

The Downsizing of Russian Agriculture¹

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The hand of Adam Smith, which has already clutched the Russian peasant by his throat, will soon squeeze the life out of him (unnamed member of Russia's Council of the Federation).²

THIS ARTICLE ARGUES THAT the change Russian agriculture has experienced since 1991 is closer to *Sturm und Drang* wild market enforcement or suspension of rules than to reform. The Russian state shed its former regulative and supportive role at a time when its financial resources dried up, and it did so abruptly. Some law-making activities were initiated but they made little difference. Since 1999 the Russian state's fiscal condition has been improving, so the state is staging a comeback to the agrarian scene. But its interventions, though justifiable and similar to other national governments' impact on agriculture, are essentially anti-market. In the meantime, Russian commercial agriculture has been downscaled in terms of inputs and output alike. Livestock numbers and farmland have been particularly hard hit, and the ongoing agricultural recovery is more structurally and spatially selective than ever before. In the Non-Chernozem Zone of European Russia, for example, a spatially contiguous belt of agricultural colonisation has given way to an archipelago-like pattern. This article examines some acquired (socio-demographic) and inborn (environmental) constraints Russian farming faces and questions whether retaining of large swaths of farmland in Russia is compatible with a liberal economic order.

The article begins with an examination of trends in three modes of farming operations. I then turn to the Russian state's re-entering the agrarian scene — after being conspicuously absent for almost a decade — in an effort to rein in the improprieties of the wild market. Vertical integration of farms and food processors is examined, as it has spawned most if not all agricultural success stories since 1999. Human capital in rural Russia is then interpreted as a limiting factor of agricultural modernisation.

Aside from the publications of students of Russian agriculture, three other sources routinely inform the author about its current condition: Russian government statistics, Russian media reports and field trips. All three sources have become more limited and fragmented, and arguably less accurate, than before 1992. After the demise of central planning regions have taken diverging tacks, and so whatever has been observed by this author and his collaborators in selected regions such as Moscow, Novgorod, the Chuvash Republic, Ryazan' and Stavropol does not equate to a coherent picture of

the whole. In fact, these first-hand observations pose more questions than they answer. While agricultural statistics in Russia have been reliable for the most part, some mechanisms and constraints of centralised data collection should make one doubt the quality of recent (post-1991) data. For example, the output of household farms (officially 57% of the output in 2001) is assessed on the basis of local observations of only 0.1% of each region's household farms.³ These data are then extrapolated to 100% of households. As Evgeniya Serova, one of Russia's premier agricultural economists, mentioned, 'in order to obtain full and accurate information about the agro-industrial sector of Russia, it is best to go to the web site of the US Department of Agriculture'.⁴

There is an element of hyperbole in this statement: the USDA Foreign Agricultural Service reports are indeed informative, timely and detailed as far as national commodity markets are concerned, yet no breakdown by region or by type of farm is provided. Such analysis would be strange to expect from the USDA; however, no Russian agency provides what little that a foreign web site makes available to anybody about Russian agriculture. So Serova's point is meaningful, as it shows the Russian federal authorities' blatant disregard for one of the requisites of a free market: availability and timeliness of information.

Apparently unable to make sense of what is going on in the Russian countryside, the Russian media are devoting less attention to agriculture today than they did in the first half of the 1990s, and far less than in the last decade of the Soviet Union. Despite this, the first eight sections of the article are based on Russian media and government statistics. The ninth section, titled 'Rural Russia as an archipelago', derives from the original collaborative research. In the 'Discussion' I attempt to extract from the previous sections a common theme: a pervasive trend that I call downsizing of Russian agriculture.

Output and input dynamics

In 1998 the output of crop farming was 56% of that in 1990 (calculated in stable prices), and the output of animal husbandry was only 49.7%; growth resumed in 1999, but the 2002 output was still 67.5% of what it had been 12 years earlier.⁵ From 1991 to 2001 the output of grain declined by 27%; sugar beet by 54.8%; sunflower, 20.6%; flax, 18.4%; meat, 58.5%; milk, 41%; eggs, 26.4%; and wool by a factor of 5.6.⁶

In 1991–98 the best endowed regions of southern Russia sustained the most significant decrease in output. Yet in more recent years the south has been reclaiming its share of Russia's agricultural production thanks to enhanced growth in the wheat sector. Alongside the major producers of the past — the two southern breadbaskets of Krasnodar and Stavropol *kraya*, and regions with the largest urban markets such as Moscow and Leningrad *oblasti* — new leaders have emerged: the republics of Tatarstan and Bashkortostan. They have sustained the least reduction in cattle and have succeeded as grain producers (in 2002 Tatarstan, with its 5.6 million tons of grain and average yield of 34.5 centners per hectare, even outstripped Krasnodar *krai*).⁷ Success in these republics seems to be rooted in two factors: healthier rural demographics compared with the rest of Russia and significant financial support from the regional funds, owing to the sound regional tax base and lower (compared

with ethnically Russian regions) rate of transfer of regionally collected taxes to the federal budget.

According to various sources, from 20,000,000⁸ to 30,000,000⁹ hectares of arable land alone are already abandoned, and our field observations imply that both figures may be an understatement. (Note that, prior to its 2004 enlargement, the entire European Union had just 75,000,000 hectares of arable land.) Although much abandoned land (40%) is in the Non-Chernozem Zone, about 35% of it is in the well-endowed Central Chernozem and Povolzh'e macroeconomic regions.

The number of cattle on Russian farms reached its peak (60 million) in 1985-87 and has been declining since then, especially since 1990. In 2002 only 26 million cattle remained — 46% of the 1990 total. Likewise, in 2002 only 40% of the 1990 number of pigs and 25% of that of sheep and goats remained on Russian farms. The collective sector has been the biggest loser: in 2002 it retained 35% of the 1990 number of cattle, 27% of pigs and 2% (!) of sheep.¹⁰

In contrast to Soviet times, when the state of physical plant and agricultural machinery at the disposal of Russian farms was reflected in the monetary value of fixed assets (*osnovnye fondy*) and regularly published, it is difficult to locate any relevant measure of their current condition, a measure that would be reliable and comparable across time and space. The infrequent media reports from individual farms all across Russia and evidence obtained on field trips suggest that the supplying of Russian farms with new machines has plummeted, while what is available has been subject to wear and tear. In 2002 8,500 new domestic combine harvesters were purchased by Russian farms, while at the same time about 200,000 old combines were written off from the farms' balance sheets.¹¹ From 1965 to 1985 Russian agriculture was receiving 28% of the total investment in the Russian economy.¹² In contrast, in 2001 agriculture got just 2.7% of the vastly diminished total investment.¹³

Modes of farming operations

Officially, there are three modes of farming operations in Russia: household farms (57% of the gross agricultural output in 2001), collective farms and their successors (44%) and registered family farms (4%). In contrast to Soviet times, there is a pervasive tendency to under-report output in order to minimise corporate taxes, and household farms are exempt from taxation, so the question arises whether the share of household farm output is inflated. My familiarity with methods used in recording local household farm output reinforces this doubt. Other researchers have expressed similar doubt. For example, Efendiev & Bolotina believe that the officially recorded percentage of household farming in the gross agricultural output is exaggerated at least 1.5 times.¹⁴ Their opinion, however, is based not on the alleged inaccuracy of output recording methods but on an observation that up to 50% of the feed grain and up to 40% of the hay used by a typical household farm in Belgorod *oblast'* are obtained from a collective farm, 'and there are valid reasons to believe that the remaining animal feed is from the same source as well, only obtained illegally ... Today's peasant household farming in Russia will not survive a single day without [parent] collective farms',¹⁵ conclude the authors. On the other hand, the contribution

of about 19 million owners of urban residents' vegetable gardens to Russia's agricultural output is also a big unknown.

Although they are the major producer (at least overtly), household farms are not the major landholder, at least *de jure*. What is more, they are very diverse. While some of them are commercial establishments that do not register as independent farms for the tax-related reason mentioned above, the majority are subsistence providers that can exist only in symbiosis with parent collective farms. It is unclear how much labour, land and capital each mode of farming operations actually uses; consequently their relative efficiency is unknown. Only targeted surveys such as those conducted by Pallot & Nefedova¹⁶ are able to cast light on what is going on in the household sector of Russian agriculture.

Officially, the collective farm sector remains the largest landholder; it controls 81.9% of farmland, versus 11.3% controlled by household farms and 6.8% by registered private farms.¹⁷ However, 83–86% of the 27,000 collective farms are *de facto* bankrupt: their costs exceed revenues and they are delinquent on their debt payments.¹⁸ About 14,000 collective farms have their bank accounts frozen by the government¹⁹ because of their delinquency on several loans. Therefore they cannot solicit a new loan to purchase fuel and machinery. In 2002 the overall debt of collective farms to the federal and regional budgets increased by 70 billion rubles; in early 2003 the debt was about 350 billion rubles and rising. In 2003 60 billion rubles were written off that debt, so the remaining debt did not decline.²⁰ According to Paidiev, an associate of the State Corporation of Credit Institutions' Restructuring (GK ARCO) and a popular expert at www.opec.ru, 5% of collective farms are 'normal market enterprises' that can and do use bank credit as it is, that is, with current interest rates; 15% are enterprises that can be raised to that level through 'elementary reorganisation'; the remaining 80% are entities with a semi-natural economy that will not repay their debt under any circumstances at all.²¹

Price scissors and the role of the state

The so-called 'price scissors' (price disparity between agricultural products and agricultural inputs such as fuel and machinery) is one of the two most publicised aspects of Russia's agricultural scene. Whenever any local agricultural operator or an MP spokesman on behalf of regional or national agricultural interests is interviewed, this is the first topic talked about. According to the most faithful agrarian lobbyist and a presidential hopeful, Nikolai Kharitonov, in 2001 one ton of diesel fuel was priced at 4,500 rubles; in 2002 it was 7,000 rubles and in 2003 close to 10,000 rubles; at the same time the price of one ton of wheat has been in the 1,200–1,600 rubles range.²² According to another MP, Yaroslav Shvyryaev, who represented the former Regions of Russia faction, from 1993 to 2003 the price of wheat doubled but the price of diesel fuel increased 9.6 times and of petrol 8.2 times.²³ According to Aleksei Gordeev, Russian Minister of Agriculture, because of the growing price disparity, the 2002 total revenue of Russia's collective farms was 20 (!) times less than in 2001 despite the fact that in 2001 the actual productivity was higher than in 2000.²⁴ Note that the WTO insists on further increase of domestic prices on fuel as a prerequisite for Russia's admission.

The current role of the state in Russian agriculture is but a shadow of what it once was. Wegren's concept of 'state withdrawal' (as opposed to state weakness) reflects the quintessence of the post-1991 developments in the Russian countryside most accurately.²⁵ The effects of this withdrawal are all the more profound since during the last decades under the Soviet regime the state's role was overpowering. It manifested itself in generous subsidies (after 1982 mostly through mark-ups to predetermined and regionally differentiated sale prices on major agricultural products), free supply of machines, setting and maintaining a stable network of local buyers for each product/farm, dispatching hundreds of thousands of urban residents and soliders to work on farms during the harvest, and such benefits as additional trucks and other vehicles belonging to urban institutions etc. According to an estimate by Sergei Dankvert, Deputy Minister of Agriculture, the federal subsidies of the mid-1980s totaled \$60 billion a year, which is about the same level that the EU currently spends on subsidies to its farmers.²⁶ In contrast to that, current federal subsidies total slightly over \$1 billion.²⁷ According to the Russian consulting firm Assessor, one hectare of farmland receives \$200 from the federal government in the US, \$800 in the EU and \$12.50 in Russia.²⁸ And this is despite the fact that Russian farmers are less well equipped and confront harsher climates than their European and American counterparts. Indeed, 26% of Russia's farmland is located in sub-marginal and marginal climate zones with less than 2,200 degree-days above the base temperature of 10°C, and 16% of arable land falls in the area with 70–90% probability of drought.²⁹

Prior to 2002 most subsidies were channeled through discounted short-term credits. Their function was to replenish farms' working capital (seed, fuel, lubricants, animal feed and spare parts). Such credits were administered during sowing and harvesting campaigns and were supposed to be paid off by the end of December. However, most credits were never paid off. In June 2002 the federal government established new credit rules. According to these, most credit is for a three-year term; the government subsidises two-thirds of the interest the farms are supposed to pay the banks, the farm's property (but not land) acts as collateral and the banks are free to determine the creditworthiness of a farm.³⁰ Should such practices take root, they will make the availability of agricultural credit even more selective than before simply because half of all collective farms have their bank accounts frozen and no more than 5% have a tolerable credit history. Ironically, instead of sending a warning signal aiming at the eventual improvement of management practices, freezing farms' bank accounts starts a vicious cycle: it stimulates dumping farm products for cash, and this effectively means meager prices.

The idea floated by the former Prime Minister Mikhail Kasyanov (during his visit to the successful pedigree farm Irten in Novosibirsk *oblast'* in July 2003), that long-term debts of collective farms will be restructured only on condition that debts on *current* credit are paid off on time,³¹ would be worthy of closer attention were it not for the fact that dozens of similar initiatives have been put forward without any meaningful effect since the commencement of Gorbachev's *perestroika*. The same holds true in regard to Kasyanov's statement that farms not honouring their current financial obligations would be declared bankrupt, and that external crisis management would be appointed. It is entirely unclear who would become a 'crisis manager' under the existing acute deficit of able rural leaders. Even in the 1980s 20% of all collective farms

produced 70% of the total output.³² Compared with the recent and the more distant past, the current degree of farm polarisation is deeper, as the overwhelming majority of them have degenerated as economic units. In this situation, pleas of ‘aid the strong, not the weak’, emanating with ever-increasing frequency from local policy makers,³³ accelerate the demise of the majority of Russian farms.

Because federal subsidies are minuscule and unavailable for many farms, regionally administered subsidies appear to be more important. According to some sources, regional budget supports account for two-thirds of the entire state support of Russian agriculture.³⁴ However, the generosity of regional budgets varies from one region to another, which sparks inter-regional conflicts and tears the domestic market apart. For example, the broiler chicken producers from Samara *oblast*’ complain that they cannot compete with those from Orenburg and Mordovia, where subsidies account for 5.6 rubles per one kilo of chicken (whose average cost of production in Russia is about 30 rubles — \$1 — per kilo).³⁵ Because there are no rules at all stipulating a level playing field, even the best Russian farms have a hard time planning their activities as they face entirely unforeseen competition from both domestic and foreign producers alike.

The international food trade and the role of the state

The issue of food imports deserves special attention. ‘*Prodovol’stvennaya bezopasnost’ strany*’ (national food supply security) has long become a catch phrase in Russia. For some reason, it is believed that food imports should not exceed 20% of domestic consumption. If a country imports 30 – 40% of what it eats, as is the case with Russia, it is described as being on the verge of compromising its independence.³⁶ To be sure, the share of imports in the consumption of some products, notably sugar and beef, reaches 70 – 80%.³⁷ According to some sources, the monetary value of food imports to Russia matches that of Russia’s oil exports.³⁸

The agriculture-related topic which is broached by the mainstream Russian media with about the same frequency as price scissors is Western government subsidies to Western farmers, which enable Western exporters to sell at dumping prices in Russia. This reportedly causes \$12 – \$13 billion damage a year to Russian food producers,³⁹ though the methodology of such assessments is unclear. The outcry, however, is loud and lasting, and it is accompanied by wild-eyed exaggerations and chimeras typical of Russia’s public discourse. Here are some excerpts from the usually well-balanced source *Argumenty i Fakty*. ‘We are under the onslaught of cheap foreign food that our mercenary bureaucrats buy up for dumping prices and bring to this city [St Petersburg] ... What they bring is such crap. . . , it only destroys people. All these preservatives, all the genetically modified ingredients which are so abundant in the West end up in our people’s livers. [The Westerners] do not eat that stuff themselves; rather, they would send it to us. We are for them like Africa or a third-world country where anything can be dumped for profit. Instead of burying those “Bush’s legs” [US-produced chicken leg quarters] somewhere in an Arizona desert or in the state of Iowa, they send them to us and earn money on that . . . In America, they don’t eat them at all! America eats chicken breasts, necks and wings, while drumsticks are separated and, according to their laws, they should be destroyed. Only dog food is allowed to be made of those

drumsticks, but this would only utilise a small part of the stuff. So they have to dispose of the rest, and lo and behold, they discovered Russia to push it off. I think that after eating those drumsticks for one straight year one will simply die from excessive cholesterol'.⁴⁰ To be sure, this monologue is not from a staff writer; it is part of the interview with Aleksandr Egorov, chairman of Leningrad regional branch of the Agrarian Party and a local *sovkhos* director. But no sober-minded editorial commentary is offered, and the entire interview is titled 'Agrarians are convinced: peasants can feed Russia and Europe', which is more of an article of faith than anything else.

With pervasive opinions like this one, fanned by 'national patriotic' circles, the government finally began to take heed. So far, it has come up with import quotas. Some analysts noticed that those quotas were introduced when growth in agriculture attributable to the 1998 devaluation of the ruble and the ensuing import substitution began to show signs of abating. The first quotas were set in 2002 on raw sugar. Out of 6 million tons of refined sugar produced in Russia, 4 million tons are produced from imported raw sugar and only the balance from domestic sugar beet.⁴¹ It is believed that the introduction of the quotas helped forestall the economic demise of Russian sugar beet producers; the 2003 area under sugar beet expanded by 15% compared with 2002.⁴²

In early 2002 the Russian government attempted to limit chicken imports from the USA under the pretext of poor veterinary controls by the American side that overlooked salmonella poisoning in chicken produced by 14 out of 400 American poultry farms exporting chicken to Russia. A smear campaign against 'Bush's legs' was launched by the media. And the above-quoted interview from *Argumenty i Fakty* came in handy. In this author's opinion Russian chicken is indeed tastier, as is the case with most organically produced food. To be sure, Russian produce is not entirely organic; it just uses one antibiotic instead of the five allowed and used in the US, and the share of feed grain in total feed is higher at Russian poultry farms, while the input of man-made diet supplements is lower. Also, Russian feed grain producers use less mineral fertiliser. Regrettably, all these advantages are bound to evaporate as Russian producers compete with their Western counterparts. However, the above-mentioned smear campaign did not have consumer preferences in mind to begin with. A report about a 2002 survey by the Russian Institute of Agrarian Monitoring exposed the true goals of the entire 'chicken war'. The report testified that 'because of a scandal with "Bush's legs" the demand for American chicken lessened significantly. And this acted as a psychological endorsement of price rises'⁴³ on Russian-produced chicken. After retail prices increased by at least 10%, *thus benefiting the retailers*, Russian and American veterinary control services signed a protocol on 22 March 2002 stipulating 13 commitments of the American side,⁴⁴ and on 15 April 2002 the American imports resumed.⁴⁵ This was to be predicted because within the foreseeable future Russian poultry farms cannot meet the domestic demand for chicken anyway. Out of 166 large poultry farms, only 29 are working at full capacity; 119 farms require modernisation and 30% of all poultry producers are on the verge of bankruptcy. Thus the chicken deficit is about 80,000 tons a month.⁴⁶

In January 2003 import quotas on both red meat and chicken were introduced (Table 1). It is unclear, though, whether this will help Russian animal husbandry. The

TABLE 1
ACTUAL MEAT IMPORTS AND 2003 IMPORT QUOTAS (000 TONS)

	2001	2002 Estimate	2003 Quota
Beef	476	638	315
Pork	398	533	338
Poultry	1,391	1,149	744

Source: Mikhail Sergeev, 'Ogranichenie importa myasa kak predvestnik novoi ekonomicheskoi politiki', *Strana.Ru*, 28 January 2003, <http://www.strana.ru/print/170073.html>.

quotas resulted from effective lobbying by such groups as the Union of Russian Meat Packers (Myasnoi Soyuz Rossii). Its leader, Musheg Mamikonyan, claims that in the EU beef is subsidised at a rate 0.8 euros per kilo, which is comparable with the price of beef. As a result, the before-customs price of one kilo of beef is \$1.30, whereas without subsidies it would cost \$2.20, which approximately matches beef production costs on Russian farms. 'This is why European farmers should be brought to Russia; they would go bust, their famed technologies notwithstanding'.⁴⁷

Even if accurate, the above data lend themselves to various interpretations. In the same interview Mamikonyan acknowledged that in the area of beef 'we have only ten large producers left, whose market share is within 3–5%. To collect the rest, we have to make the round of about one million rural households, and they don't have an accountant and an administrator with a corporate seal'.⁴⁸ This of course means that true production costs are simply unknown. It is even more disputable that the degradation of animal husbandry in Russia that Mamikonyan refers to is traceable to Western subsidies. For example, the data on pork exports to Russia show that the largest market shares are those of Brazil (45% of pork imports) and China (11%), countries where agricultural subsidies are low; only one-fifth of pork exports are from the EU, but their prices are often lower than those asked by the Brazilian and Chinese exporters.⁴⁹ It is almost certain that the retailers and intermediaries, not farmers, will benefit from the price rises that will follow the introduction of quotas.

Russia's grain bonanza

Following three years (1998–2000) of crop failures, Russia has had two straight years with bumper crops (Table 2). This, however, was no blessing for the Russian farmer. Because of a drastic reduction in feed grain consumption (due to a drastic decrease in cattle numbers) the bumper crops created a grain surplus of about 15 million tons. As a result, domestic grain prices plummeted: in 2001 one ton of class 3 wheat was priced at 2,500 rubles, but in 2002 prices fell to 1,700–1,900 rubles.⁵⁰ However, most farms actually sold for even less. Because so many farms have their bank accounts frozen, they fall short of fuel and lubricants on the eve of the sowing campaign. This situation is to the benefit of the so-called *treidery* (a calque from 'traders'), a growing class of middlemen. They offer necessary supplies in exchange for future crops. Prices at which *treidery* bought up grain in 2002 were usually 800–1,200 rubles per ton, which was just 200–400 rubles above production costs. *Treidery* are the ones with the highest

TABLE 2
ANNUAL GRAIN OUTPUT IN THE RUSSIAN FEDERATION (MILLION TONS)

<i>1976– 1980</i>	<i>1981– 1985</i>	<i>1986– 1990</i>	<i>1991– 1995</i>	<i>1996– 2000</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>
106	92.0	104.3	87.9	65.2	63.4	69.3	88.6	47.9	54.7	65.5	85.2	86.5	73.5	73–75*

* Estimate.

Sources: *Rossiiskii Statisticheskii Ezhegodnik* (Moscow, Goskomstat, 1996), p. 563; *Sel'skoe Khozyaistvo v Rossii* (Moscow, Goskomstat, 2002), p. 58; Zhanna Oleinik, 'Rossiiskoe zerno uidet zarubezh', *RBC Daily*, 11 May 2004, http://www.ikar.ru/press/2004_05_/o.shtml.

profit margin and the speediest capital turnover in the entire food industry; according to available estimates, in the course of one year their total revenue was \$17.2 billion, while their costs were just about \$2 billion.⁵¹ According to Dmitrii Ushakov, financial director of Agros (see below), 'trade in grain, in the normal sense of the term, does not exist in Russia. Out of the entire 2001 grain output, only 20% was disposed of through grain exchanges and other market infrastructure. All the rest was barter'.⁵²

In 2001 the government came up with the idea of so-called 'state intervention'—buying up grain from the farms while the product is still highly priced. However, two years in a row a good idea was brought to nought by hapless implementation. Both in 2001 and in 2002 state purchases commenced in November. Because farms' warehouses are inadequate and poorly equipped, by that time most grain was already in the hands of *treidery*; it is they who capitalised on the state intervention. As for the farmers, most of them, ironically, profited far less from bumper crops than they did from meager crops a couple of years before. The year 2003 is a case in point: because the grain output was only 73.5 million tons (or slightly short of domestic consumption), grain prices were twice as high as in 2002.⁵³

While Russia has once again become a net exporter of grain, the total capacity of its grain terminals in Novorossiisk, St Petersburg and several small Sea of Azov ports was barely enough to process 6 million tons. The actual exports were much larger, however, as an unrecorded amount of grain crossed the border with Belarus, for the most part ending up in Italy and Greece. According to Smovzh, in 2002 Russia exported 18.4 million tons for a total of \$1.4 billion, and once again became one of the world's major grain exporters.⁵⁴ This success, however, was not to be repeated in 2003 because of a much lower output. Still, by September 2003 3.2 million tons had been already exported.⁵⁵

New agricultural operators

The idea of contractual links between large farms and food processors stemmed from the general success of the latter and their ultimate dependency on the former. Growth in agriculture commenced only in 1999 but most farms remain unprofitable. In contrast, many domestic food processors have been profitable since the mid-1990s, but their further development was stymied by a deficit of quality farm produce. The 1998 default made agricultural imports costlier. So the idea became popular that food processors, both domestic and foreign, will pull Russian farms out of the quagmire. The contractual links between farms and processors that emerged in the meantime range from long-term agreements (stipulating exchange of raw food for agricultural investment) to wholesale purchase of entire farms that become incorporated in agro-industrial companies.

Comprehensive information about vertical cooperation and integration of farms and food processors is impossible to obtain, as no entity in the Russian government or outside seems to monitor such developments systematically. Available piecemeal data were systematised by Nefedova and this author.⁵⁶ Since that time two conflicting developments have engaged attention: the development of new vertical structures, including those with capital accumulated outside food processing, and the emerging disillusionment about the ability of vertical integration to invigorate Russian farms.

Alongside Wimm-Bill-Dann,⁵⁷ which is active in the dairy and fruit juice markets, possessing 22 food processing enterprises and rumoured in October 2003 to be on the verge of acquisition by the French dairy giant Danone,⁵⁸ the following groups are the most publicised by the Russian media: APK Agros, RusAgro, Razgulyai-Ukrros, Planeta and APK Cherkizovsky.

APK Agros is a branch of Interros, owned by Vladimir Potanin; its major assets include the Norilsk Nickel combine, which produces 20% of the world's nickel output. APK Agros is active in grain, pork and poultry markets; it purchased several chicken farms in Stavropol *krai* and set up several new grain-producing farms on leased land in Russia's south.⁵⁹ At the time of its founding in October 2001 Agros planned to purchase up to one million hectares of arable land in order to produce at least two million tons of grain.⁶⁰

RusAgro emerged in 1996 as a sugar refining business. In 1998 it embarked on its own production of sugar beet, having created for this purpose a farm, Agointer, in Belgorod *oblast'* in cooperation with Deleplanque & Cie (France). Currently, RusAgro co-owns nine sugar beet farms in Belgorod *oblast'*, and has invested \$3.5 million in those farms.⁶¹ Since 2000 RusAgro has been actively expanding its grain operations. The company's website claims that in 2002 alone it invested \$500,000 in agriculture.⁶² In Russia this would be equivalent to one-half of the entire federal aid to collective farms. It is unclear what the grain-producing assets of the company are (that is, whether it leases land or buys existing farms).

Razgulyai-Ukrros is yet another sugar and grain group. It has long-term land leases in Krasnodar *krai*, Rostov, Kursk and Voronezh *oblasti* and is expanding its grain-producing branch. The sugar branch of the company does not seem to work land on its own; rather, it operates sugar refineries in several southern regions.⁶³

Planeta Menedzhment is a branch of Sibneft', until recently owned by Roman Abramovich, now better known as the owner of the British football club Chelsea. In November 2003, following the arrest of Mikhail Khodorkovsky, Planeta was transferred to the British-based Millhouse Capital. As an agro-group, Planeta emerged in 2001 under the leadership of Andrei Blokh, the former Sibneft' president. Planeta owns five meat-processing plants (with 8% of Russia's meat market), six poultry farms and eleven milk processors, and it controls many retail outlets, primarily in large cities in Siberia. The best known structure controlled by Planeta is Omsky Bekon, the largest pork-processing plant in Russia. Omsky Bekon itself has the structure of a vertically integrated company.⁶⁴

APK Cherkizovsky produces 11% of the sausage in Russia and controls nine meat-processing plants (of which Moscow-based Cherkizovsky is the largest, hence the name of the entire group), seven poultry farms, two large pork farms etc. Prior to 1998 85% of the meat processed by Cherkizovsky into sausage was imported. However, in August 1998 these imports became prohibitively costly for the processor, hence its expansion into farming operations.⁶⁵

According to Dmitrii Ryl'ko of the Moscow-based Institute for the Agrarian Market, vertically integrated companies are 'currently picking up the last unaffiliated farms in Moscow *oblast'* and continue to buy up the best farms in other regions'.⁶⁶ However, according to Gennadii Frolov, the manager of Cherkizovsky, 'no more than

10% of all Russian collective farms may be of interest to those buyers. The rest are irremediable'.⁶⁷ Some large food processors have recently changed hands, and it is not always immediately apparent who controls them.

These organisations are headquartered in Moscow and are the most potent players on the Russian food market. However, there are many regional corporate groups that originated as food processors but recently expanded into agriculture. The best known are Zerno Povolzh'ya and Buket (Saratov), Aston (Rostov-on-Don), Agriko (Samara), Agrokholding (Kursk) and Stoilenskaya Niva (Belgorod).

However, there are growing signs that the initial zeal of the new agricultural operators has proved difficult to sustain. Ryl'ko compares the expansion of Russia's corporate structures into agriculture with the 1875–90 bonanza farms of Minnesota and North Dakota, the epic story described by Hiram M. Drache.⁶⁸ According to Ryl'ko, the magnitude of land parcels currently under corporate control in Russia is comparable to those of the upper Midwestern bonanza farms. Russian corporate agribusinesses currently control by various means (ownership, lease and contracts) about 3 million hectares of farmland; four corporations control over 300,000 hectares each, and at least six corporations control 100,000 hectares.⁶⁹ It is on this land that most of the technological modernisation of Russian farming is taking place. For example, out of \$84 million spent by Russian importers in 2001 for foreign grain combines, at least \$60 million was spent by the new farming operators. However, Ryl'ko believes that some of the reasons that conditioned the ultimate decline of bonanza farms in North America may soon be replicated in Russia.

The new Russian agrarian operators have run into four principal problems. First is the assembly line technocratic thinking that finds it difficult to adjust to a production activity whose stability is 'in God's hands', not entirely within management control. This is especially true in crop farming. A collateral second problem is that costs of establishing cohesive vertical management structures have proved higher than expected. Indeed, according to Yurii Kostyuk, who oversees all the farming operations of Rusagro, 'many milk, grain and other food processors expanded into farming under pressure from the local administrations and in the hope that farming would become profitable at some point in time. It is not by accident that sugar refineries, dairy processing plants, grain elevators and mills were privatised first, whereas collective farms did not interest anybody. They are still unappealing because a programme of state regulation of the agricultural market does not exist and state aid to farmers is inadequate to make agriculture profitable and attractive for investors . . . No vertically integrated structures will invest in working land, if imported stuff [subject to processing] is cheaper than domestic'.⁷⁰ Kostyuk believes that vertical (farming – processing – marketing) integration is only feasible when profit is generated at every rung of the ladder, and the only hope of making farming profitable rests with state support.⁷¹

The third problem of agro-industrial integration cited by Ryl'ko is that the new operators face an acute deficit of skilled workers in the villages. The fourth problem is that the new operators are viewed as complete aliens by the majority of rural villagers, who resist their management style.⁷² This brings us to Russia's rural population.

Human capital of the Russian village

In 2002 38.8 million people lived in the Russian countryside (26.7% of the total). Retired people account for about 23% of the rural population. The rural population is scattered among roughly 150,000 villages, many of which still cannot be reached on paved roads. Rural population declined from the early 1930s up until 1991. In the early 1990s it suddenly began to grow. Initially (1991–92) that growth was bogus — produced entirely by reclassification. In contrast to 1926–90, when large villages used to gain urban status, the reverse process commenced, with small towns now keen on becoming villages (not so much due to depopulation as to lax rules of land allotment in the countryside). In 1992–94, though, rural growth was genuine. Disregarding reclassification, about half a million people was the net population gain of the Russian countryside in 1991–94. Then the sources of that inflow began to dry up and from 1995 the rural population decline resumed. In Russia as a whole, rural depopulation in a strict sense commenced only in 1992, when deaths began to outnumber births. However, in Central Russia and in the Northwest this has been the case from as early as 1965–67.

The two factors behind the short-lived rural population growth were the removal of state controls over retail prices, which left many urban residents worried about feeding their families, and return migration from Central Asia and resource areas of Siberia. Numerically, the second component of rural population growth exceeded the first. Most of those returning from Central Asia were urban by birth and upbringing, yet they dropped anchor in rural villages because few cities and towns offered them dwellings. For most of them, though, this was a mere stepping stone to a nearby town. By the mid-1990s the most painful stage in Russian capitalism's second coming was over, and migration assumed its previous pattern: from the countryside to the city. By 2001 the outflow from the countryside had not just returned to its 1990 level but actually exceeded it (86,700 versus 72,600).⁷³

For a long time rural depopulation and the ensuing shortage of labour was one of the most frequently discussed rural issues. Today, however, rural unemployment commands attention.⁷⁴ Current unemployment is seemingly at odds with decades-long lamentations about the shortage of rural labour. Indeed, since 1996 the officially recorded rural unemployment has been higher than urban unemployment (11.6% vs. 9.6% in 2000).⁷⁵ In part, this is the result of the different value of cash benefits, however small, in the city and in the village. In large cities particularly, many choose not to register as unemployed, and they work in temporary jobs and receive payments in cash without any paper trail. In contrast, in villages beyond a short commuting distance to large cities, barter and natural economy reign supreme, and cash appears to be the most deficient commodity. Hence the much higher rate of unemployment registration in the countryside than in urban areas. Yet even in the countryside unemployment records are short of the actual spread of joblessness. Extrapolation of survey data obtained on the basis of the ILO methodology put the 1999 rural unemployment in Russia at 18%.⁷⁶ According to Nefedova, in the 1990s the number of those employed only on their household farms increased from 1.4–2.0 million people to 3.4–4 million people, and their share in the working age rural population increased from one tenth to almost a quarter.⁷⁷

Our statistical analysis (see below) nevertheless suggests that the sheer number of people per unit of land is still the most important predictor of agricultural productivity, while our field observations point to the low quality of rural labour: all too many rural unemployed are simply unemployable because of chronic alcoholism. In the Soviet past, dismissing a binge drinker was next to impossible; one was supposed to resort to moral exhortation instead. Dismissing a drunkard is an option many agricultural managers now take, but finding a sober replacement is more difficult than ever before.

The idea that the quality of human capital in the countryside is the factor most restricting market-style agrarian change is not new.⁷⁸ In Russia, drinking and theft have been national maladies for as long as one can remember. A popular legend has it that when Nikolai Karamzin, a brilliant historian, was asked to state briefly what was going on in his homeland, he uttered one word: *'Voruyut'* (they steal).⁷⁹ Theft and drinking are often interconnected. Governor Mikhailov of Pskov *oblast'* said that in the summer of 2000 villagers of his region repeatedly pulled down electric wires to sell as non-ferrous scrap metal in order to buy alcohol. As a result, dozens of villages stayed without electricity for weeks between April and June 2000. The part of the interview that impressed me the most was that about 800 people perished dismantling those wires. This was twice as many as those killed in combat in Chechnya during the same time.⁸⁰ Nefedova's recent book includes quite a few observations of rural alcoholism. One such observation relates to a large collective farm in Kostroma *oblast'*. This farm's administration replaced cash payments by 'debit cards' (only cardboard, not plastic). Such cards can be used to buy any food item but alcohol in the local stores. At one point, however, this practice was interrupted and cash payment was delivered. Immediately most villagers went into binge drinking and did no work for days in a row, so the administration had to restore the debit cards.⁸¹ Another observation concerns mortality in Komi-Permiak *okrug*. In Kosa *raion* of that *okrug* one-third of all deaths are due to unnatural causes, and half of those are due to poisoning by poorly distilled industrial alcohol. By the villagers' own account, between one-third and half of rural adults are chronic alcoholics.⁸² Based on evidence like this, it is likely that the Russian village is ahead of the Russian city in the pervasiveness of theft and alcoholism and their impact on the economy and everyday life. The problem is by no means elusive, but while it strikes one during field trips, it has long defied blunt description and 'scientific' analysis.

To be sure, some thought-provoking ideas about the problem continue to be delivered by the Russian media. Sometimes it is not so much the nature of information disclosed that appears striking as the casual tone with which it is related. 'It may be that the farm's attempt at eradication of theft may exceed the enterprise's energy', a columnist of an agribusiness journal writes. 'The thing is that they would always steal, so it is important to make sure that theft does not reach the level when it is critical for business'.⁸³ Some farms are trying to limit drinking by fiscal means. For example, on farms associated with RusAgro, workers are paid in cash only after the harvest is over. Prior to that, the workers receive vouchers that cannot be cashed right away. Yurii Kostyuk of RusAgro comments: 'The very fact of receiving pay is a festive occasion, which has to be celebrated'.⁸⁴

One other popular means of fighting alcoholism — forcing workers to undergo implants that cause the body to react adversely to even small quantities of liquor — is described in the same agribusiness journal: ‘The director of the Vostochnyi *sovkhov*, Astrakhan’ *oblast*’, talked one worker into those implants. We found a doctor, assigned an advance payment, and drove this worker to the city . . . Now already five workers have implants. These are precious cadre, whom we cannot dismiss because there are no other machine operators in the village’.⁸⁵

Because money is the most deficient commodity in the Russian village, buying a bottle of vodka in a local store has become a rare occasion for most, one associated with major holidays and family celebrations. More frequently people get alcohol from local moonshine producers, who charge 20–25 rubles per 0.5 litre bottle (compared with 60 rubles for a bottle of vodka in a typical rural food store) but peddle a product of poor quality. As mentioned above, an even more popular drink in the Russian village of today is an industrial alcohol-containing liquid such as glass cleaner and the like. These are especially poisonous. An article in *Izvestiya* describing this situation focuses on an unsuccessful fight for sobriety led by women in one of the villages of the Bol’shesel’sky *raion* of Yaroslavl’ *oblast*’. In that village even secondary school children became inveterate drunkards; in pursuit of cash, they began to burgle lonely retired women.⁸⁶ Bol’shesel’sky was the very first rural *raion* which I surveyed soon after my 1974 graduation from Moscow State University. As an associate of the physical planning department of Rosgiproniisel’stoi, I was dispatched to gather data from the *pokhozyaistvennye knigi* (household record books) of rural soviets with the aim of distinguishing between prospective centres of rural investment and rank-and-file villages that would be subject to resettlement. In the record books about every eighth local child was referred to as *invalid detstva*, that is, a child with an inborn defect. A rural soviet secretary explained that most of these children were mentally retarded due to chronic drinking of at least one of their parents. Already in the early 1970s the spread of rural alcoholism was astounding. At that time, however, most people drank hard liquor produced and certified by the state. Almost 30 years later the situation is apparently past the point when diagnoses like ‘drinking’, ‘binge drinking’, and perhaps even ‘alcoholism’ reflect the true meaning of the problem. What is going on today is more aptly described as ‘pervasive human degradation’, ‘profound degeneration of a genetic pool’ etc. While such qualifications may *sound* harsh, they are not off the mark at all.

The following are some excerpts from an article about the new managers recently dispatched to Russian villages by corporate agro-industrial groups:

New managers who came to the village could deal with urban collectives, large and small, without a problem. Having come to the village, they realised that although people are plentiful, there is nobody to work with [this specific observation is in reference to Moscow *oblast*’, one of the least ailing segments of the Russian countryside]. ‘They drink so much’, says the manager of Semenovskoe *sovkhov* near Mozhaisk. ‘It’s a shame that young women drink as well: if my milkmaids haven’t come to work, it’s always because of a hangover’.⁸⁷

Almost all the new companies had to spend through the nose to safeguard the leased land from thieves. The detachments of guards were at times 200–300 people strong. However, they were not always helpful: the villagers still contrived to outwit those guards, and the guards did not stand on scruples either. Sergei Kislyakov, a *sovkhov* director from Samara

oblast', reminisces: 'At first we hired militiamen. They did not let anybody dig up potatoes, but they did themselves and invited their families to take part. Then we hired Cossacks; those, however, used to have a good time with the girls, then they slept all day long, and in the meantime, potatoes were being stolen by the sack full'.⁸⁸

In Samara *oblast'*, eight volunteers created an association of private grain farmers. In 2002 they had 12 members and 4,000 hectares of farmland, most of which is leased from collective farms. Vladimir Storozhkov, the association's leader, describes contrasting working habits in this way: 'During summer heat, our members sweat over in the fields. They only take a short lunch break and hurry back to work. In the meantime, in the surrounding collective farms, there is nobody in the fields, combine operators sit in the shade at the pond and drink beer. They are tired'. Storozhkov reminisces how during harvest their truck driver was apprehended by militia at midnight. The militiamen were certain that the driver was transporting stolen grain. 'They still cannot understand that those who steal do that in broad daylight during day time and in front of everybody. As for us, we had to harvest as soon as possible before grain begins crumbling, so we worked day and night'.⁸⁹

The majority of new managers agree that it makes more sense to set up a new agricultural business than to deal with a *de facto* bankrupt collective farm. This is because on an existing farm one faces an insoluble problem of selecting the best and dismissing the worst labourers, 'which is fraught with social tension'.⁹⁰ 'The generation has to change so something can change for the better in the village', says Vladimir Bovin, General Director of the Agriko group in Samara *oblast'*.⁹¹

Rural mores: a perceptive probe

For a long time, no researchers went beyond unsystematic observations of the quality of human resources in the Russian countryside. The situation began to change recently. Russian sociologists, equipped with modern theories and also willing to call things by their proper names, began to ask questions that could cast light on accepted norms of everyday rural behaviour, attitudes and motivations. Of several known research attempts in that area, the most revealing, articulate and cogent analysis is that by Efendiev & Bolotina. It is based on two 2000 representative surveys in Belgorod *oblast'*, one of the premier agricultural regions of Russia.

Belgorod *oblast'* is blessed with some of the world's best chernozem soils. Unlike the Non-Chernozem Zone of Russia, here most villages are large and those abandoned or about to die out are rare, and younger generations are well represented in the villages. The region is compact and has one of the best developed networks of paved roads in Russia; natural gas and piped water are available in every village, although their availability in each house is subject to the household's budget constraints. At the time of the survey, there were no pension arrears; salaried employees in the public sector (e.g. teachers) were regularly paid. Also, outlets were created for households to sell surpluses of their own output, and they were assisted with transport of such surpluses.

However, despite decidedly more favourable external conditions for rural inhabitants than in most Russian regions, only 27.8% of all households surveyed perceived their livelihood as tolerable (all basic needs were met, but buying new clothes and durable goods was problematic), while only 0.8% were entirely satisfied. Over half of all households barely made ends meet: they wore old clothes, and any necessary

purchase beyond daily food put people's budgets under inordinate strain and required borrowing money. In-depth interviews and observations inside people's homes showed that these self-perceptions probably understated the actual level of deprivation. Of all households, those of the retired fared the worst: 16% of them lived in abject poverty, and 72% barely made ends meet.⁹²

The authors set out to highlight some of the major reasons behind the hardships routinely experienced in one of the best endowed regions of Russia. The following important findings are noteworthy.

At the time of the survey, monthly revenue from pensions (701.5 rubles) exceeded the average wage in collective farms (350 rubles) and in state budget-supported institutions (500 rubles). Under these conditions, the most widespread reason for retired people's deprivation was that more than half of them supported non-working adult children, alcoholics for the most part. However, only 32% of the retired received support *from* their grown-up children.

Efendiev & Bolotina charge that the elements of market implanted in the Russian countryside boil down to vastly expanded freedom of choice (to be a member of a collective farm, to become a registered independent farmer or to live off one's household farm) and moderate state assistance to those exercising this freedom (e.g. bank credits for home-builders to be paid off by agricultural production; aid to households selling milk, meat and eggs etc., as well as delivery of the network utilities such as natural gas, with households charged installation costs should they choose to use these utilities as well as service fees).

As freedom of choice expanded, so the ability to make a difference in one's livelihood gained in importance. While previously people were held on a short leash, it has been significantly lengthened during the years of the so-called reform. The spread of three attitudes was probed: 1) unresisting acceptance of current livelihood ('This is as good as it gets; we do not anticipate a better life'); 2) wistfulness, desire to live better yet without undertaking any practical steps in that direction ('We hope and dream that our situation will improve somehow'); and 3) activism, implying practical steps towards improvement of one's living conditions and realisation of one's responsibility for that improvement ('We undertake concrete steps towards a better life'). About 58% of those surveyed took the second attitude, and three-quarters of those professing it were poor or extremely poor; 16% professed total resignation; and only 26% were activists. This latter attitude is usually embraced by those whose well-being is above the average.

Self-restraint or 'minimisation of needs' appeared to be a frequently encountered habit, particularly among those resigned and submissive but also among passive dreamers. For example, despite available piped water, only 33% of young households had a shower, and 28.7% not only lacked this amenity but also did not feel any urgency to acquire it (the remaining 33% did feel such urgency but simply did not have adequate funds and did not anticipate having them in the foreseeable future). A similar situation pertained to a vehicle. According to the existing stereotype, most, if not all, youngsters in Russia want a vehicle. Also, in the countryside a car is more of a necessity than a luxury. However, of younger households surveyed, 38.8% had a car; 25.9% wanted a car but just could not afford one; but 34.5% did not believe they needed one.⁹³

TABLE 3

SITUATIONS IN EVERYDAY LIFE: WHAT VILLAGERS FAULT AND WHAT THEY DEEM NORMAL (% OF TOTAL RESPONDENTS)

<i>Situation</i>	<i>Entirely inadmissible</i>	<i>Undesirable, yet by and large admissible in today's life (one would better shut one's eyes to this)</i>	<i>I don't see anything wrong in this</i>
A man from the same village has drunk too much (after work or on a day off), made a row, and lay about in the road	54.3	38.1	7.6
People from the same village drink alcohol at work and then keep on working under the influence	58.9	35.4	5.6
A collective farm tractor operator drove home to lunch in a farm's tractor	16.3	46.9	36.8
A milkmaid stole milk (or combined fodder) from a collective farm cowshed in order to make ends meet	20.9	54.3	24.8
Children went to a collective farm field to get sunflowers for themselves	22.9	52.5	24.6
Somebody got into a house when the hosts were not home and stole all the remaining money	95.2	3.9	0.9
A person from the same village took hay from a collective farm on the sly to feed his own cow	33.4	51.9	14.7
A farm (or an office) boss is bent on giving the most important jobs to his yesmen and relatives	55.6	31.9	12.5
Children got into somebody's orchard to pick apples	32.9	44.2	22.8

Source: A.G. Efendiev & I. A. Bolotina, 'Sovremennoe rossiiskoe selo: na perelome epokh i reform. Opyt institutsional'nogo analiza', *Mir Rossii*, 11, 4, 2002, p. 23, based on a 2000 survey of 857 able-bodied residents of nine villages in Belgorod *oblast'*.

Efendiev & Bolotina write that a deep-seated conflict of two attitudes, activist (embraced by the minority) and wistful (embraced by the majority), is the principal if latent conflict of rural life in today's Russia, just as during the years of the New Economic Policy preceding collectivisation.⁹⁴ This conflict is hidden only up to a point. Because the conflicting attitudes — one preaching individual responsibility and the other fomenting the spirit of dependency — are driving social stratification, they are fraught with cataclysms.⁹⁵

No less suggestive is which actions or outcomes are deemed normal or legitimate by villagers and which are denounced as inappropriate. It is a commonplace among sociologists that, when responding to questions with a noticeable moral undertone, respondents tend to favour answer options that are self-flattering. If that is the case, then the following revelations are indeed alarming.

The authors presented their respondents with 26 casual situations and asked them to class each as either 'totally inappropriate', or 'unwelcome but by and large acceptable

in today's life (one you would turn a blind eye to)' or 'entirely acceptable' ('I do not see anything wrong about it'). Table 3 includes some results. The recurring theme is theft. While theft of personal property is decidedly disapproved of, stealing property from a collective farm is deemed quite acceptable. According to the authors of the survey, the widespread toleration of theft from a collective farm is what makes it legitimate in the eyes of rural people. However, because stealing from a collective farm, not from a fellow villager, is deemed acceptable, a reasonable question is posed whether this kind of theft is condoned because it is perceived as compensation for long-term wage arrears and other improprieties of the collective farm arrangement. The alternative explanation is that stealing is 'simply' a socio-cultural phenomenon, an expression of 'institutional' immaturity whereby universal ethical norms precluding theft have not developed. A series of in-depth interviews allowed Efendiev & Bolotina to validate this alternative explanation and reject the economic compensation theory. First, it appeared that 49.5% of respondents acknowledged that they stole themselves, while only 5.9% responded that they did not steal because they were disgusted by the idea. At the same time, 22.8% said they did not steal because there was nothing to steal anymore. Second, no evidence was found that those who stole were poorer than those who did not. On the contrary, acknowledgment of personally committed acts of theft was almost equally widespread among self-acknowledged paupers and well-to-do people alike. Third, those who were prone to attribute theft to economic reasons acknowledged most frequently that they stole themselves. Thus economic compensation has all the trappings of an excuse. On the contrary, those who resort to moral reasoning (e.g., 'people have lost their consciousness') commit acts of theft 6–7 times less frequently. Fourth, the frequency of confession to stealing is correlated with references to what people's parents used to do. The authors' conclusion is that in a Russian village theft is a socio-cultural, not an economic phenomenon.⁹⁶

Efendiev & Bolotina show that access to a collective farm's grain, combined fodder and transport to deliver them from a field or a collective farm warehouse to one's household farm is most instrumental in the latter's productivity. Thus the collective farm manager and team leaders, who routinely have such access, usually have more productive household operations.

Although close to 80% of all villagers surveyed called the current condition of their collective farm 'bad' or 'very bad', very few would like to withdraw. Two-thirds said they did receive some income from their collective farm, and one-third acknowledged that they needed animal feed that could be procured from a collective farm legally or illegally. It appears that professing dissatisfaction with the current economic condition of most collective farms does not lead to rejection of this mode of farming in principle. On the contrary, collective organisation of agricultural work is deemed the most legitimate. The respondents were presented with four options regarding the widely debated possible ways of transforming collective farms: 1) transfer them to state management that would preside over agricultural production and village affairs in general (*de facto* return to state farms or the Soviet-style collective farm at best); 2) disband collective farms and distribute the land among members so every household would work land on its own; 3) disband collective farms and distribute land among those willing to become independent farmers so the rest may lease their land shares to those farmers and be hired by them as labourers; and 4) transfer a collective farm to

the jurisdiction of a strong manufacturing enterprise that would become the co-owner of the land.

This part of the survey resulted in two meaningful outcomes. First, many people (over one-third of those surveyed) were stumped for an option. Those without any particular opinion were especially numerous among the poor. Efendiev & Bolotina hypothesise that some villagers are intellectually challenged or dimwitted, a hypothesis that may come across as politically incorrect rather than unrealistic. Second, two out of the four options above, No. 2 and No. 3, were flatly rejected by the overwhelming majority of those who had an opinion. Interestingly, not just the poor did so — 76% of well-to-do villagers said ‘no’ to the second option, and 67% said ‘no’ to the third.⁹⁷

Attachment to collective forms of work thus remains incredibly strong and is apparently deep-seated – something this author described in previous publications.⁹⁸ According to Nefedova, though, collective ways are not transferred to most activities *outside* a large farm: in today’s Russian village help in plowing up one’s backyard or in home repairs is no longer provided free, and villagers typically do not coordinate sale and supply activities related to their household farms. This is the case in ethnic Tatar villages surveyed, but not in Russian ones. In the words of Nefedova, in the process of market transformation Russian villagers are losing their traditional fortes like openness and unselfishness, and not gaining anything valuable in return.⁹⁹

Rural Russia as an archipelago

The majority of collective farms that control the bulk of farmland in Russia are languishing and are not even commercial farms any more, yet growth is recorded in the total agricultural output (as has been the case since 1999). This indicates that productivity contrasts have reached a critical point. The loci of farmland that most corporate groups control are either in the major grain producing regions of the south or in the environs of the largest cities in the Non-Chernozem Zone (NCZ) and Siberia. However, the overall farmland under corporate control does not exceed 3 million hectares, which is just 2.5 % of Russia’s farmland total. Actually it may be larger but not much. These are evidently the most productive swaths of farmland. As to the other extreme, field observations bear testimony to rampant land abandonment. As mentioned above, between 20 and 30 million hectares of arable land are in this category. Also, Russia’s rural population is aging and declining; Goskomstat is projecting that the 2015 rural population of European Russia will be 7.8% lower than it was in 2001, including a 15.2% decline in the Non-Chernozem Zone and a 3.1% decline in the better endowed south.¹⁰⁰ So far, this decline has been spatially uneven, with intra-regional contrasts often exceeding inter-regional ones. All things considered, Russia’s commercial agriculture will thus soon resemble an archipelago with ‘islands’ of productive farmland immersed in a ‘sea’ of stagnation and decay, ultimately a social desert. Like dough rolled out so thin that it tears apart, ruptures in the established belt of human colonisation and settlement have emerged in rural Russia and are likely to expand rapidly.

Together with Nefedova and Zaslavsky, I set out to describe and explain the spatial dimensions of this process. The entire methodology, including statistical analysis of a unique, *raion*-structured database for the entire European part of Russia, and ten

maps reflecting the principal results, as well as their detailed interpretation, are presented elsewhere.¹⁰¹ In what follows, five aspects of this interpretation are summarised.

Land abandonment is routinely preceded by consistently low productivity of collective farms. However, in Russia the average productivity is not high by any standard to begin with. The 1999–2001 average grain yield per hectare was 1.5 tons. For comparison, the 2000 grain yield was 5.7 t/ha in the EU, 2.8 t/ha in Canada and 2.5 t/ha in Poland.¹⁰² The 2000 average milk yield per cow was 2,138 kg in Russia, 7,332 kg in Canada, 5,918 kg in the EU and 4,269 kg in Poland.¹⁰³ In our case yields were classed as low if they fell below 1 t/ha, that is, barely recovering the physical mass of seed. In the case of milk yields per cow, 'low' meant less than 1.5 t, which is closer to a milk yield from two well-treated sheep. Thus low effectively meant abysmally low. If productivity of this magnitude was recorded both in the late 1980s and in the late 1990s, this is what we regarded as consistently low and heralding land desertion in the near future.

Land abandonment is a process, whereas estimates of productivity reflect a steady state or an outcome. Therefore it was desirable to arrive at a combined statistic (for each *raion*) that would reflect both a steady state and a change instrumental in and indicative of collective farm atrophy. Such a change, in our view, was the decrease in cattle numbers. Changes in cattle numbers are not correlated with productivity and therefore cannot be part of a single component score, if factor ecology methods are applied. However, if an area displays two characteristics — it had exceedingly low productivity at both the beginning and the end of the decade, and disposed of many of its cattle during that decade — it is then most likely to end up losing much of its farmland in the near future. 'Many of its cattle' in our analysis meant that by 2000 no more than 20% of the 1990 number of cattle remained.

Raiony with productivity indices meeting all the above criteria were labeled 'black holes'. This reflects the image many Russians habitually invoke when they think about investing in their country's collective farms: to them it is like dropping money into a black hole. *Raiony* that meet most of the above criteria (but not all) were labeled problem districts. The black holes occupy 31% of European Russia (its northernmost part devoid of crop farming was not taken into account) and are home to 17% of its rural population. The problem districts' shares in land area and rural population are 21% and 15% respectively. It would be safe to say that in the districts of both groups collective farming has effectively collapsed (for the black holes this outcome is just more certain) and so further contraction of agricultural land is likely to take place there.

The opposite extreme, comprising the set of the most productive areas, is shaped like an archipelago, particularly in the NCZ. This is so because in the NCZ *raiony* of this category are located in close proximity to *oblast'* capitals, and the larger the capital in size, the larger is the agricultural oasis of relative prosperity. In the south, centre-periphery productivity gradients exist as well, but they are not so steep. However, in some Chernozem regions, like Tambov and Penza, they are almost as steep as in the NCZ.

In the European part of Russia as a whole, integral productivity estimates¹⁰⁴ are correlated with rural population density. So the most depopulated areas predictably

lose the most farmland. In its turn, rural population density is correlated with closeness to major cities in the NCZ and with soil fertility in the south. Therefore, whereas in the NCZ the most remote farmland is likely to be abandoned, in the south excessively arid land is likely to be abandoned. This is because the most widespread fertility limitation in Russia's south is excessive aridity. Thus the emerging geography of a vastly downsized Russian agriculture is likely to be linked more closely than before with the spatial pattern of rural population and with physical factors.

That rural population density is the major predictor of agricultural productivity in Russia is not at odds with the low quality of rural labour. First, this is the only rural labour Russia has, and it works the land. Second, spatial variation in the spread of rural labour impairments (such as drinking and stealing) is incomparably less than in the sheer number of rural people — all of them, drinking and sober, thievish and law-abiding — per unit of land.

Another qualification concerns actual technological and managerial arrangements that mediate demand for labour. If new agricultural operators and/or private farmers could replace the existing collective farms, the demand for farm labour might be slashed so much that rural population densities of today would be considered appropriate and at times excessive. This, however, constitutes wishful thinking; very few Russians are eager to become private farmers, and corporate expansion into Russian agriculture is fairly limited as well. Most probably, the replacement of existing collective farms, if it takes place at all, will be slow and partial, and it will have occurred long after much of the agricultural land in today's black holes has been irreversibly abandoned.¹⁰⁵

Discussion

Russia's commercial agriculture is being downsized in a way and at a rate that have no precedent in Russia's history. Within 10–15 years all the agricultural production factors are likely to emerge diminished in scope even more, and Russia's agricultural space will resemble an archipelago. After a short reversal in the rural population decline (1991–94), the population is again falling; farms' capital stock is wearing out; and huge chunks of farmland long under cultivation are being abandoned. The growth in output that resumed in 1999¹⁰⁶ has been from an exceedingly low start because of the precipitous 1991–96 decline. More importantly, this is a highly selective growth driven by a few success stories against the backdrop of continuing decay of the overwhelming majority of production units. As commercial farming is scaled down, more and more Russian households are producing food on their own and largely for their own consumption. According to some estimates, close to 125 million Russians (out of the total population of 144 million) are working land one way or another.¹⁰⁷

In the course of my research for this article I recalled a wooden barrel model of soil fertility that was presented in the 'Foundations of Crop Farming' course at Moscow State University in the early 1970s. Each stave of the barrel symbolised a requisite nutrient, and the level of liquid inside the barrel symbolised the potential for plant growth. If one stave is shorter than the others, the liquid will inexorably leak out, and the surface of the remaining liquid will always stay level with the shortest stave. The point this model served to make was that no single nutrient, no matter how abundant,

can substitute for a deficient one. This model may be reinterpreted: if the liquid inside the barrel represents Russian agriculture's potential for market-driven modernisation, the shortest stave would be Russia's rural population, which is largely unfit for innovation. The sudden imposition of market forces left this population divided, antagonised and largely pauperised to the extreme. The market element is 'spawning a social polarisation of the kind that in the past ended in revolutions and the dispossession of the kulaks'.¹⁰⁸

To this one can reply that the same polarisation is pervading Russian society at large. Still, the social fabric of Russian cities is not nearly as fragile. After all, owning a share in a collective farm is not like owning industrial assets. The latter makes a difference in personal well-being, while the former usually does not. Also, industrial fortunes are still protected, if only through an opportunity for capital flight. There is a growing middle class in Russian cities who have a vested interest in market-driven change. They have something to lose if this change is undone. In contrast to that, most country people are proverbial Marxian proletarians who have nothing to lose but their chains. 'In abstraction, the market way may be more efficient. But its realisation requires certain institutional prerequisites, including patterns of behaviour and expectations. Without these, the market way loses legitimacy in the eyes of the people and cannot be realised'.¹⁰⁹

An authoritative dictionary offers the following interpretations of the term 'reform': 1) a change for the better, correction of evils and abuses; and 2) a movement that attempts to introduce improved social and political conditions without revolutionary change.¹¹⁰ Even if one assumes that 'change for the better' (let alone 'improved conditions') are to some extent in the eye of the beholder, the manner in which this change was introduced is patently at odds with the second of the two interpretations: in Russia, central planning arrangements, however imperfect, evaporated *abruptly* (in January 1992), and the wild market *rushed* to fill the void. It was in fact a revolutionary change. In more 'scientific' vocabulary, 'the introduction of a market economy to the Russian village left it to the mercy of elemental mechanisms of self-regulation'.¹¹¹

The case can easily be made that the average Russian peasant is facing far more of a market economy today than the average American farmer. In 2001 '49 cents of every dollar farmers earned in the United States came from the government, according to the USDA'.¹¹² 'The Farm Security and Rural Development Act signed by George W. Bush in May 2002 means that agricultural subsidies will cost almost \$200 billion over the next decade, or about \$20 billion annually'.¹¹³ For comparison, in Russia's 2004 federal budget about 31 billion rubles are assigned to support of agriculture.¹¹⁴ The American critics of the new American Farm Bill call it 'not just a step backwards from the market principles hailed by free market Republicans' but an absolute reversal'.¹¹⁵ In Russia, the nature of the problem is the opposite. If anything, the Russian agricultural producer is up against too much market, not too little. This market is crushing the Russian peasant because, one might say, he is ill-prepared for it. However, the economic viability of any agricultural entity in any country would be hard hit if it encountered change this sudden and of this magnitude. Incidentally, even the harshest critics of the American Farm Bill concede that stopping this massive and essentially socialist intervention in the agricultural market *abruptly* would be

equivalent to a train crash.¹¹⁶ A train crash is an apt metaphor, but one that is better suited to the Russian case is the sinking of the Titanic. When it happens, putting on a scientific demeanour to discuss the degree of ‘adaptation to market’ comes across as an awkward joke.¹¹⁷

What happened and continues to happen in rural Russia is hardly a reform; rather, it is a suspension of every rule of the economic game that applied before. Prior to January 1992 the name of the game was ‘central planning’ and ‘aiding the weak’. As noted above, the estimated value of budget subsidies in the late 1980s was \$60 billion a year.¹¹⁸ After January 1992 the name of the game has been ‘wild market’ and ‘survival of the fittest’. In 1991–92 financial ruin befell the Russian state, so it disengaged itself from farming completely. Now that the state treasury is getting back into shape, the state is slowly but surely returning to the agrarian scene. The measures that it takes are justifiable, just not enough. So far, these have been import quotas, state grain purchases and farm subsidies. The imposition of export tariffs to preclude exporting too much grain during a crop failure at home is also in the offing. Needless to say, all these measures are anti-market, which is what brings us to a broader question: is there any future at all for Russian agriculture in the liberal economic order that ‘market reform’ or whatever is labeled that way was supposed to create?

According to Lynch, who believes that in Russia liberal economics are set against unrelentingly illiberal geography, the answer is no. Lynch believes that Russia’s higher production costs in agriculture (compared with most other countries) despite the low cost of labour cannot be entirely attributed to the ‘Soviet legacies of inefficiency’.¹¹⁹ ‘The ... developed parts of Canada correspond to the climate of Rostov *oblast*’ or Krasnodar *krai*, in Russia’s deep south, although the Canadian climate is more humid. In this respect, economic geography favours Canada immensely over Russia. Still, it is interesting to note that the productivity of Canadian farming is roughly comparable with that of the later Soviet period (ca. 20 centners per hectare versus 70–80 centners per hectare in northwestern Europe), [and] that Canada employs (like the Soviet *sovkhoz*) industrial-scale farming as a rule’.¹²⁰ Lynch also points to Russia’s enormous size, with roughly 40% of rural villages that cannot be reached on tarmac roads,¹²¹ and costly means of transport.

Comparative analysis of the environmental conditions for agriculture that set Russia apart from much of Europe and North America used to be a popular topic of nineteenth-century Russian and European scholars such as Klyuchevsky and Hettner. Such comparisons became rare thereafter. However, in 1968 Field published his superb but rarely cited comparison of the agricultural land bases of the USSR and North America. According to Field, ‘environmental quality must be weighed heavily in assessing the relative productivity of the agricultural land resources of the Soviet Union and North America ... One must be ... cautious in attributing largely to the human factors differences in the per acre returns’.¹²² Field showed that in the USSR four-fifths of the cropland fell within the least productive thermal zone, that with less than 200 degree-months.¹²³ He also showed that in the USSR the best conditions were in the west (west Ukraine being the very best) and the worst conditions were in fact in parts of Russia. According to Field’s thermal (degree-months) and moisture (percentage of potential evapotranspiration) ratings, Moscow is equivalent to Sault Ste. Marie, Michigan, and Rostov-on-Don, in the premier agricultural region of

Russia, to Pierre, South Dakota. Both American locations are relatively marginal in the American agrarian ecumene.¹²⁴

To our knowledge, Field's analysis was never consulted by the political scientists and/or economists among the students of the Soviet Union. Writing abundantly about Soviet agricultural failures, they invariably attributed them to systemic, political economy factors. In a major 1983 American tome devoted to Soviet agriculture,¹²⁵ all conceivable aspects of it are scrutinised but one: natural environment. This is all the more surprising because in the West the man-in-the-street has always pictured Russia as an exceptionally cold country. How can one explain this clash of stereotypes? For those who (like this author) did not live in the West at the time, it is difficult to second-guess. The ideologically charged atmosphere of the Cold War may have over-emphasised political economy reasoning at the expense of something as politically neutral and eternal as natural environment.

Environmentalism is now staging a comeback, at least in Russia. After the collapse of communism, the physical constraints of Russian farming became a topic popular with Russian writers who began to revisit the nineteenth-century classics. The most discernible of today's voices is that of Leonid Milov. He draws upon the fact that in Europe, with the exception of its extreme north, winter isotherms tend to run north-south, so Kursk (latitude 52 degrees north), in the middle of Russia's Chernozem belt, is colder in winter than Helsinki (61 degrees north).¹²⁶ Milov pays special attention to the length of the period cattle must be kept stalled (seven months) as undermining the productivity of animal husbandry. He believes that Russia's historical penchant for subjecting an over-abundant land base to cultivation is in fact the reverse side of the inadequate quality of land in Russia's heartland.¹²⁷ According to Milov, Russia is the archetypal society with environmentally conditioned minimum surplus value per unit of land, which historically has brought about specific forms of socio-political organisation (such as the rural commune) and governance (despotism).

Milov's reasoning inspired Andrei Parshev, the author of *Why Russia is not America*, a book that was on the Russian bestsellers list for 52 straight weeks. In turn, Parshev inspired many others. In Russia his book has become a manifesto of anti-globalists, who are doggedly opposed to Russia's entering the WTO on the grounds that Russian firms have no chance of winning in economic competition because of environmentally-conditioned high production costs. Lynch's article took some cues from Parshev as well, as evidenced in abundant references to the book.

Some Russian critics of Parshev's isolationist views seem to have made them even more popular. Treivish was among those who set out to criticise Parshev's views from a liberal standpoint. However, having calculated weighted average temperatures for the populations of European Russia, Canada and Sweden, Treivish had to uphold the idea of Russia being the least hospitable of the three, as well as the one with the most scattered population. 'And so what about geographical determinism, and the conclusions of its unexpected proponent Parshev?',¹²⁸ asks Treivish: 'In my view, this author is correct in that basic [environmental] differences do exist and cannot be ignored. Ignoring them would equal indeterminism we cannot afford. Russia's competitiveness is indeed limited on the markets for a wide variety of popular goods where cost reduction is the name of the game'.¹²⁹ What Parshev fails to understand, according to his critic, is the fleeting nature of technological cycles. Also, 'Russia is a

great power in the area of culture and ecology, although one does not know yet how to capitalise on these qualities'.¹³⁰

This suggestive and convincing legitimization of Parshev's views, both in letter and in spirit, only proves that 'environmentalism per se [does] not possess an inherent ideological bias'¹³¹ that leads one in a preconceived direction, whether it is the enslavement of some 'inferior' civilisations or the justification of Russia's economic self-isolation from the rest of the world (as per Parshev) or, for that matter, Russia's life-long affair with despotism (as per Milov). Russian farms are destined to have higher production costs than their foreign competitors even in the best of legal and managerial worlds. A cowshed has to have thicker walls and be heated for a longer time than elsewhere; grain combine harvesters must work a larger area owing to lower yields per unit of that area; more ploughs are required and shorter growing periods apply. Yet Russia's climate and size are in fact limiting factors of Russian agriculture's market-driven modernisation, in addition to depopulation and the deep-seated attitudes of its rural villagers.

It is therefore no accident that Russia's planned accession to the WTO is debated so much. From time to time, tensions between the Ministry of Agriculture and the Ministry of Economic Development and Trade surface in the Russian newscasts. Whereas the former is in favour of food protectionism in the form of tariffs, subsidies and quotas, the latter is reportedly ready to sacrifice agriculture during the WTO accession talks.¹³² One of the sticking points is the allowed level of state subsidies. Whereas the WTO insists on securing the 1999–2002 level, which is below \$1 billion, the Russian negotiators insist on \$13.8 billion or, according to some newsmakers, on just \$9 billion.¹³³ Recall that the estimated value of budget subsidies in the late 1980s was \$60 billion.

At the time of writing, the Russia–WTO accession talks are stalled owing to the European Union's demand that Russia raise domestic prices on natural gas and Russia's unwillingness to comply. Though the announced reason for the setback has no immediate connection to agriculture, Russia's ineffectual agrarian lobbyists should hold their breath. Russia's potential accession to the WTO may finish off what little remains of Russia's mechanised commercial agriculture, although some grain producers in the south and some suburban dairy farms will probably survive. And so will some sceptics' nagging doubts as to whether or not 'adaptation to the market' came at the right price.

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1 The research leading to this article was funded by the National Science Foundation (Award BCS-0134109).

2 Sergei Pletnev, 'Rossiiskogo krest'yanina dushit ruka Adama Smita', www.strana.ru, 24 June 2003.

3 In contrast to collective farms, all of which file identically designed statistical reports annually, household farms are subject to sample surveys. The guidelines for designing a regional sample require selecting a) 25% of the rural *raiony*, b) 15% of rural administrations of the selected *raiony*, c) 10% of rural villages under each selected administration, and d) typical household farms within selected villages (*Sel'skokhozyaistvennaya Deyatel'nost' Khozyaistv Naseleniya v Rossii* (Moscow, Goskomstat, 1999), p. 12). As far as I know, there is no rigorous control and/or supervision to

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- 104 We used factor scores composed of grain and milk yields and the output's monetary value as well — all of them were closely correlated with each other.
- 105 Irreversibility most probably pertains to land abandonment in most of the Non-Chernozem Zone, especially its northern part where arable land is interspersed with forest tracts. In such areas a field left idle for no more than three consecutive years is choked with birch and aspen trees.
- 106 To be exact, growth resumed in 1997. However, 1998 saw a severe drought (on top of the notorious financial debacle) and agricultural output declined yet again. Hitherto uninterrupted growth commenced in 1999.
- 107 In Russia there are 16 million rural household farms, 14 million urban residents own a plot in the so-called 'collective orchards' and 5 million urban residents own a plot in 'collective vegetable

- gardens'. Also, there are 2 million dacha owners. The total is 37 million families or more than 100 million people. Additionally, 20 million statistical urban residents (small and medium town dwellers) live permanently in cottages with vegetable gardens attached to them (Nefedova, Sel'skaya Rossiya na Pereput'e, p. 184).
- 108 Efendiev & Bolotina, 'Sovremennoe rossiiskoe selo', p. 21.
- 109 *Ibid.*, p. 38.
- 110 *American Heritage Dictionary of the English Language* (Boston, New York and London, Houghton Mifflin Company, 1999), p. 1038.
- 111 Efendiev & Bolotina, 'Sovremennoe rossiiskoe selo', p. 18.
- 112 Michael Flaherty, 'Family Farm Welfare: A Social and Economic Tragedy', *Wisconsin Interest*, Fall 2002, p. 15.
- 113 Robert Samuelson, 'A Sad Primer in Hypocrisy', *Newsweek*, 11 February 2002, p. 49.
- 114 Gordeev, 'Est' veshchi bole printsipial'nye, chem byudzhetskaya politika'.
- 115 Flaherty, 'Family Farm Welfare', p. 15
- 116 *Ibid.*, p. 19.
- 117 A real joke reflecting a situation like this circulated among urban intellectuals in 1970s Russia. An old woman approaches a rabbi and complains that hens are dying in her hen coop one by one. 'Take a twig and draw a triangle in front of your hen coop', advises the rabbi. The old woman complied but came by again in a couple of days. 'Rabbi, hens are still dying', she said. 'Take a twig and draw a circle in front of your hen coop', was rabbi's advice this time. Upon her third visit, the rabbi advised her to draw a trapezium. Soon afterwards, the woman came yet again in tears. 'That's it', she said, 'my hens have all died'. 'Oh, what a pity', replied the rabbi, 'I've still got so many ideas'.
- 118 Dankvert, 'U nas seichas rynek samyi svobodnyi'.
- 119 Allen C. Lynch, 'Roots of Russia's Economic Dilemmas: Liberal Economics and Illiberal Geography', *Europe – Asia Studies*, 54, 1, 2002, p. 39.
- 120 *Ibid.*, p. 40
- 121 *Ibid.*, p. 34.
- 122 N. C. Field, 'Environmental Quality and Land Productivity: A Comparison of the Agricultural Land Base of the USSR and North America', *Canadian Geographer*, XII, 1, 1968, p. 11.
- 123 *Ibid.*, p. 9.
- 124 *Ibid.*, p. 8.
- 125 R. C. Stuart (ed), *The Soviet Rural Economy* (Totowa, NJ, Rowman and Allanheld, 1983).
- 126 L. V. Milov, *Velikorusskii pakhar' i osobennosti rossiiskogo istoricheskogo protsessa* (Moscow, Rosspen, 1998), p. 8.
- 127 *Ibid.*, p. 22.
- 128 A. I. Treivish, 'Ogranicheniya v razvitii rossii: novyi geodeterminizm?', *Mir Rossii: Sotsiologiya, Etnologiya*, XI, 3, 2002, pp. 62–73.
- 129 *Ibid.*
- 130 *Ibid.*
- 131 Mark Bassin, 'Geographical Determinism in Fin-de-siecle Marxism: Georgii Plekhanov and the Environmental Basis of Russian History', *Annals of the Association of American Geographers*, 82, 1, 1993, pp. 3–22.
- 132 'Eda v obmen na reputatsiyu', *Profil*, 20 October 2003; accessed through <http://www.agronews.ru/ObzorID=675>
- 133 *Ibid.*