At the same time rising food prices should constitute a real opportunity for the large number of agricultural producers in the region – with supportive policies and investments they should translate into higher producer incomes and in turn promote rural development.

Many governments in the transition region have either implemented, or are considering implementing, a number of policy measures to limit the increase of domestic food prices and shelter their domestic consumers. These policies have varied from the introduction of price controls, to a reduction in import barriers and the imposition of export restrictions. However, the analysis of this paper shows that many of these policies may not provide many benefits for consumers, can potentially have serious detrimental impacts for agricultural producers and could prove counterproductive for rural development.

The purpose of this note is to

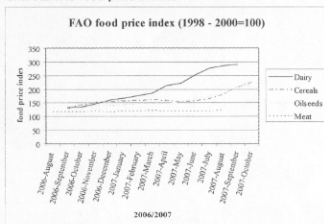
- describe the recent developments in food prices, their likely causes, and their economic impact;
- provide an overview of available policy measures;
- assess what impact these measures are likely to have, not only on food price inflation itself, but also on consumers and agribusiness enterprises along the value chain; and
- suggest what practical steps could be taken both to minimise the negative impact of high food prices on consumers and to maximise the benefits for producers.

The note covers issues that apply generally to most agricultural producers in the region, and provides data selectively on a handful of CIS countries with high potential per capita agricultural output: Kazakhstan, Moldova, Russia and Ukraine.

## II. Food price inflation – how much and for how long

The recent rise in food prices has been dramatic (see Chart 1), and is likely to last for some time. The food price index composed by the FAO rose on average by 23 per cent in 2007 compared to 2006, while it increased by only 9 per cent in 2006 compared to 2005. Moreover, in December 2007 the FAO food price index was nearly 40 per cent above that for the same month in 2006, while the increase in December 2006 over December 2005 was only 13 per cent. The increases over the past year were especially large for dairy products, and more recently affected cereals and oilseeds. Prices for meat have remained fairly stable.

Chart 1. FAO food price indices



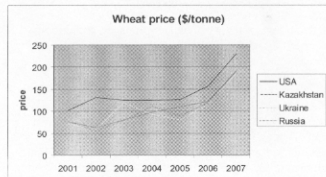
Source: FAO website.

<sup>\*</sup>This EBRD discussion paper was prepared by the Office of the Chief Economist to inform debate at the EBRD-FAO high level conference on combatting food price inflation held on 10 March 2008 in London.

The remarkable feature of the current price rises is that nearly all major food crop commodities are affected. Although the surge in agricultural crop commodity prices has been led primarily by price increases for dairy and grains, prices of other crop commodities, with the exception of sugar, have increased significantly as well. High international prices for crops have been passed on to final consumers through a rise in retail prices of such basic foods as bread, butter, and milk<sup>2</sup>.

Chart 2 illustrates the recent development of the producer price for wheat. The US price indicates an upper bound on world market price developments but producer prices in Russia, Ukraine and Kazakhstan are quickly reaching that level.

Chart 2: Producer Wheat Prices



Source: National Statistical Offices.

Part of the price increases are the result of temporary supply problems, such as droughts (including those that occurred in South-eastern Europe in mid-2007)<sup>2</sup> and diseases. More importantly, however, there are also more permanent causes that suggest that prices are likely to remain high over the medium term. Aside from weather-related production shortfalls, these more permanent factors include:

#### On the supply side

- the continuing subsidies to agricultural producers in the US, Europe and Japan which have made more efficient and cheaper production elsewhere unprofitable;<sup>3</sup>

- the gradual reduction in stock levels, particularly of cereals, resulting in part from the increasing cost of storing perishable goods, the increase in the number of countries able to export, and the improvements in information and transportation technologies; and
- the rising costs of fuel which has made agricultural production and transportation more expensive.

#### On the demand side

- the increased demand for agricultural products (particularly meat) in key emerging markets (especially in China and India) as a result of changing consumption patterns and increased disposable incomes – which has affected both commodity prices and international shipping costs;
- the reliance of the rapidly expanding biofuels market on commodities such as sugar, maize, cassava, oilseeds and palm oil;
- the greater role of speculative investors in agricultural commodity markets that have incorporated likely future trends, such as a further significant expansion in biofuel production, into today's prices.

None of these causes are likely to disappear in the short run and they may in fact become more prominent. As a consequence of these structural shifts in consumption patterns in key emerging markets as well as the changes in production (such as biofuels) there are structurally higher prices that are likely to stay.

Over the longer term, prices would come down if supply were stimulated. Supply is already partly responding to demand for the next harvest season, following the injection of liquidity and working capital into agriculture in response to higher prices. However, a more permanent supply response will require either increasing yields of existing plots or bringing more agricultural land into cultivation. In the transition region in particular, increasing yields or bringing more land into cultivation will necessitate conducive government policies and significant investments into the whole value chain, not only into primary production, but also into agricultural transport infrastructure, logistics, financing, etc. Significant investments in agricultural equipment and modern farming methods are needed even in advanced transition countries.

1. However, it should be noted that international food price inflation does not always automatically feed through to similar domestic food price inflation, since there remain many national barriers to international trade in agricultural products.

2. It should be noted that the grain harvest in 2007 increased from 2006 despite the temporary weather related factors.

3. Related examples are the subsidies for cotton production that have prevented diversification into food production in several Central Asian countries. This is particularly the case in Tajikistan, which now has to import around 50 per cent of its food since most of its primary agriculture is focused on cotton production. As a result international food price inflation has hit Tajikistan particularly hard, contributing to its 20 per cent overall inflation in 2007.

### III. Why does it matter?

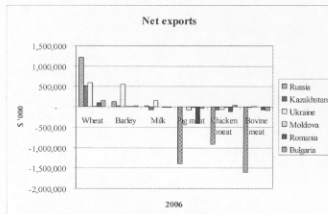
The reason why rising food prices are a concern for governments around the developing world is that higher prices negatively affect consumers, especially the urban poor. As food is the most frequently purchased item in the consumer basket, and constitutes a large share of monthly household expenditure in many poorer countries, rising prices are a major concern for families and have been known to produce sharp social tensions.<sup>4</sup> On aggregate, rising global food prices negatively affects countries where food represents an important share of imports. Rising food import bills could lead to a reduction in the volume of imports and a consequent reduction in consumption, especially in those countries where food inventories are already low.

However, food price inflation is not only a problem in food importing countries. It is also a problem for food exporting countries, although to a much lesser extent. For net food exporters higher food prices represent an opportunity that could result in more employment in rural areas and therefore lower poverty rates. However, while agribusiness companies and farmers in food exporting countries benefit from higher prices, consumers, and particularly urban poor, suffer as much as in other countries because local producers in net exporting countries are as likely to increase prices as food importers. In addition, even net agricultural exporters are importing some food products in significant quantities due to their specialisation in a subset of agribusiness products – for example the key CIS countries are in general net cereals exporters while

they are net importers of meat and some dairy products (see Chart 3). Moreover, the overall balance for specific commodities, such as grain, hides the fact that some of these countries are exporters of lower quality grain, while at the same time importing higher quality grain. The export of lower quality grain partly results from the inadequate handling of grain post-harvest and the lack of modern warehousing and storage space. Fears of the economic and social impact of continued food price increases are therefore now commonly shared across the world in both food importing and exporting, rich and poor, transition and non-transition countries.

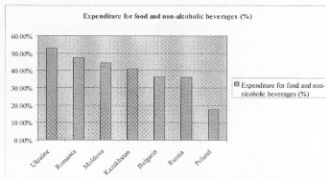
Also, since the importance of food expenditure in overall consumer expenditure tends to decline with higher incomes, transition countries in general tend to spend a lot more of their incomes on food than more developed market economies. For example, the bottom income deciles of the populations in Central Asia can spend up to two thirds of their total expenditure on basic foods alone. The highest burden falls on the urban poor or the non-agricultural rural poor, given that their diets are likely to rely heavily on cereal consumption (with cereal prices exhibiting some of the highest price increases), that they spend a high proportion of their overall expenditure on food, and that they do not produce food for their own consumption (see Chart 4). As transition progresses the expenditure share decreases significantly; Poland is a good example of an advanced transition country whose expenditure share on food has reached the EU average. In the less advanced parts of the region, higher food prices are not only eroding people's overall purchasing power but also leading to a deterioration of their diets in terms of quantity and quality.

Chart 3. Net exports



Source: United Nations "Commodity Trade Statistics Database" (COMTRADE), 2006.

Chart 4. Share of expenditure on food in total



Source: National Statistical Offices.

4. High food prices have led to social tensions in many parts of the world. Political unrest linked to rising food prices recently occurred in Morocco, Uzbekistan, Yemen, Guinea, Mauritania and Senegal, see Press Conference on Soaring Food Prices and Action Needed, by Dr Jacques Diouf, Director-General, FAO; Rome, 17 December 2007.



Rising food prices also matter from a purely macroeconomic perspective. Inflation rates have surged across our region, and will feed into broader price expectations and wage setting. This is likely to persist even if food price inflation subsides. This has the potential to disrupt the macroeconomic and financial stability that has characterised the region for the past ten years.

Of course country level impacts mask important difference among socioeconomic groups. While poor urban households are likely to suffer from rising food prices, net agricultural producers such as Kazakhstan, Russia and Ukraine are likely to benefit if high international prices trickle down to higher farm-gate and domestic producer prices. In fact, with appropriate government policies and increased investment in primary production, transport infrastructure, logistics, etc. rising prices can potentially lead to higher agricultural incomes. This in turn has important implications for rural development, since it is likely to promote rural employment and stimulate related services. In this way high prices can actually help alleviate poverty in the agricultural transition countries.

#### IV. What have been the reactions by governments to rising prices?

Governments in a number of transition countries – as elsewhere – have responded to rising international border prices by trying to restrict increases in domestic food prices and ensure sufficient supply of basic agricultural products in order to shelter their consumers (for a snapshot of recent policy measure see Table 1).<sup>5</sup> The policies that have been implemented have included a combination of price controls, quotas, tariffs, subsidies, and the use of interventions using state grain reserves.<sup>6</sup>

The key policies implemented in transition countries to date have focused on cereals and dairy products. The main grain exporting countries have started restricting the amount of grain they export by setting quotas, imposing or increasing export tariffs, and using non-tariff trade barriers. Dairy and meat importing countries have on the other hand lowered their import tariffs for these products.

Table 1. Snapshot of recent policy measures against rising food prices in selected countries

	Export restrictions	Price controls	Import liberalisation
Russia	Export duties on grain exports (10 per cent on wheat and 30 per cent on barley) introduced in November 2007; Since January 2008 it was increased for wheat to 40% but not less than 105 euro/tonne	Temporary agreement between the government and the biggest food retailers and producers in October 2007 to freeze prices on selected types of bread, cheese, milk, eggs, and vegetables	Import duty on milk and dairy products cut (from 15 per cent to 5 per cent) in October 2007
Ukraine	Export quotas and export licensing for selected categories of grain introduced since autumn 2006	Profit margins on bread sales capped by local authorities ("social bread")	-
Kazakhstan	Licensing to control exports of wheat introduced in autumn 2007.	-	-
Serbia	A three-month ban on the export of wheat, corn, soy and sunflower was introduced in August 2007. The ban was subsequently extended to six months, but at the end of January 2008 it was announced that it would remain in place until the next harvest.	-	-
EU			Suspended import duties on some cereals
Argentina	Increased corn levies to 25% and wheat levies to 28%. Stopped maize export permits.		
China	Introduced export levies on wheat, buckwheat, barley and oats by 10%. Increased those on wheat flour and starch, maize, sorghum, millet and soybeans. Introduced export quotas on flour made of wheat, maize and rice.		
India			Eliminated tariffs on wheat and wheat flour.

Source: EBRD Office of the Chief Economist and FAO.

- Whatever the price level of a commodity imported is at its border, the price at which it will be sold on the domestic market depends on government policies restricting price transmissions as well as on the transaction costs of bringing the commodity to the market where it is sold. During periods of rising prices such as these, government in countries with large populations of poor consumers and small farmers such as the transition countries try to restrict the full transmission of higher international prices at least in the short run.
- It should be noted that 10 transition countries are now members of the European Union, including Bulgaria and Romania, which governs their choice of potential policy measures, particularly in terms of trade barriers, adjustments, interventions and subsidies.

For example, in the run up to its general election Russia has introduced export duties on wheat and barley in the fall of 2007 and is discussing further tariff increases. Moreover, under pressure from the government, Russian retailers have also agreed to freeze prices on some basic foodstuffs. Ukraine has for several years been using temporary export quotas on corn, barley and wheat to ensure sufficient supply on domestic market.<sup>7</sup> Kazakhstan has introduced licensing to control the exports of wheat and is considering the lowering of import duties on sugar, rice, sausages, milk, butter, margarine, fish, rape-seed oil, fruit and vegetables. In addition, it is considering a significant increase in its strategic reserves of essential foods, including grain. Serbia introduced a temporary ban on the export of wheat, corn, soy and sunflower in August 2007, which has now been extended until the next harvest.

In addition, several large non-transition emerging markets such as Argentina, Egypt, Mexico and China have also started imposing restrictions on food prices.<sup>8</sup>

**Table 2. Overall producer support levels in selected transition and non-transition countries**

	Percentage PSE as a share of gross farm receipts 1/			Percentage TSE as a share of GDP 2/		
	2004	2005	2006p	2004	2005	2006p
Bulgaria	11	6	na	1.92	0.82	na
Romania	28	29	na	7.59	5.58	na
Russia	19	15	na	1.62	1.04	na
Ukraine	3	12	na	1.49	3.47	na
Brazil	4	6	na	0.63	0.79	na
China	7	8	na	2.23	2.34	na
EU	36	33	32	1.3	1.14	1.1
Japan	56	55	53	1.28	1.2	1.11
US	16	16	11	0.87	0.85	0.73

Source: OECD 20073 Latest available date. 2006 preliminary.

1/PSE is the Producer Support Estimate: the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers arising from policy measures that support agriculture. It includes market price support and budgetary transfers.

2/TSE is the Total Support Estimate: the annual monetary value of all gross transfers from taxpayers and consumers arising from policies that support agriculture, net of associated budgetary receipts.

Others, such as India, Vietnam and Argentina, have put restrictions on exports. A number of governments worldwide have implemented a mix of available policies, particularly in the run-up to elections or during important national holidays (e.g., Morocco introduced fixed bread prices during Ramadan), with only limited success.<sup>9</sup>

While these policies may support consumers, they are particularly harmful for the large swathe of agricultural producers in agricultural economies such as Kazakhstan, Russia and Ukraine. Agricultural producers in transition countries in general already receive much less support than producers in Europe or Japan (see Table 2). For example, the level of overall support given to agricultural producers as a share of their total farm receipts amounted to 15 per cent and 12 per cent respectively in Russia and Ukraine in 2005, compared to 33 per cent in the EU and 55 per cent in Japan. By restricting the transmission of higher international prices through price controls and limiting exports, the profits of agricultural producers are curtailed. Indeed, governments planning to change policies should set the negative effects of increased prices on rural and urban poverty against the benefits derived from productivity led growth in agricultural production and the impact this has on rural development (for a more detailed analysis see next section).

## V. What are the likely effects of these interventions

Given the importance of food prices for consumers and the speed of this year's food-price rises, it is understandable why governments around the world are trying to soften the blow for the most vulnerable part of the population. However, if one looks more closely along the value chain at the different policy options (export restrictions, price controls, import facilitation) it is clear that there are winners and losers from state intervention in the market. The following analysis shows that some policies are likely to be more effective at achieving their objectives of protecting consumers than others, at lower cost to producers. However, the common feature of all these policy measures is that they end up hurting farmers and provide limited and undifferentiated protection to consumers without targeting the most affected groups.

7. These export tariffs are in fact prohibited under WTO rules and would have to be removed once Ukraine joins.

8. For a more detailed description of policy responses in non-transition countries, see FAO, "Growing demand on agriculture and rising prices of commodities", 14 February 2008.

9. Countries with recent government interventions (either restricting exports or reducing tariffs on imported food) include: Argentina, Azerbaijan, Bangladesh, Bolivia, Bosnia, Cameroon, China, Croatia, Egypt, Ethiopia, Honduras, India, Kazakhstan, Kenya, Malawi, Mali, Mexico, Morocco, Philippines, Vietnam and Zambia, see FAO *ibid.*

## 1. Increasing export restrictions

While increased export tariffs may soften food price increases, they are notoriously difficult to implement and would have to be prohibitive to ensure significant differences between local and international food prices in order to discourage exports and ensure cheap domestic supply. A good example of the use of export quotas and its effects is the introduction of grain export restrictions by Ukraine in the fall of 2006. The restrictions were originally introduced as a system of licenses for grain exporters and subsequently replaced with a system of quotas that aimed to protect domestic consumers from rising international wheat prices.

A recent joint policy note by the World Bank and the German Advisory Group on Economic Reform analysed the effect of these measures and concluded that they not only failed to achieve their objective, but were also detrimental to a large part of the value-chain.<sup>10</sup>

In particular, the study showed that Ukrainian food consumers gained very little from the imposition of the quota. The study illustrated that while wheat prices have been constant since the introduction of the quota, prices for both flour and bread have actually subsequently increased. Moreover, the impact of lower feed prices on the prices of meat and dairy products was also limited. Interestingly, the study illustrated that overall poverty is actually likely to have increased as a result of the quota, since a significant share of the Ukrainian population is employed in agriculture and faced a loss in income as a result of the quota.

At the same time the study showed that the quota system imposed huge losses on grain producers and traders. The grain producers lost most of the export revenue and also faced a reduction of their farmgate price by at least 12 per cent since the introduction of the quota. The traders, who had invested in storage facilities and logistics to facilitate exports, incurred significant costs in cancelled export contracts and short term excess storage needs as a result of the quota. The only beneficiaries of this policy were the flour millers and animal feed producers, whose profit margins increased as a result of constant or falling grain prices on the domestic market.

Finally, the study argued that the imposition of export quotas allows government officials to exercise discretion in how the quotas are allocated, often outside public scrutiny, opening the door to corruption.

## 2. Imposition of price controls

Another popular policy option are price controls on selected food items. A recent example is Russia's agreement with the country's biggest food retailers

and producers to freeze prices at October 2007 levels on selected types of bread, cheese, milk, eggs and vegetables until the end of January 2008. It is now expected that the country's food retailers will extend the price freeze on basic food products until May 2008. Ukraine has used a combination of price controls on the most basic types of bread and has limited the potential profit margins for bread producers more extensively since 2002. The economic impact of price controls depends on the extent to which relevant markets are functioning and competitive, and hence capable of transmitting negative price signals to farmers. This of course depends on whether farm prices are increasing with world prices, or whether retail controls are supplemented by border measures.

However, an analysis along the value chain reveals that there are no clear beneficiaries of this type of policy. While the final consumer may temporarily see some stabilisation in the cost of the price-controlled goods, retail firms will try to compensate for their reduction in profit margins by either squeezing the costs of inputs from farmers, relaxing quality controls or evading the controls. Or if price controls cannot be evaded and producer markets are highly competitive, price controls may actually result in some producers either going bankrupt or limiting their production, triggering shortages. In fact, it could trigger a return to the rationing and empty shelves of the central planning period.

Depending on the price elasticities of the value chain, price controls can bite at different levels – usually the most vulnerable are the farmers who have no short-term substitution possibility, whose production is usually not very diversified, and who lack bargaining power. Farmers are particularly badly affected if high farm input prices like fertilisers combine with fixed output prices to retailers to result in a "cost-price squeeze" with negative impacts on productivity, incomes and fertiliser use. Overall price controls have proven to be the least effective, most distortionary and most costly policy instrument with detrimental effects on resource allocation along the whole of the agricultural value-chain.

## 3. Liberalisation of imports

The third most prominent policy option, a lowering of import tariffs on agricultural commodities, has proven to be the least distortionary and most effective one, although it is only applicable to net importers. In most cases the lowering of import tariffs has resulted both in lower prices for end consumers as well as lower cost structures for the processing industry. In the short-run an increase in competitive pressure can negatively impact agricultural producers so government have been reluctant to use this option. In the medium- to long-term however,

10. See Cramon, S. and M. Raiser, "The Quotas on Grain Exports in Ukraine: ineffective, inefficient, and non-transparent", World Bank report, November 2006.

the lowering of import barriers usually leads to both primary producers as well as processors becoming more efficient and competitive. In order to elicit such a positive supply response it is crucial that these reductions in import tariffs are permanent. One effective way of doing just that would be publicly committing to a reduction in the "bound" tariff in the WTO.<sup>11</sup> One example is New Zealand's import tariff reduction which has proven beneficial for consumers as well as the processing industry.<sup>12</sup>

This is not to say that market liberalisation of this kind will not pose serious challenges for smallholders that face high costs, are less efficient and only have limited access to markets. A liberalisation of imports will mean that these smallholders will face increased competition. Thus the benefit of improved availability of food at local markets comes at the cost of increased competition for local producers. This would, however mean that liberalisation is likely to result in significant structural changes, with small, inefficient agricultural producers being replaced by ever larger, efficient ones.

## VI. Policy messages for government

Given that food prices are likely to remain high over the foreseeable future, it is understandable why governments have put this at the top of their policy agenda. However, the preceding analysis has shown that there are winners and losers and in some cases even unintended consequences to any policy, which can undermine the overall effectiveness of well-meaning initiatives. In order to minimise the potential costs and maximise benefits, governments should bear in mind the following with respect to the most often used policy measures:

### 1. Elimination of price support and other distortions

- resist pressures to administratively determine domestic food prices to avoid a return to the rationing and empty shelves of the central planning period;
- for net exporters, resist the temptation to impose quotas or other export restrictions, which have been shown to have limited positive impact for consumers and high costs to producers and traders;
- reduce or even eliminate policies aimed at bolstering domestic prices (such as import limiting measures and import tariffs) to increase supply and ease the pressure on prices. Tariff reductions would have to

be made permanent through for example bound rates under the WTO umbrella to elicit a supply response;

- calculate costs and benefits of any policy designed to lower food prices. While all policy changes are likely to be controversial and include vocal losers, such an analysis would help to assess the impact on various sections of the population and address the resulting social issues, e.g. the creation of new job opportunities for smallholders exiting primary agriculture.
2. **Distributional measures**
    - provide targeted income support for the most vulnerable sections of the population (including e.g. cash transfers, nutrition programmes, and programmes for the sick and elderly). Where governments can, they should subsidise the incomes of the poor, rather than food itself, because that minimises price distortions. Where food subsidies are unavoidable, they should be temporary and targeted on the poor (through for example vouchers or food stamps). However, this requires a reasonably well-functioning public administration.
  3. **Market development**
    - eliminate restrictions on land registration / ownership to facilitate its tradability and use as collateral;
    - develop legal frameworks that enable the use of commodities as collateral, such as through warehouse receipts, in order to inject liquidity in the production cycle;
    - improve farm to market infrastructure and enhance market rules and institutions to improve the translation of higher prices into incentives for an increased supply response. Investment in rural infrastructure can increase farmer access to key inputs such as fertilizer and credit, while simultaneously increasing the opportunities for selling into new markets, helping farmers increase productivity and output.
    - support private investments not only into primary agriculture, but also into the logistics and warehousing sectors, as well as the processing and retailing industries, in order to increase supply and smooth the seasonal and geographic volatility in food prices;

11. A "bound" rate is a commitment not to increase tariffs above the listed rate — the rate is "bound". For developed countries, the bound rates are generally the rates actually charged. Most developing countries have bound the rates somewhat higher than the actual rates charged, so the bound rates serve as ceilings. Countries can break a commitment (i.e. raise a tariff above the bound rate), but only with difficulty.

12. As an integral part of its package of comprehensive market-oriented reforms initiated in the mid 1980s, New Zealand unilaterally reduced many barriers to trade. In particular, tariffs were cut considerably and non-tariff barriers in the form of quantitative restrictions were eliminated. With the elimination of quantitative restrictions, tariffs have become New Zealand's main trade policy instrument. Tariffs have been reduced sharply, with the average applied Most Favoured Nation (MFN) rate down to 4.1% in 2002. Under a phase-out programme, applied MFN tariffs were due to be reduced further, to an average of 3% by 2000 and removed between 2001 and 2006. However, in 2000, further unilateral tariff reductions were suspended for five years, and further tariff reductions are more likely to be motivated by multilateral, regional or bilateral agreements.

## VII. What can the EBRD do?

A key policy to protect against rising global food prices is increased investment to stimulate more efficient supply. The EBRD already has a very active agribusiness portfolio in its countries of operations which aims to help the transition of their agricultural sectors in becoming more market-oriented. To date, it has invested a total of EUR 4.9 billion in the agribusiness sectors in the region. In Russia, for example, the Bank is the second largest private investor in the sector. In Ukraine, the bank is the biggest private investor in the sector and has supported several large foreign as well as local investors.

In order to assist agricultural producers to benefit from rising prices, the EBRD could target its investments to the following:

### 1. Development of local supply chains to increase production

- Assisting local producers to organise and improve the quality of their supply chains, add value to their produce and take advantage of market/export opportunities, possibly with a grant component and the involvement of strategic investors;
- Supporting investments in processing industries, either with the involvement of foreign strategic partners or with strong local partners. This would help to strengthen linkages between food processing companies and primary producers, aiming to support the transfer of skills, know how, efficiency and profitability along the value chain;
- Financing investments in logistics, such as storage and distribution facilities, that will enable better transmission of market pricing;
- Investing in expansion of food retail to increase competitive pressures on the food market as well as transfer best international practice in retail management focusing on rationalisation of costs along the value chain; as these retail networks have proven to play an important role in establishing price transparency, increasing market competition, and providing reliable market outlets to local food suppliers;

### 2. Development of new rural financing instruments

- Further exploring the possibility of developing new financing schemes that have been developed on a pilot basis (for example: agricultural guarantee funds, agricultural cooperative banks, agricultural land mortgage, but also continuing warehouse receipt programme).
- Further exploring mechanisms that address the chronic lack of capital available in the sector, including through agricultural mortgages and leasing schemes as well as risk sharing facilities.

### 3. Policy dialogue

There is a lack of communication and effective contact between private sector companies and related authorities in the agricultural sectors across the transition region. The Bank is well placed to establish a dialogue with key actors in the public sector in order to communicate effectively on behalf of its clients and, in acute cases, intervene for them or give guidance on pressing policy issues.

# Grain production and export potential in CIS countries\*

## Executive summary

Agricultural prices have risen sharply in the past two years. They are forecast to remain high in the medium term. Higher food prices are of concern to policy-makers as they affect consumers. On the other hand, they are a unique opportunity for farmers. Higher agricultural prices improve farmers' incomes and foster investment in agriculture.

This is especially relevant for Kazakhstan, Russia, and Ukraine, the main agricultural producers in the CIS. Compared to other regions of the world, these three countries have a significant unrealized grain production potential. At least 13 million hectares of unused farm land – abandoned during transition – could be returned to production, with no major environmental cost. There are no policy measures restricting the return of this land to production.

The OECD-FAO Agricultural Outlook released in July 2007<sup>1</sup> forecasts that CIS countries will increase production of wheat and coarse grains to 159 million tonnes by 2016, a 7 per cent increase compared to 2007, and increase their exports up to 35 million tonnes (+14 per cent). This is a forecast, which is likely to be revised shortly<sup>2</sup>.

The maximum potential grain production of these countries is estimated in this paper at 230 million tons. This theoretical figure waives all existing constraints limiting land use and yield improvements. It also implies world markets can absorb large exportable surpluses at sustained prices. This maximum potential estimate was computed for illustrative purposes only.

\*This note was prepared by FAO to provide region-specific information on the unrealized grain production potential of Russia, Kazakhstan and Ukraine, the three main grain producing and exporting countries in the CIS. It also gives some indications on policy measures, areas for investment and issues for consideration in realizing this potential. The note is meant to inform debate at the high-level conference "Fighting Food Inflation through Sustainable Investment" convened by FAO and EBRD on 10 March 2008 in London. It draws from the findings of an independent study on "Grain Potential and the Future Role of CIS Countries on World Grain Markets" commissioned by EBRD and FAO to IKAR, a Moscow-based analytical agency.

1. See <http://www.oecd.org/dataoecd/6/10/38893266.pdf>.
2. The next OECD-FAO Agricultural Outlook is expected to be released in May 2008.

Real production and export figures will be within these two scenarios and will depend on how policy-makers and investors succeed in pulling their act together to unleash the unrealized production potential of the region.

Ambitious government policies are vital, implying improved use of state budgets to deliver essential public goods and services to the agricultural sector. A supportive institutional and regulatory environment is mandatory to attract private investment at all levels of the food chain. To achieve that, improving policy dialogue between private stakeholders and policy-makers will be instrumental.

Areas of immediate attention for policy-makers include: refraining from export limitation measures, knowledge and human capital development, strengthening of credit systems and financial instruments, and land markets. A special feature of CIS agriculture is the emergence of large agrohholdings which farm vast areas of land. The development of this business model in agriculture calls for the scrutiny of policy-makers, in view of potential social and environmental issues.

Massive investment will be needed in handling, storage and transportation infrastructures. Financial resources will have to be mobilized from both the public and private sectors.

## 1. Introduction

International prices of most cereals have risen sharply over the past two years and remain at unusually high levels. Higher world grain prices primarily reflect supply shortages in major producing countries in 2006 and 2007, an increase in demand from the biofuels sector and other reasons, such as higher interest rates and freight costs<sup>1</sup>. As has become evident in recent months, high international prices for grains continue to ripple through the food supply chain, contributing to a rise in the retail price of such basic foods as bread, pasta, meat and milk<sup>2</sup>.

Anticipated increases in world grain prices will result in larger wheat plantings in 2008, which should prevent further short-term price rises or even bring prices down. However, the question of long-term supply responses to structural market imbalances remains. In the immediate future, any increase in planting of one crop will mainly occur at the expense of other crops. In the longer term, production growth may however come from both yield growth and plantings on abandoned or virgin land – should crop prices remain high.

## 2. Unrealized production potential

The grain production potential of CIS countries depends on two main variables: land (including the possibility of bringing/returning abandoned land into production) and yields. As CIS agriculture underwent transition following the breakup of the Soviet Union, Russia, Ukraine and Kazakhstan excluded approximately 23 million hectares of arable land from production (see Table 1 below). This was the largest withdrawal of arable land from production worldwide in recent history. Of the 23 million hectares of arable land excluded from production in the three countries, almost 90 per cent had been used to produce grain.

Arable land use also fell in the United States and in the European Union (EU), mainly due to policy measures aimed at limiting production or ensuring more sustainable land use. However, arable land area in China, Brazil, elsewhere in Latin America and some countries in Africa increased, offsetting the reduction in CIS countries, the United States and EU. This overall gain of world arable land use was sometimes achieved at a high environmental cost and was mainly directed to meet increased demand for vegetable oils and protein meals.

### Returning Abandoned Arable Land to Production

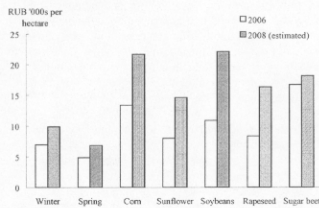
Russia, Kazakhstan and Ukraine are well positioned to expand grain and oilseed production areas, as

unused land in these countries is not constrained by any government policy or major sustainability concern. Admittedly, substantial areas of marginally productive land were cultivated in Soviet times and total crop area will not return to pre-1990 levels. However, of the 23 million hectares of arable land abandoned during transition, experts estimate between 11 and 13 million hectares of non marginal land could be returned to production, if grain prices and profit margins remain high and needed investments are made. In the short to medium term, both grain and oilseed areas are expected to expand.

Table 1. Past Trends in Use of Arable Land Area (in million ha)

	1990-92 av	2003-05 av	Change in hectares	% change in area
China	124	142	18	15%
Brazil	52	59	7	14%
United States	184	175	-9	-5%
Russia, Ukraine and Kazakhstan	200	177	-23	-12%
Other countries	843	864	20	2%
World	1,403	1,417	14	1%

Chart 1. Increases in Gross Margins as a Result of Commodity Price Increases in Russia (2007/2008)



Source: IBAR

Source: FAOSTAT ResourceSTAT

### Competition between Grains and Oilseeds

Reflecting global changes in oilseed and grain areas, there has been a noticeable shift away from cereals in CIS countries over the past 15 years. The areas under sunflower seed, soybean and rapeseed have increased

1. For more information on factors affecting world agricultural commodity markets, please refer to FAO's November 2007 Food Outlook Special Edition on High Prices and Volatility in Agricultural Commodities (<http://www.fao.org/docrep/010/ah876e/ah876e13.htm>).

2. FAO Food Outlook, November 2007 (<http://www.fao.org/docrep/010/ah876e/ah876e00.htm>).

from 5.6 to 11.9 million ha (harvested area), mainly at the expense of cereals and forages. This shift, mainly due to the higher profitability of oilseed crops, was especially striking in Ukraine where it occurred in response to export demand for sunflower seed oil and rapeseed for crushing in the EU. Chart 1 illustrates the expected evolution of margins of different crops in the Russian Federation, confirming increased profitability of oilseeds vs grain.

This trend is assumed to continue in the future. Competition for farmland from rapeseed and sunflower seed will affect farmers' planting decisions and limit the increase of land planted in grains. Only climate, and to a lesser extent crop rotation, will prevent further expansion of oilseeds in CIS countries, especially as demand for rapeseed for biodiesel production in the EU will increase.

#### Yield Potential

Since 1991, world average grain yields have risen by approximately 1.5 per cent per year, with average annual gains ranging from 0.6 per cent in Western Europe to 3.7 per cent in Brazil. During the same period, both Ukraine and Kazakhstan experienced a decrease in grain yields, as illustrated in Tables 2 and 3. Only Russia was able to return to 1990 level yields.

Analysis conducted by IKAR shows that, by 2016, grain yields in Russia, Kazakhstan and Ukraine are likely to increase by 11 per cent (compared to 2004-2006 levels), due to better farm management, increased application of agricultural inputs and plant genetics. Nevertheless, considering soil quality, climatic conditions and current levels of productivity, there is a much larger yield increase potential in these three CIS countries. Table 2 below illustrates the differences in yield between the three countries and other major grain producers.

Table 2. Average Grain Yields in Selected Producing Countries (in tonnes/ha)

	1993	2002	2003	2004	2005-2006
Argentina	2.85	3.24	3.65	3.66	3.70
Brazil	2.35	2.85	3.39	3.13	3.21
India	2.08	2.19	2.38	2.36	2.47
Australia	1.98	1.09	2.09	1.70	2.00
Canada	2.65	2.37	2.74	3.11	3.03
USA	4.30	5.55	6.03	6.85	6.39
Western Europe	6.16	6.92	6.01	7.45	6.66
Kazakhstan	0.99	1.15	1.08	0.88	1.11
Russian Federation	1.64	1.82	1.60	1.79	1.80
Ukraine	3.29	2.75	1.85	2.85	2.40
World	2.74	3.07	3.12	3.37	3.30

Source: IKAR, based on FAO Statistics.

#### Unrealized Production Potential

The OECD-FAO Agricultural Outlook released in July 2007 suggests that production of wheat and coarse grains in CIS countries will increase to 159 million tons in 2016 (i.e. +7 per cent from 2007) and their grain exports to 35 million tons (+14 per cent from 2007). The revised OECD-FAO forecast – to be issued in May 2008 – is anticipated to show a larger production response of the region to high prices. Another forecast, made by IKAR and presented in Table 3 on the next page, estimates a slightly higher production in 2016 at 164 million tons.

These projections do not attempt to capture the maximum unrealized production potential of these countries. Should all existing constraints limiting planting area and yields be removed, production could reach much higher figures, up to 230 million tons (an 80% increase from the current level). To derive this estimate, referred to in Table 3 as 'Estimated Maximum Potential', the following assumptions were made: grain yields in Kazakhstan could approach levels already achieved in Australia, as both countries have similar dry climates. Grain yields in Russia and Ukraine could approximate levels already achieved in Canada and France respectively, although yields were reduced to account for generally lower precipitation in Russia in comparison with Canada and Ukraine with France (based on available FAO AQUASTAT precipitation information). It was also assumed, as mentioned in previous sections, that 13 millions hectares of abandoned land would be returned to production and devoted to grain. No changes in crop distribution (oilseeds vs. grain and other crops) were assumed for already cultivated land.

#### Export Potential

Russia, Ukraine and Kazakhstan have become important players in global grain markets, with stable export markets and geographical proximity to buyers in Europe, North Africa, the Middle East and Asia. These three countries are well integrated in world markets with domestic prices showing close correlation with world reference prices. The graph below shows (i) the inverse relationship of wheat prices in the Black Sea region with estimated world wheat stocks (i.e. when world wheat stocks are low, prices are high) and (ii) the close correlation of international and wheat prices in the Black Sea region.

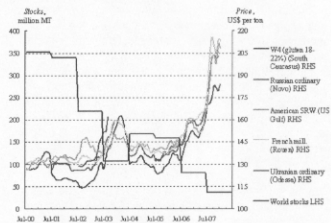
As a result of rising population and income growth, wheat imports in developing countries are forecast to increase, mostly in North Africa and the Middle East. Russia, Ukraine and Kazakhstan are well positioned to expand grain exports to this region.



As mentioned already, depending on factors affecting world grain demand, the OECD-FAO forecast grain exports from the CIS to increase to 35 million tons by 2016. This would increase the share of CIS countries in world grain exports from 12 per cent in 2004-06 to 14 per cent by 2016. For comparison, the shares of other major grain exporters are forecast by 2016 as follows: 34 per cent for the United States; 13 per cent for EU-27; 11 per cent for Australia and 9 per cent for Canada. Again, these forecasts date back to July 2007 and will be revised shortly.

With the maximum production scenario described above, exportable grain supplies from the three above countries could reach nearly 100 million tonnes. For comparison, FAO estimated 2007/08 world grain exports at 252 million tonnes. This upper estimate is nevertheless highly theoretical. First, world markets may not be able to absorb such quantities. Second, large quantities would put a strong downward pressure on prices.

Chart 2. Wheat Prices in Russia and Ukraine and Estimated World Wheat Stocks



Source: IKAR, based on own sources and USDA monthly ending stocks information.

Table 3. Grain Production Potential of Kazakhstan, Russia and Ukraine – Alternative Scenarios

Countries	Transition period			IKAR forecast for 2016/17			Estimated maximum potential		
	avg 1992-1994	avg 2004-2006	Change (%)	IKAR* forecast	diff. between forecast and present	Change (%)	max. potential	diff. between max. potential and 2004-2006	Change (%)
<b>Cereals, Area Harvested (million ha)</b>									
Kazakhstan	21	15	-31%	17.5	3.0	21%	19	4	27%
Russia	57	41	-29%	46.5	5.8	14%	47	6	15%
Ukraine**	13	14	13%	16.0	1.9	13%	17	3	21%
	91	69	-24%	80	10.6	15%	82	13	18%
<b>Yield (tons/ha)</b>									
Kazakhstan	1.06	0.98	-8%	1.27	0.3	30%	1.56	0.58	59%
Russia	1.62	1.88	16%	2.11	0.2	12%	2.70	0.82	44%
Ukraine	2.96	2.64	-11%	2.75	0.1	4%	4.50	1.86	71%
	1.67	1.84	10%	2.05	0.2	11%	2.8		52%
<b>Production (million tonnes)</b>									
Kazakhstan	23	14	-37%	22	8.0	57%	29	15	107%
Russia	93	77	-18%	98	21.6	28%	126	49	64%
Ukraine	37	37	1%	44	6.7	18%	75	38	103%
	152	128	-16%	164	36.3	28%	230	102	80%

Source: IKAR and own estimates

## Domestic Demand

Compared to other parts of the world, domestic demand in Russia, Kazakhstan and Ukraine will not significantly limit exports if production increases. While the overall population in the region is forecast to decline, regional per capita incomes are anticipated to increase, with consumer diets switching away from cereals towards more meat, fish, fruit and vegetables. Increased meat consumption will result in more demand for feed grains but this increase should be partly offset by better feed conversion ratios. Overall, domestic demand will only moderately increase compared to predicted growth in grain production.

Despite numerous projects at start-up stage, biofuels are not expected to significantly impact domestic consumption of grains and oilseeds. Both Russia and Kazakhstan are net energy exporters and, at present, have no clearly defined utilization targets for biofuels.

## 3. Realizing the untapped production potential

Realizing the agricultural production and export potential of Russia, Kazakhstan and Ukraine demands forward-looking policy frameworks and huge financial investment. The magnitude of the investment necessary calls for orchestrated efforts by private operators and national governments.

### 3.1 Supportive Government Policies

Ambitious government policies will be needed for the three countries to reach their untapped production potential. A thorough policy overhaul includes rationalization of the use of public budgets, focusing on key institutional and regulatory reforms, as well as the provision of essential public goods and services. Private investment in agriculture calls for a supportive investment climate with clearer rules, stability and sharing of responsibilities between the private and the public sector.

Russia has already declared agriculture a national priority and increased federal state annual support for agricultural development from RUB 66 billion (US\$ 2.6 billion) in 2007 to RUB 130 billion (US\$ 5.2 billion) in 2012. However, concerted efforts by the Ministries of Agriculture and Economic Development and Trade are central to the design of more efficient support systems, (underpinned by an appropriate division of federal-regional and public-private responsibilities). Attention to factors affecting the profitability of agricultural production; continued rationalization of public institutions; and transfer of social responsibilities from agricultural enterprises to local municipalities will all contribute to this process.

Public policies aimed at unleashing the production potential of the region will have to be harmonized with government interventions aimed at protecting consumers from higher food prices. The latter should concentrate on most vulnerable groups, through targeted income support, and refrain from undermining the positive effects of higher food prices on local agriculture.

In response to soaring food prices, Russia, Kazakhstan and Ukraine have implemented export limitation measures thus limiting the profitability of their own farms. For example, to prevent higher staple food prices for consumers, the Russian government recently introduced export tariffs on wheat and barley as well as "voluntary industry agreements" restricting price margins along domestic supply chains. Other examples of export limitation measures are presented in the note prepared by EBRD's Chief Economist Office "Rising Food Prices: Causes, Consequences and Policy Responses". It is imperative such policies remain temporary emergency measures and do not become standard practice, as they would damage efficiency and production gains.

Supportive government policies should target human capital development, credit systems and land markets. Areas of special interest for public investment and public-private partnerships include handling, storage and transportation infrastructure.

### 3.2 Investment in Handling, Storage and Transportation Infrastructure: a Joint Public and Private Endeavour

#### Handling and Storage Infrastructure

Storage conditions and the total estimated elevator storage capacity of 129 million tonnes are barely adequate to meet current production (128 million tonnes). Modernization (and/or replacement) of existing facilities and building additional storage capacity will hinge on massive investments in handling and storage facilities.

The weakest element of the grain handling and storage system in the three countries is poor technical and economic efficiency: high-energy consumption, insufficient separation/blending capacity and low speeds of grain loading/unloading. Systems established in the 1970s are rapidly ageing and need modernization/replacement. While investments in port infrastructure are already noticeable (in Ukraine for instance), inland grain elevator improvement is lagging behind.

IKAR estimates modernizing key elements of the domestic grain first handling system in Russia would cost roughly US\$2.5 billion. Together with Ukraine and Kazakhstan, the total investment required for modernization of grain first handling systems in the three countries could amount to US \$4.5 billion. These figures do not include investments in new facilities.

Investing in handling and storage facilities would not only minimize post-harvest losses and allow the three countries to respond to increased production; it would also improve farm profitability. At present, because of a lack in physical handling and storage infrastructure in Russia and Ukraine, most grain is sold immediately after harvest, flooding the market and causing large seasonal price decreases and loss of potential farm income. Governments have often reacted by trying to regulate markets, but purchasing monopolies and grain export bans are not a long-term solution to high price fluctuations. Encouraging investment in a private market for storage would be more beneficial.

### **Railway Transportation**

Given the vast distances in the region, the railway system is crucial to the grain sector's competitiveness in Russia, Kazakhstan and, less so, Ukraine. In all three countries, government railway monopolies dominate, and the absence of appropriate maintenance and investment policies has led to the deterioration of grain wagons (hoppers) available for transportation to ports and domestic destinations.

Of the three countries, Ukraine is least dependent on railways. In southern areas most grain is transported to export silos by trucks. Nevertheless, railways still play an important role in domestic markets. Railway transportation is central to Kazakhstan's export infrastructure as most exports are via Russia towards the Black and Baltic Seas and Kazakhstan's railway infrastructure is in urgent need of modernization.

The railway system is a major bottleneck to grain production and export in the three countries and requires huge financial investment. However, it is not simply a lack of funding but also of transportation (investment) policies. Reforms in the ownership, maintenance and operation of transportation systems – including tariff structure – are necessary, especially if the private sector is to play a more active role. For example, in Ukraine, some private grain companies bought grain hoppers as part of investments in grain shuttle routes. However, subsequent government grain export embargoes and quotas undermined these investments.

Considering the large amounts needed to improve railway infrastructure, even if necessary reform occurs, private investment alone will not be enough to break current bottlenecks. Government funding will also be required.

### **Port Infrastructure**

In recent years, investors in Ukraine, Russia and Kazakhstan have financed improvements in port infrastructure. Ukraine has the best access to ports and has developed three state-of-the-art deep-water off-

loading facilities with a total estimated annual capacity of 25 million tonnes per year. Russia has two deep-water facilities located in Novorossiysk, and another in Tuapse. Russian ports however use costly direct off-loading and Tuapse does not have grain elevators.

Existing port capacity is most likely sufficient to meet exports over the next 5-7 years, but modernization of Russian port facilities is paramount. For export growth, further capacity – and therefore significant investment – is needed in the medium term.

### **3.3 Selected Focus Areas for Government Policies**

#### **Knowledge and Human Capital Development**

Over the past 15 years, the level of specialized education in the three countries deteriorated to the detriment of agribusiness and farm management skills, and therefore productivity. Further, as a result of reduced interest in the agricultural sector for younger generations and lack of career and life prospects in rural areas, there is insufficient reliable farm labor of the quality needed. Public agricultural research and extension systems have also collapsed. Providing support to knowledge and human capital development typically involves a combination of coordinated public and private efforts. Improving living conditions in rural areas, through the provision of essential public services, is central to attracting human capital to the agricultural sector.

#### **Strengthening Credit Systems to Foster On-farm Investment and Improve Access to Working Capital**

For a significant increase in grain production and exports in Russia, Kazakhstan and Ukraine, improved access to finance by agribusiness and local farms is vital. Credit institutions have to be reinforced, and farmers require financial products tailored to their specific long-term financial and working capital needs.

On average, agricultural machinery in these three countries is very old. Renewing existing equipment and expanding the overall stock of machinery (to cope with increased production) necessitates large investments on-farm. Domestically produced or imported equipment is readily available in the region at competitive prices. However, poor term credit and leasing arrangements limit investment in agricultural machinery.

Working capital is another major constraint for farmers wanting to purchase seasonal inputs. With EBRD support, the three countries have implemented warehouse receipt systems that improve access to working capital. However, such systems are still sub-optimal in Ukraine and Russia and require institutional and regulatory improvements.

The development of crop insurance would also decrease the reluctance of the banking sector to finance agriculture.

Some progress has been made in Kazakhstan where the government passed a law on mandatory crop insurance that aims to ensure farmers recover their production costs in the event of adverse weather. In partnership with the private sector, the government will make budgetary contributions to the scheme's indemnity fund. This program is supported by a World Bank project covering training, technical assistance and weather data infrastructure.

#### Improving Land Markets

For the three countries to realize their grain production potential, further reform in land markets is required, in particular in Ukraine and Kazakhstan.

Only as recently as 2006 the Russian government allowed the sale of farmland. This resulted in increased interest in ownership of agricultural land, primarily from tenants wanting to become landlords. Farmland values in Russia are however undervalued compared to other major world production areas (US \$1,500 per ha of most fertile crop land compared to US \$10,000 per ha in the United States), which has encouraged the rise of agrohholdings. To further improve access to credit, the government announced it will support the development of the agricultural mortgage market. This is of importance to farming agribusiness companies, as land securitization will mean billions of dollars of additional collateral.

In Ukraine, the process of formal farmland acquisition is currently blocked by the moratorium on farmland sale. Land is however acquired via various hidden schemes, and many companies believe long-term lease contracts will be converted into full land ownership rights.

In order to attract investors, the Kazakh government implemented land share policies and permanent land use rights. Farm workers were eligible for shares (and thus receive dividends) in newly created agricultural enterprises whose majority shareholders were mostly outside investors. As of today, there is no clear policy message as to the future of the agricultural land market in Kazakhstan.

#### Issues Related to the Development of Agrohholdings

The emergence of big farms – or agrohholdings – is a special feature of the three countries. It has supported the grain and oilseed sector's recovery but also raises issues for policy makers. Agrohholdings or "new agricultural operators" are typically large multi-farm operations of several tens – or even hundreds – of thousands of hectares under one operation, which as such can wield significant market power. These vertically and/or horizontally integrated corporate farms are managed by professional agribusiness teams and mostly owned by non-agricultural investors ranging from oil and gas companies to private equity firms (such as Renaissance

Capital and NCH Capital Inc). While substantially more efficient than independent farms at present, it is uncertain whether they will maintain their efficiency in production due to relatively poor links with local communities.

While there are no official estimates of the land area farmed by these companies, according to IKAR, in Russia alone about 350 agrohholdings farm approximately 8 million hectares, including those controlled by companies such as Gazprom. At least 12 major holding companies farm on 150,000 hectares or more (Cherkizovo, Nastyusha, Prodimex, Razgulay, Rusagro, SAHO, Yug Rusi, and others). It is estimated that agrohholdings will represent 40-50 per cent of grain production in Russia by 2016.

In Kazakhstan, groups of vertically integrated grain companies are believed to control 80% of total grain output from input supply to production, origination, export, and wheat flour processing (Ivolga, Alibi, and Kazexport Astyk). While in Ukraine, corporate farms specialize in broiler meat production (Mironovskiy, AgroMars), exports (Nibulon), and grain and oilseed processing. In this country, tax benefits for agriculture have provided incentives for investment in primary agricultural production, with corporate tax reduced to 0% and VAT and payroll tax privileges.

There are however social and environmental issues associated with the development of agrohholdings. Despite improved production, processing and marketing efficiency, conglomerate farms are still highly dependent on local and national government policies, in particular regarding the provision of public services such as schools and hospitals. The traditional requirement for agricultural enterprises to provide social services in rural areas is often imposed by local authorities and can prevent use of the most cost efficient business practices.

Future development of agrohholdings is likely to create important social challenges. Faced to operate on a commercial basis, firms will want to optimize their labor force. In addition, the size of these farms concentrates tremendous responsibilities in the area of environmental sustainability, depending on the farm practices they opt for.

Over the next decade, assuming further land reform and openness to international grain markets, agrohholdings and corporate farms (owned and managed by an individual or small group of rural investors) are expected to further expand, at the expense of former independent collective farms and family farms. This represents an opportunity for considerable production increases and economies of scale. However, the rise of agrohholdings will need particular scrutiny by policy makers, for the sake of social and environmental sustainability.