

Anna Margazova, Student Participant  
Linn-Mar High School, Russian Exchange Student  
Iowa City, Iowa

### **Agriculture in Development: Food Security in an Era of Increased Demand**

The years 2007–2008 saw dramatic rises in world food prices, creating a global crisis and causing political and economical instability and social unrest in both poor and developed nations. The causes of the crisis are many and complex. Firstly, while production around the world has been increasing, consumption for food, feedstock, bio-fuels and other commercial uses has been growing at an even faster rate. Other causes may be an increasing demand for a more varied diet (especially meat) across the expanding middle-class populations of Asia. More affluent societies use large amounts of grain for conversion into dairy, eggs and meat. Conversion uses far more grain than if people simply ate the grain themselves. One reason else is rising oil prices. Oil prices further heightened the costs of fertilizers, food transport, and industrial agriculture. Several distinct weather and climate related incidents have caused disruptions in crop production. Perhaps the most influential is the extended drought in Australia. Other events that have negatively affected the price of food include the 2006 heat wave in California's San Joaquin Valley, which killed large numbers of farm animals, and unseasonable 2008 rains in Kerala, India, which destroyed swathes of grain.

Long-term causes remain a topic of debate. These may include structural changes in trade and agricultural production, agricultural price supports and subsidies in developed nations, diversions of food commodities to high input foods and fuel, commodity market speculation, and climate change. The price of wheat has doubled in less than a year, while other staples such as corn, maize and soy are trading at well above their 1990s levels. Rice, which is the staple food for about 3 billion people worldwide, has tripled in cost in the last 18 months. In some countries, prices for milk and meat have more than doubled. In the worst-affected countries, families eat fewer meals, even skipping days, and children stop going to school to save on fees to pay for food. Child malnutrition is rising, and pregnant and nursing women are among the hardest hit. Women across Africa, for example, feed their husbands and children first before eating what little remains for themselves. So, especially now, it is very important to develop food production and food security technologies. And perhaps these are also the biggest opportunities for improving my home country, Russia.

Russia is the world's biggest country. The CIA's World Factbook says Russia is 1.8 times the size of the United States but only has roughly half the number of citizens. This means plenty of available farm land. The Daily Reckoning's Bill Bonner says that, even if only a small portion of this land was managed properly, Russia could transform global food production. And with the current de-collectivization of Russian farm land underway, proper farm management is now possible. Russia is an enormous place, but its collectivized farming system has been a disaster. More than 86 million acres of farm land has been allowed to go fallow. And even where the land is farmed, the yields are pathetic. Were its farms managed correctly, Russia could quadruple today's output per acre...while putting millions of more acres into production. Today, roughly seven percent of the planet's arable land is either owned by the Russian state or by collective farms, but about a sixth of all that agricultural land - roughly 35 million hectares, or about 86.5 million acres - lies fallow. By comparison, all of Britain has six million hectares of cultivable land. Even excluding the slivers of land contaminated by the Chernobyl disaster or by industrial pollution, Russia also has millions of hectares of untouched, pristine land that could be used for agriculture. Crop yields in Russia, however, are tiny. The average Russian grain yield is 1.85 tons a hectare - compared with 6.36 tons a hectare in the United States and 3.04 in Canada.

But why do we have small yields and do not have "correctly managed farms"? For answering this question we should look at history. Russia occupies an unusual niche in the global food chain.

Before the Russian Revolution and the subsequent forced collectivization of farming under Stalin, it was the largest grain exporter in the world. Russian grain production in 1913 exceeded one third more than volume of crop production of USA, Canada and Argentina together. In 1912, Russian grain export reached 15 million tons per year. The price of exported to England butter was twice as high as price of cost of annual gold extraction in Syberia. Excess of bread in 1916 was 1 billion pounds. But then was Revolution (farming was transformed into state co-operative agriculture, expressing monopoly of the state for manufacture, distribution, an exchange and consumption of the agricultural goods), collectivization, mass hunger in 1932-1933, World War II, during which caused ravage of numerous cities and villages and destruction of Russian agriculture. After it there was a long period of restoration and Cold War. Collectivized farming system didn't help to improve agriculture. First individual farms started to appear only 16-17 years ago, after collapse of Soviet Union.

But history and hard times in the past is not the only reason of small yields (compare with USA and others). To show you that it is useless to compare Russian agriculture with American or European countries I want to use one very interesting survey I have found on one Russian website.

Valentina Kharina has begun a way of the farmer in 1992. So her economy is only 16 years old. Clara Fjurst-Kjun is from Germany. Her father has organized a farm in 1964. So Clara – the successor of the economy equipped for 30 years. Both have pretty big herds of horned cattle. For simplicity I will name these economies “Valentina” and “Clara” and also I will try to compare them correctly. Most often economies are compared using their financial indicators. However, money is not a universal indicator. It depends on time and from government policy. “Firm standards” are necessary for correct comparison. We will use only impartial “Laws of the Nature”.

The first standard - biological efficiency of a district. There is quite suitable standard for comparison in the nature - deciduous woods. They grow several tens of years so they quite express biological efficiency of deciduous plants of the given district. For Germany – 130 centimeters per 1 hectare.; for the Central Russia – 65-75 centimeters per 1 hectare. From this comparison it is visible that from "Valentina's" 1 hectare it is necessary to expect forages in less 2 times, than from "Clara's" 1 hectare. So our first conclusion: for nominally identical volume of a vegetative biomass of "Valentine" it is necessary to process double size of "Clara's" fields and double number of workers that “Clara” has.

The second standard - parities of duration of the periods: “summer” and “winter”. Vegetative livestock feed grow and are being prepared during the summer. In the winter they are only being spent. For "Valentina" work on field and pasture of cattle begins in an interval: from April, 20th to May, 10th. Comes to an end: from October, 15th to November, 15th. "Clara" in March already has a sowing in. December - still mow juicy forages. The second conclusion: to prepare forages for the winter "Valentina" for 1 cow needs twice as much time as "Clara". Duration of the agricultural period of "summer" at them differs on the contrary: for "Valentina" - 24-29 weeks; at "Clara" of 39-41 weeks. Hence appears the third conclusion: one "Valentina's" worker for the agricultural period using identical technology can prepare a biomass at 1.5 times less, than "Clara's".

What do farms have? We will compare natural indicators. For 1 head of cattle it is necessary: at "Valentina" - 2 hectares of the earth; at "Clara" - 1 hectare. Amount of milk on 1 cow at "Valentina" is at 2-3 times less, than at "Clara", and twice as much of workers. However, biological efficiency of district at "Valentina" is twice as little as at "Clara" so their efficiency of use of the earth is equal. "Valentina" should prepare twice as much forages for the winter, and the agricultural period in 1.5 times is shorter, than "Clara's" so it needs more workers. We found out that "Valentina's" efficiency is not worse, than "Clara's". Because of short season and very low temperatures in winter Valentina can not use jet technology of manure removal and is not able to keep livestock feed in silage towers, that Clara uses. Moreover, because of climate it is not impossible for Russian farmers to specialize on certain kind of

product – and it is the main principle of western agriculture. There are several factors that make Russian way of development unique.

Because of all facts above it is useless to compare Russian agriculture with European or American agriculture. Other considerations include: Firstly, the population of Russia decreased from 148 millions in 1992 to 141 millions in 2008. Last years the death rate is getting lower and birth rate – higher, but it will take several years to stabilize, so now we don't have a problem with increasing demand in food because of population. Also, we have recently started bio-fuels production, using vast forestry resources and land not suitable for the production of food crops, so this key factor for the rest of the world does not affect our country so much. Finally, two thirds of Russians have dachas - seasonal or year-round second homes located in the exurbs of Russian cities. Many dacha owners own a land area, and are able to grow the needed amount of fruits and vegetables right on their plot. Many Russians prefer to grow vegetables themselves because of the excessive use of agrochemicals in the store-bought vegetables, and the higher costs of the vegetables in the stores and markets. Also, growing one's own food supplies is a long-lived Russian tradition. Even some affluent Russians practice that tradition. The most common dacha fruits in cool temperate regions of Russia are apple, blackcurrant, redcurrant, gooseberry, raspberry and strawberry. Popular vegetables and herbs are potato, cucumber, zucchini, pumpkin, tomato, carrot, beetroot, cabbage, cauliflower, radish, turnip, onion, garlic, dill, parsley, rhubarb and sorrel. Having dachas affect our agriculture and help Russians to overcome the food crisis.

Nowadays in Russia there are more than 200,000 farms, among which there are a lot of highly remunerative, farmers-millionaires, but in the lump they are weak, badly technically equipped, insufficiently equipped farms. The main reason for such a position - state shortage of money for granting credits on favorable terms, deficiency of agricultural machinery and a lot of other necessary supplies for work on the soil. Sometimes farms are being ruined because of their improper management. Frequently people who undertook farming, never worked on the earth and do not know any agrotechnical norms and rules.

Nowadays market mechanisms in villages are starting to operate. First of all starts to work competition. There are farmers who have already settled in the market and are capable to compete among themselves. It has led to that a rent for the earth raises every year. It positively affects well-being first of all owners of those small plots of land who have got them as a result of reform of 1991. Because of increasing rent, owners of the small ground areas are capable to develop their own small farms. Also there is an increase of cost of 1 hectare. As a result of it if the person has decided to sell the ground share, for example to move to a city, on its cost he can buy, for instance 2-3 garages in my city. Besides it well affects economy as production increases. Despite forecasts that such state forms of economy as collective farms and state farms, will stop to exist, the state formations continue to work and in some places with good administrators, frequently state farms develop better than private, being on the same territory. But, of course, in general, state farms work much worse than the private ones. If you consider a Russian farm on branches, plant growing today develops most dynamically, because it does not demand such additional means as shelters for cattle, pastures, or stern for the winter etc. But almost all places in the plant growing market are occupied, so capital transition occurs in cattle-breeding sphere of manufacture. Nevertheless, in spite of the fact that farming in Russia today develops, there are many problems connected both with maintenance by agricultural machinery, and with a labor.

A capital problem. The most important problem for today – absence of the capital or in other words money. There is no investor neither in the name of the state, nor in the name of a private trader. There is no money so there is no production. The Ministry of Agriculture and the foodstuffs says that it cannot give the capital because of money shortage in the state. The private capital does not invest in farming because there is no full legislative base in this branch and as investments will be made considerable any slightest change in the legislation can lead to improbable losses of the capital.

Another problem – taxes. Though now the tax laws of our country became more humane, any even the smallest farm is legislatively considered not as business without formation of the legal person, but as high-grade firm. That's why every farmer has to pay the raised rates of taxes and as taxes, many of which for the private businessman are legislatively cancelled. Hence the farmer suffers additional expenses. And a consequence of it is rising prices of the cost of production.

Agricultural machinery problem. The following problem is about techniques, to be exact about its absence. Many, especially small-scale enterprises, are not capable to bring common single payments for techniques. For example, if an annual turnover of money of farm (not profit!) makes 200 thousand rbl. (\$8,000), and a new tractor "Belarus" costs almost 350 thousand rbl. (\$14,000) the farm will never have enough of money which are in a turn. There are at least two exits from this situation: 1) Development of bank system and crediting of small farms. 2) Agricultural machinery sale in leasing. i.e. the form of the credit, but only payment goes not in a money's worth, but in production. It is better to develop second exit, but it is risky to buy Russian machine in leasing, because Russian manufactures do not give long term guarantees. World best manufacturers of agricultural machinery, such as "John Deere", "Case" and "Caterpillar", in general give a guarantee on some knots and units till 15-20 years at true operation of a product. We would be glad to buy foreign agricultural machinery, as it has recently started to open service centres and dealer offices of these companies (Russia has 13 John Deere dealers in 45 locations, that compares with more than 40 John Deere locations in North Dakota alone) and foreign techniques is much more expensive.

One else big problem is disparity of prices: in Russia to buy one liter of diesel a farmer should sell 3 liters of milk. Combustive-lubricating materials rise in price much faster than agricultural products, and city budgets are filled faster and better than rural. The only decision is creation of target programs which would level disparity in budgetary maintenance of city and rural settlements.

Despite all of the problems Russian agriculture is challenging, the state realizes the priority national project "Development of agrarian and industrial complex". In 2007, it included carrying out of the All-Russia Agricultural Census, the introduction of the country into FAO and the acceptance which has finished year of the Federal Law "About Agriculture Development". It has connected agricultural manufacture growth with the first of this four for a year for 2.8 percent. A decade after capitalism transformed Russian industry, an agricultural revolution is stirring in the countryside, shaking up village life and sweeping aside the collective farms that resisted earlier reform efforts and remain the dominant form of agriculture. The transformation is being driven by soaring global food prices (the price of wheat alone rose 77 percent last year) and a new change allowing foreigners to own agricultural land. Together, they have created a land rush in rural Russia. As a result, the business of buying and overhauling collective farms is suddenly and improbably very profitable, attracting hedge fund managers, Russian oligarchs, Swedish portfolio investors and even a descendant of White Russian émigré nobility. And the Russian minister of agriculture, Aleksey Gordeyev, speaks often of food in terms of national security. "Russia is very often perceived throughout the world as a major military power," he said at a food summit meeting in Rome early in his tenure. "At the same time, and perhaps above and beyond anything else, Russia is a major agrarian power."

If Russia could regain its old title of leading grain exporter, it would significantly relieve strained world markets and reduce prices. It could also reduce malnutrition and starvation. What is more, a significant expansion of farming capacity could add to Russia's heft as a world power, much as its prowess in oil and natural gas aided its resurgence in recent years. And soon, Russia - with 7% of the world's arable land - could not only be one of the world's greatest energy exporters, it could also be one of the world's leading exporters of food.

## Bibliography

- Nagayets, Oksana. Small Farms: Current Status and Key Trends. Wye College. 355-367. 10 Sept. 2007
- [http://www.ifpri.org/events/seminars/2005/smallfarms/sfproc/Appendix\\_InformationBrief.pdf](http://www.ifpri.org/events/seminars/2005/smallfarms/sfproc/Appendix_InformationBrief.pdf).
- Kolesnikov, Sergey. The stages of development of farmers in Russia and problems of formation and development of country (farmer) facilities.
- [www.crs.org](http://www.crs.org)
- John Deere Dealerships Interesting to Russians. *Iowa Farmer Today*. Sept. 27, 2008.