

# Outcomes of Agrarian Reform in Russia

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## 1 Introduction

How to assess the outcomes and effects of agrarian reform in the Russian Federation? This question has held the attention of agricultural economists since the early 1990s. The debates predate the start of reforms, but they became particularly acute during the first years of reform, and continue to rage to this very day.

The Russian literature often paints a negative view of reform outcomes. This opinion is vigorously upheld by Shut'kov (2011) and by Miloserdov and Miloserdov (2012), who mainly examine time series of agricultural output, areas of used (and unused) agricultural land, number of tractors, combine harvesters and other farm machinery, and application of fertilisers. Comparing the pre-reform and post-reform series, the authors reach an unambiguous conclusion that the reform has negatively affected the development of agriculture: production declined, a large proportion of agricultural land was abandoned, cropped areas decreased, livestock headcount shrank, the number of machinery reduced and less fertiliser was applied to crops.

These conclusions regarding agriculture's decline, based as they are on statistical data, are indisputable. However, such analysis is strictly one-sided: it ignores the causes that have led to the decline in production and resource use. More precisely, the reform is regarded as the only factor that can be blamed for these

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negative outcomes. The analysis ignores efficiency indicators, although efficiency improvement was one of the main aims of reform.

Serova (2010) also analysed the outcomes of reform, focusing in particular on the reasons for production decline in the early years of reform (price disparity, fall in family incomes and the resulting fall in food demand, low competitiveness of domestic producers in the local market, etc.). Serova also attempted to analyse the efficiency indicators before and after reform, but only crop and livestock yields were examined as measures of agricultural efficiency.

In this chapter, we assess the reform outcomes primarily through the lens of efficiency, although we also consider absolute levels of resources and outputs. The agrarian reform in Russia in the 1990s was a huge endeavour that radically changed property rights and economic mechanisms, leading to multi-faceted outcomes. The country essentially shifted to an entirely new agrarian system. The process affected millions of people. Everybody gained something or lost something through the reform. The reform outcomes are contradictory. On the one hand, the reform has led to huge increases in yields, productivity and efficiency that agricultural economists in the pre-reform era could have hardly imagined possible. On the other hand, agriculture in many regions contracted dramatically and abandonment became widespread.

In this chapter, we consider 12 major outcomes of reform (Sects. 2–13). The evaluations are not single-valued: each of the outcomes receives both a positive and a negative evaluation, which is already clear from the wording we use for most outcomes.

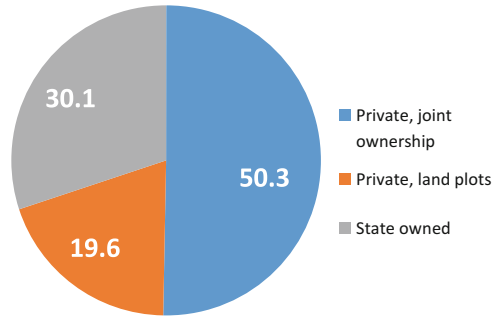
## **2 Land Privatisation, High Transaction Costs, Latifundialisation**

Privatisation of agricultural land was the key element of Yeltsin's agrarian reform in the early 1990s. Land privatisation was carried out according to the rules set in the Law of Land Reform (1990) and the Land Code (1991). Yeltsin's reform transferred 70 % of agricultural land to private ownership, and only 30 % remained state owned (down from 100 % in the Soviet period) (Fig. 1).

The bulk of privatised land was (and still remains after 25 years) in joint shared ownership; that is, peasants did not receive demarcated land plots. Many beneficiaries of the privatisation process were pensioners, rural teachers and doctors, and other individuals who could not farm independently. It was thought at that point that low transaction costs would allow land to be transferred from these passive land-owners to efficient users. Yet, in reality, transaction costs often exceed the market price of land.

The Yeltsin agrarian reform created landless peasants, large latifundia and agroholdings, and spurred oligarchic development of Russia's agriculture. In the early 2000s, large investors exploited legal options for land concentration and based their

**Fig. 1** Ownership structure of agricultural land in use by agricultural producers as of 1 January 2013 (%).  
Source: Rosreestr (2013)



farms primarily on hired labour, although these trends contradicted the established mode of agricultural development in market economies. The land-concentration option clearly set the Yeltsin reform apart from the Stolypin agrarian reform of the early 1900s, which prohibited concentration of more than 12–18 ha<sup>1</sup> within one administrative district in the hands of one owner (either by purchase or by free gifts). The Stolypin reform aimed to create a large ‘middle class’ (to use modern terminology), and this required prohibition of land concentration in the hands of a small number of large estate owners. This restriction on landownership in no way limited the allowed size of a single farm: farmers could increase their holdings by leasing land up to the limit of their ‘managerial’ capacity.

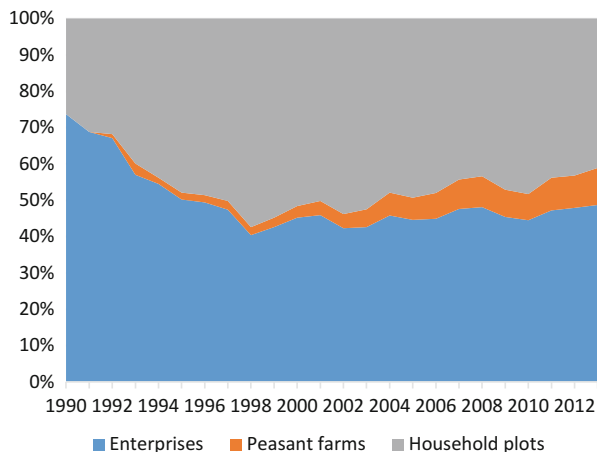
### 3 Development of Heterogeneous (Multi-form) Agriculture

Yeltsin’s reform produced a heterogeneous agriculture with three categories of producers: corporate farms of various organisational forms (‘agricultural enterprises’), peasant farms and individual entrepreneurships, and household plots. A different farming structure emerged in each province.

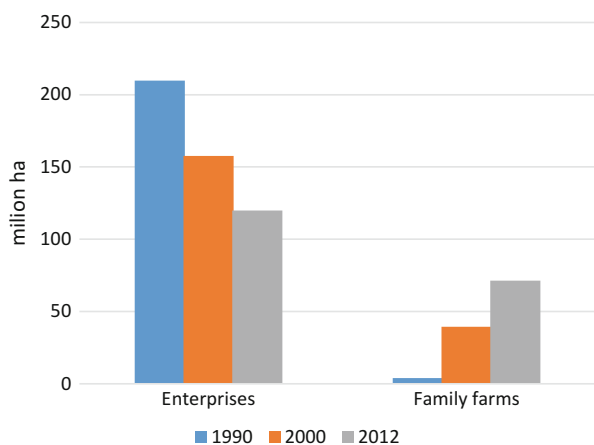
Prior to the 1990 reform, 74 % of gross agricultural output (GAO) was produced in large agricultural enterprises (collective farms or *kolkhozes*, state farms or *sovkhozes*, and agro-firms). Household plots produced the remaining 26 % of GAO (there were no peasant farms at that time). Russia’s agrarian structure radically changed during the reform. The share of agricultural enterprises in GAO dropped to 40 % (1998), subsequently rising to 49 % (2013). Family farms (this category aggregates peasant farms, individual entrepreneurships and household plots) produced 51 % of GAO in 2013 and achieved an even higher share of gross value added (GVA) (60 % in 2011), as they use less purchased inputs than agricultural enterprises (National Accounts 2012). Peasant farms began to emerge in the

<sup>1</sup>This is the size of six ‘upper per capita allotments’ (*vyshii dushevoi nadel* in Russian) as determined in the 1861 reform. The exact area of six allotments varied across provinces. See Stolypin reform (2015).

**Fig. 2** Structure of GAO by type of producer, 1990–2013. Source: authors' calculations from Rosstat (2015)



**Fig. 3** Use of agricultural land by different types of producers, 1990–2012. Source: Rosreestr (2013)



early 1990s and gradually grew and developed, reaching 10% of GAO in 2013 (Fig. 2).

Changes in GAO were the result of a significant redistribution of agricultural land between different categories of producers (Fig. 3). Agricultural land in enterprises decreased by 90 million ha between 1990 and 2012 (a drop of more than 40% from the 1990 holdings), while family farms gained nearly 70 million ha. The remaining 20 million ha, or more than 10% of agricultural land in all farms in 1990, is no longer used for agricultural production.

In the pre-reform era, the agrarian structure was virtually the same in all regions across Russia. The reform has led to a sharp differentiation of regions by agrarian structure. Some regions preserved a corporate structure with predominance of agricultural enterprises (>50% of GAO). On the other hand, many regions markedly reduced the share of agricultural enterprises in GAO, while family farms (household plots and peasant farms combined) began to contribute more than

**Table 1** Grouping of Russia's regions by farming structure, 2000 and 2010 (%)

Indicators	Russia total	Farming structure		
		Corporate	Mixed	Family
2000				
Share of 77 regions	100	23.4	54.5	22.1
GAO in farms of all types (total RUB 742 billion in current roubles)	100	35.3	54.5	10.2
Structure of GAO by farm type				
Enterprises	45.2	56.1	42.3	23.2
Family farms	54.8	43.9	57.7	76.8
2010				
Share of 78 regions	100	29.5	42.3	28.2
GAO in farms of all types (total RUB 2 618 billion in current roubles)	100	36.1	44.2	19.7
Structure of GAO by farm type				
Enterprises	44.5	60.5	41.9	21.1
Family farms	55.5	39.5	58.1	78.9

Source: Uzun et al. (2014), based on Rosstat (2015)

70 % of GAO; that is, individual or family agriculture emerged to the forefront. In the remaining regions, we observe a mixed farming structure with agricultural enterprises producing between 30 % and 50 % of GAO, while family farms produce between 50 % and 70 % of GAO.

In 2000, the corporate farming structure dominated 23 % of Russia's regions, and 22 % of the regions were characterised by a family farming structure (Table 1). Thus, 55 % of the regions had a mixed farming structure in 2000. By 2010, the share of regions with a mixed farming structure had dropped to 42 %, while both corporate and family farming spread to more regions (30 % of regions with corporate farming and 28 % of regions with family farming). In regions with a corporate farming structure, about 60 % of GAO is produced by agricultural enterprises; in regions with a family farming structure, about 80 % is produced by peasant farms and household plots (Table 1).

Family farming is observed mainly in eastern and northern regions of Russia, and also in non-chernozem regions suffering from depopulation. Corporate farming, on the other hand, is observed in regions where the natural and economic conditions are the best (Belgorod, Lipetsk, Moscow and Leningrad oblasts, Krasnodar and Stavropol' territories).

Family farming also dominates in ethnic republics and is strongly influenced by regional agrarian policies. In Astrakhan, Saratov and Samara oblasts as well as in the ethnic republics of Tatarstan and Bashkirostan, regional policies support small business and it flourishes. In Moscow and Leningrad oblasts, small business is not supported by regional authorities and its share in GAO is very low.

In parallel with these changes, we observe continuous concentration of production in very large agricultural enterprises, agro-firms and agro-holdings.

Concentration also occurs in peasant farms. The average area of a peasant farm increased from about 40 ha in the early 1990s to about 100 ha in 2010. In 2006, there were 285,000 peasant farms and individual entrepreneurs in Russia and the 5000 largest among these accounted for almost half the sales revenue (Uzun et al. 2010).

#### **4 Adaptation of Agricultural Producers to Market Conditions**

Agricultural producers have learned to respond to market signals and adjust their production structure accordingly. The bulk of production now is in farms that show a profit. Farms of different types and in different sectors react differently to market signals. Farms have become much more specialised, and there has been a noticeable decrease in the number of more traditional farms that produce a wide variety of commodities. Unprofitable producers eventually drop out.

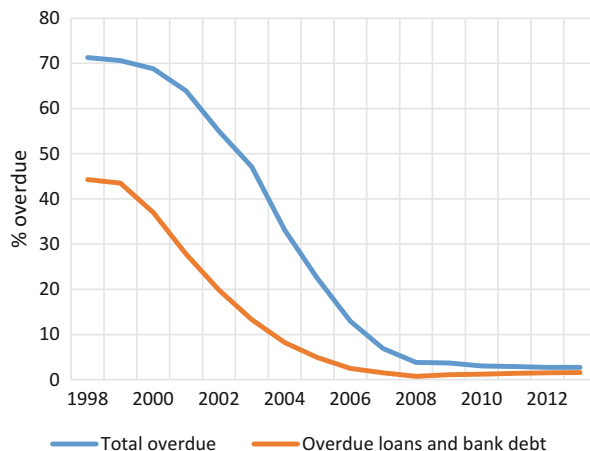
The location of agricultural production has also changed dramatically. Instead of farm location oriented towards regional self-sufficiency, we begin to observe location based on economic efficiency. The production of each commodity has shifted to regions where it is most profitable.

#### **5 Improved Financial Stability Versus Increased Bankruptcies**

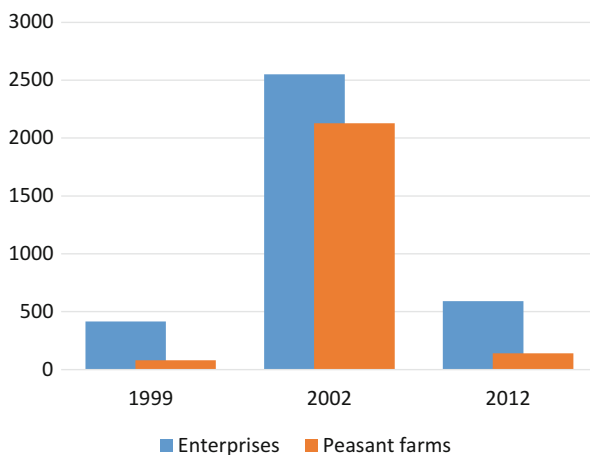
The reform has improved the financial stability of agricultural producers: the proportion of overdue debt in agricultural enterprises dropped from 71 % in 1998 to less than 3 % in 2013. The Law on Financial Rehabilitation (2002) has had a decisive influence on the financial health of Russia's agriculture: although the total debt of agricultural enterprises (in current prices) markedly increased between 1998 and 2013, overdue debt has been systematically decreasing since 2002 in both absolute and relative terms. In absolute terms, agricultural debt peaked in 2002 at RUB 177.1 billion (in current roubles). By 2013 it had shrunk to RUB 43 billion, that is, to less than one-quarter of the 2001 level (the decrease in constant prices is even more impressive). Figure 4 shows that the share of overdue loans and bank debt in agricultural enterprises dropped from 44 % in 1998 to less than 2 % in 2013. The reduction of overdue debt was facilitated by the advent of an attractive debt-restructuring mechanism, imposition of harder budget constraints and a stricter evaluation of creditworthiness.

The proportions of profitable and loss-making producers provide another indicator of financial stability. In 1997–1998 more than 80 % of agricultural enterprises were unprofitable, whereas by 2013 the number of loss-making enterprises had

**Fig. 4** Percentage of overdue debt in agricultural enterprises, 1998–2013. Source: Rosstat (2015), Statistical Yearbook (2013), Agricultural Statistics (2013)



**Fig. 5** Number of bankruptcies filed by agricultural producers, 1999–2012. Source: Arbitration Court (various years)



dropped to 22 %. In 1997–1998 loss-making producers accounted for a little over 60 % of total revenue in agriculture, whereas by 2008 this proportion had dropped to 9 %. Both indicators provide evidence of improved financial health.

The financial discipline has improved not only among agricultural producers, but also among their business partners: overdue accounts receivable in agricultural enterprises also decreased (from 57 % in 1998 to less than 4 % in 2013).

Financial rehabilitation did not proceed painlessly. A substantial number of enterprises and peasant farms went bankrupt in the process. Figure 5 shows that the number of bankruptcies was particularly high in the first years of the financial rehabilitation programme (around 2002). In recent years, the frequency of bankruptcies has sharply decreased. The absolute number of bankruptcies among peasant farms is smaller than among enterprises. Since there are more than 200,000 peasant farms and fewer than 20,000 enterprises, the gap in relative terms is much

greater: the share of bankruptcies among peasant farms is much smaller than among agricultural enterprises.

## 6 Improved Labour Productivity Versus Reduced Employment

The transition to a market economy encouraged efficient use of labour resources. In the early years of the reform (up to 1995), the average number of employed in agriculture was increasing. In the subsequent period it contracted markedly, dropping from 9.7 million in 1990 to 6.5 million in 2012. The productivity of agricultural labour decreased until 1998, and then started increasing. By 2012 it had reached 127 % of the level of productivity in 1990 (Table 2).

GAO in agricultural enterprises had dropped by 1998 to 35 % of the 1990 level (in constant prices). In subsequent years agricultural production almost doubled, but even so by 2012 it had reached only 65 % of the 1990 level. The number of employed in agricultural enterprises contracted by an astonishing 82 % between 1990 and 2012. In their attempt to remain competitive in the new market economy, agricultural enterprises kept shedding surplus labour. Up to 1998, production

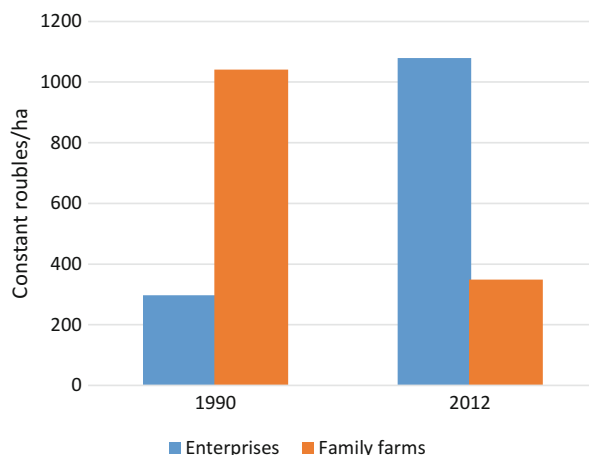
**Table 2** GAO, number of employed, and labour productivity in agriculture 1990–2012

	GAO in constant 2012 prices (billion RUB)	GAO index (1990=100)	Number of employed in agriculture (million) <sup>a</sup>	GAO per worker (thousand RUB)	GAO per worker (1990=100)
<b>All farms</b>					
1990	3 952.5	100.0	9.7	406	100.0
1998	2 177.1	55.1	8.7	250	61.4
2005	2 690.5	68.1	7.4	365	89.7
2012	3 340.5	84.5	6.5	517	127.1
<b>Agricultural enterprises</b>					
1990	2 467.1	100.0	8.3	297	100.0
1998	866.5	35.1	5.3	163	55.0
2005	1 142.3	46.3	2.5	457	153.7
2012	1 600.9	64.9	1.5	1 079	363.0
<b>Family farms</b>					
1990	1 485.4	100.0	1.4	1 041	100.0
1998	1 310.6	88.2	3.4	383	36.8
2005	1 548.2	104.2	4.9	317	30.5
2012	1 739.6	117.1	5.0	349	33.5

<sup>a</sup>Number of employed in agricultural enterprises is given for large and middle-sized farms (up to 2005, data from Statistical Yearbooks (1993, 2013); for 2012, data from the consolidated annual reports of agricultural enterprises). Number of employed in family farms is the number of people engaged in commercial production (including peasant farms, household plots and small agricultural enterprises)



**Fig. 6** Comparison of agricultural labour productivity in enterprises and family farms, 1990 and 2012 (constant 2012 roubles per worker). Source: authors' calculations from Rosstat (2015)



volumes (GAO in constant prices) decreased faster than the number of employed; correspondingly, by 1998 the productivity of labour had fallen to 55 % of the productivity in 1990. Starting in 1998, production volumes in enterprises increased while the labour force continued to contract. Increasing production and decreasing labour combined to produce a robust increase in labour productivity, which had risen by 2012 to 363 % of the 1990 productivity.

In family farms, GAO increased by 17 % between 1990 and 2012, while the number of employed increased from 1.4 million to 5 million (i.e. an increase by a factor of 3.6). As a result, GAO per worker in family farms decreased to one-third of the 1990 level. Rapid growth of the labour force combined with relatively slow growth of agricultural production in family farms led to a stabilisation of labour productivity in this sector at 30–33 % of the 1990 productivity. Comparing the performance of enterprises and family farms in 1990 and 2012, we see that, in absolute figures, GAO per worker in family farms was a factor of 3.7 higher than in enterprises in 1990 and a factor of 3 lower than in enterprises in 2012 (Fig. 6).

Data on direct labour inputs per unit output also reveal robust productivity increases in agricultural enterprises in recent years. For all major agricultural products, except beef, direct labour inputs in 2013 were substantially less than in 1990. For sugar beet and pork weight gains, direct labour inputs in 2013 were a factor of 8–10 lower than in 1990; for potatoes, other vegetables and poultry weight gains, direct labour inputs in 2013 were a factor of 3.3–4.5 lower than in 1990. Labour productivity for the production of milk, grain, sunflowers and eggs in agricultural enterprises increased by a factor of 1.6–2 during the same period.

## 7 Improved Land Productivity Versus Contraction of Land Use

The last decade has witnessed a steady growth of agricultural production in Russia, with GAO in constant prices increasing by 39% between 2000 and 2012. This growth, however, does not encompass the entire country: it is concentrated only in some farms, districts and provinces. The main share of growth in commercial output is accounted for by a relatively small group of the largest farms. Russia's agriculture no longer exhibits widespread universal coverage: it flourishes in discrete foci across the country. According to the 2006 Agricultural Census, 94 million ha (43% of all agricultural land in Russia) is abandoned. These unused areas are primarily in regions with a low bio-climatic potential and depopulated villages. They are basically registered to defunct agricultural enterprises and inactive family farms. They are no longer used because of unacceptably low returns, as well as administrative difficulties with demarcation and titling.

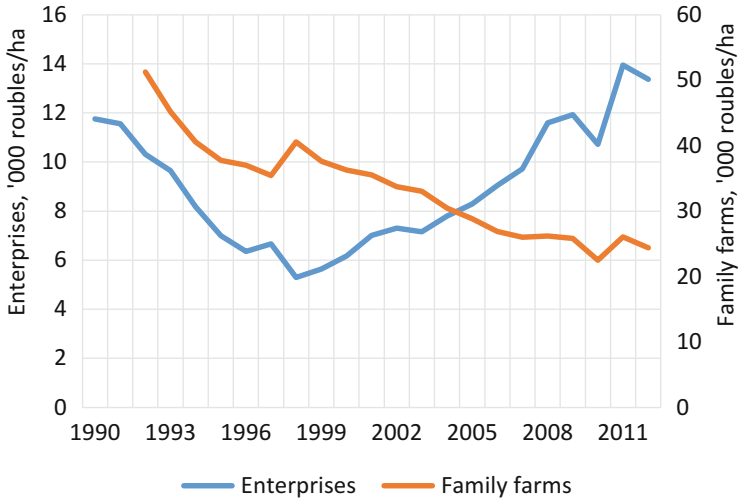
The productivity of agricultural land aggregated over all farm types was falling between 1990 and 1998. Then came a turnaround and land productivity in all farms began to increase after 1998 (Table 3). This process, however, followed different trends in agricultural enterprises and in family farms. In agricultural enterprises, the contraction of agricultural land was accompanied by an increase in GAO, resulting in increasing land productivity: the return from land in 2012 (in constant roubles per hectare) was more than double the return in 1998, and by 2011–2012 it had exceeded the pre-reform level (Table 3, Fig. 7). In family farms, on the other hand, the efficiency of land use rapidly dropped in the early years of reform, as GAO could not catch up with the rapid expansion of family holdings (in both household plots and peasant farms). It is only in recent years that the land productivity of family farms has stabilised (Table 3, Fig. 7).

Despite the different trends in the returns from land, family farms use land much more efficiently than agricultural enterprises. Over the entire period 1990–2012, the land productivity of family farms was consistently higher than that of agricultural enterprises, and in recent years the production of family farms per hectare was double that in agricultural enterprises (Table 3).

**Table 3** Productivity of land by farm type, 1990–2012

Year	GAO in constant 2012 prices per ha (RUB/ha)		
	All farms	Enterprises	Family farms
1990	18,487	11,759	371,351
1995	12,628	6997	37,733
1998	11,119	5300	40,576
2000	12,182	6166	36,248
2005	14,035	8284	28,830
2010	14,952	10,718	22,476
2012	17,480	13,363	24,398

Source: authors' calculations from Rosstat (2015) and Rosreestr (2013)



**Fig. 7** Land productivity of agricultural enterprises and family farms, 1990–2012 (in thousands constant 2012 roubles per hectare). Source: authors’ calculations from Rosstat (2015) and Rosreestr (2013)

The productivity gap is only partially attributable to the better land quality in family farms. Family farms produce more intensive crops (fruits, vegetables, potatoes) and keep more animals per hectare of land. The calculated productivity is also biased upwards because rural residents actually use some of the land registered to enterprises, without any formal contracts, and also have access to animal feed, which is distributed in kind as lease payments for land shares leased by the enterprises.

## 8 Increasing Crop Yields Versus Contraction of Sown Area

Direct evidence of increasing land productivity is provided by the changes in crop yields over time. The yields of all major crops in 2013 were substantially higher than in 1990, the increase ranging from a low of 12 % for grain and legumes to 180 % for fruit orchards (Table 4). The yields continue to fluctuate over time, as is evident from the fairly high coefficients of variation in Table 4 (last row).

**Table 4** Crop yields, 1990–2012 (all farms, 100 kg per harvested hectare)

Year	Grain and legumes	Sugar beet (industrial)	Sunflower	Soy	Potatoes	Other vegetables (open ground)	Fruit orchards
1990	19.5	240.1	13.7	11.1	104.2	166.6	27.5
1995	13.1	188.3	10.6	7.5	117.7	147.8	23.5
2000	15.6	188.3	9.0	10.1	104.7	143.3	35.1
2005	18.5	282.3	11.9	10.5	123.8	170.0	40.2
2010	18.3	240.7	9.6	11.8	100.2	180.3	41.5
2013	21.9	431.8	15.6	13.8	144.6	213.9	77.1
2013/1990 (%)	112.3	179.8	113.9	124.3	138.8	128.4	280.4
Coefficient of variation	16.2	33.9	19.1	19.2	13.4	14.9	35.7

Source: Rosstat (2015)

**Table 5** Livestock yields in all farms, 1990–2013

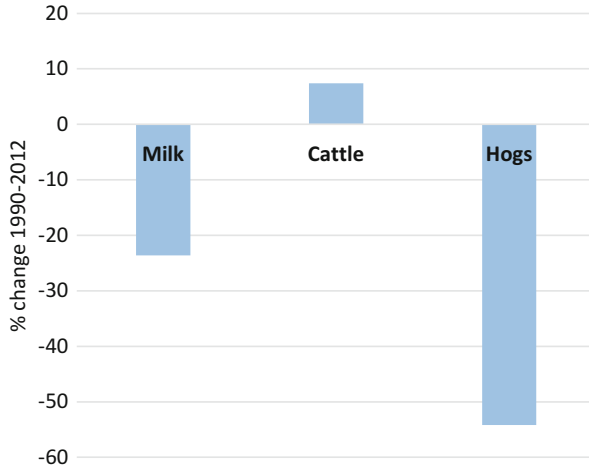
Year	Cattle weight gain (kg/head/year)	Hog weight gain (kg/head/year)	Broiler weight gain (g/head/day)	Milk yield (kg/cow/year)	Wool yield (kg/sheep/year)	Laying capacity in enterprises (eggs/layer/year)
1990	119	91	7.5	2731	3.9	236
1995	123	82	5.6	2153	2.9	212
2000	128	100	6.2	2502	3.1	264
2005	149	114	10.6	3176	3.0	301
2010	155	135	17.4	3776	2.6	307
2013	150	147	21.3	3893	2.4	305
2013/1990 (%)	126.1	161.5	284.0	142.5	61.5	129.2

Source: Rosstat (2015)

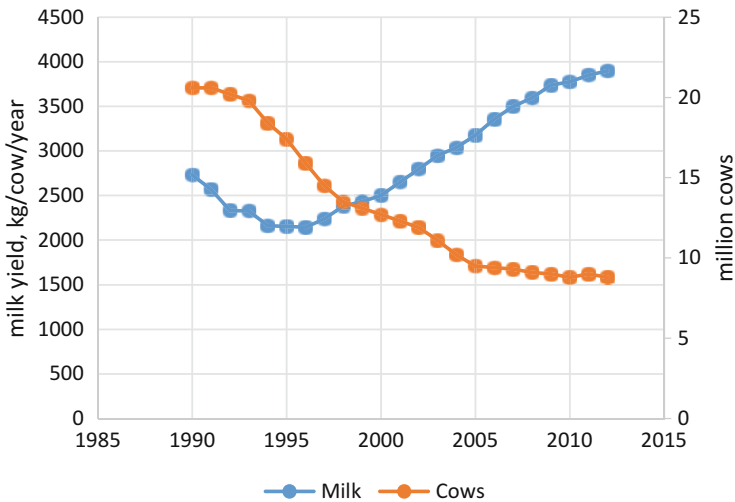
## 9 Increasing Livestock Yields Versus Contraction of Animal Headcount

Productivity increases are observed during the reform years for all animal and poultry species. Table 5 presents the changes in livestock productivity between 1990 and 2013. In contrast to crop yields, livestock yields do not fluctuate much from year to year. The time series show an initial decrease in the early years of reform, followed by a turnaround in 1996–1998 and rapid growth in recent years (except for wool yields). Milk yields in 2013 had reached 143 % of the 1990 level, whereas broiler weight gains had nearly trebled by 2013 (Table 5).

Direct evidence of livestock efficiency improvements is provided by the reduction of feed consumption per unit output between 1990 and 2012 (Fig. 8). Feed use



**Fig. 8** Change in feed utilisation in feed units per kg of livestock production, 1990–2012. Source: consolidated annual reports of agricultural enterprises



**Fig. 9** Increasing milk yields and decreasing cow headcount, 1990–2012. Source: Rosstat (2015)

for hogs dropped from 8.3 kg of feed units per kilogram of weight gain in 1990 to less than half in 2012 (3.8 kg of feed units per kilogram of weight gain). Feed use per kilogram of milk decreased by nearly 25%. Only beef production continued to use the same high levels of feed per kilogram of weight gain as in Soviet times.

Livestock productivity improvements and increasing feed utilisation efficiency were accompanied by a substantial reduction of the animal and poultry inventories. Figure 9 shows how the rapid increase in milk yields (after 1996) went hand in hand

with a steep decrease in the number of cows, which dropped by 60 % between 1990 and 2012. The cattle herd shrank to almost one-third in the same period, the number of sheep also dropped by 60 % and the number of pigs halved. The sheep, hog and poultry inventories appear to have bottomed out and begun increasing after 2002–2004; the cattle herd, on the other hand, continues its decline, with no clear end in sight.

## 10 Higher Input Efficiency Versus Lower Input Use

In the pre-reform years, Russia's agricultural producers purchased inputs at prices that were fixed by the state below world market prices. Transition from a planned to a market economy led to substantial increases in input prices, which rose at a faster rate than the prices of agricultural commodities. To survive, farms had to increase the cost-efficiency of input use and to achieve higher returns per unit of inputs.

Non-uniform input-price increases led to a substantial change of the cost structure in agricultural enterprises. Thus, the share of fuel and oil in crop production increased from 4.7 % in 1990 to 13.3 % in 2012 and in livestock production from 1.8 % to 3.5 % (Table 6). The share of spare parts, purchased services and electric power also increased.

The increase of input prices was basically offset by reducing the share of labour costs and depreciation expenses. In many farms, however, even the reduced depreciation deductions could not be used for fixed-asset renewal; they went to cover the losses in unprofitable enterprises. Inability to renew the asset base has led to a loss of previously accumulated productive potential.

Agricultural enterprises did not immediately realise the urgent need for strict cost-efficiency. In the early years of reform we even observe an increase in power consumption, which more than doubled per RUB 100 of GAO between 1990 and

**Table 6** Cost structure in agricultural enterprises (%)

Cost components	Crops		Livestock	
	1990	2012	1990	2012
Total costs	100	100	100	100
Labour (including social contributions)	28.1	18.1	28	16.3
Seeds and seedlings	17.6	12.6	0.0	0.0
Feed	0.0	0.0	48.6	50.5
Fertilisers	9.9	10.8	0.0	0.0
Electric power	0.7	1.5	1.1	3.0
Fuel	4.7	13.3	1.8	3.5
Spare parts and other materials	3.7	7.8	2.4	3.0
Services from external suppliers	6.5	9.8	3.3	8.4
Depreciation	14.5	10.7	9.3	7.7
Other costs	14.5	15.4	5.5	7.5

Source: consolidated annual reports of agricultural enterprises

1996. By 2012, power costs had been sharply reduced, both in absolute terms (to 25 % of the 1990 level) and per RUB 100 of GAO (to 40 % of the 1990 level).

## 11 Increase of State Support Versus Reduced Returns to State Support<sup>2</sup>

Total support to agriculture is composed of three components: support to agricultural producers (Producer Support Estimate—PSE), general support to the sector through government funding of infrastructure and services (such as agricultural extension, research, sanitary and phytosanitary inspection, and other services), and budget support to consumers (through food price measures). Table 7 shows the total agricultural support (in US dollars) in Russia, the European Union (EU), and the USA over time (1995–2010).

Nominal support of Russia's agriculture (in US dollars) increased by a factor of nine between 2000 and 2010. The level of total support measured as a percentage of GDP ranged between 0.8 % and 1.4 %. On the other hand, the share of total support as a percentage of agricultural GVA increased from 11.8 % in 2000 to 33.8 % in 2010. In 2010, the level of support as a percentage of GDP was substantially lower in the EU and USA than in Russia, whereas the level of support measured as a percentage of agricultural GVA was substantially higher in the EU and the USA (Fig. 10).

In Russia, agricultural support policies give clear preferences to producer support, which accounted for almost 85 % of total support in 2010. The remainder was channelled to general services support. There has been virtually no consumer support in Russia since 1995, although during the Soviet era consumers enjoyed generous budget transfers. At that time, consumer support accounted for 20–25 % of total budget support to agriculture (RUB 30–50 billion annually between 1986 and 1990).

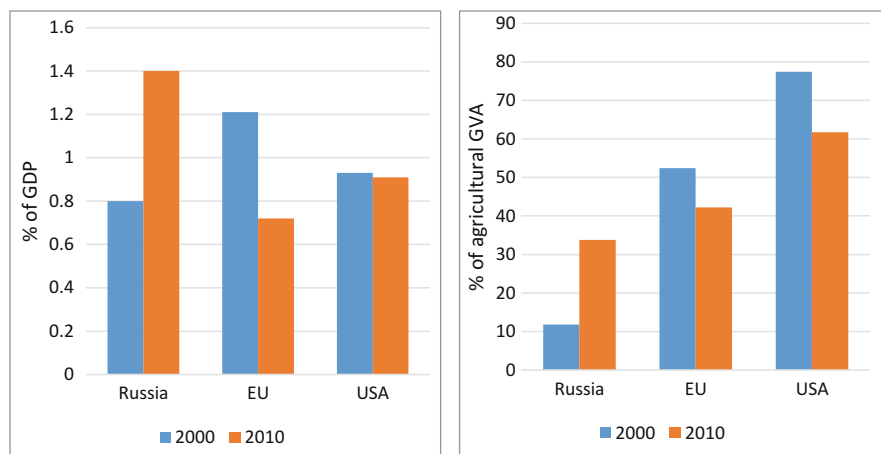
The support structure in the USA in 2010 was totally different. More than 50 % of total support went to general services support and less than 20 % to producer support. In the EU, on the other hand, the support structure was similar to that in

**Table 7** Total agricultural support in different regions, 1995–2010 (billion US dollars)

Region	1995	2000	2005	2010
Russia	6.5	2	7.8	18.3
EU	137.8	97.5	144.3	116.2
USA	64.9	92.4	101	133.4

Source: OECD (2011)

<sup>2</sup>The analysis in this section is based on data from OECD (Organisation for Economic and Cultural Development) for corresponding years (OECD 2011). For more details, see Uzun (2012a, b).



**Fig. 10** Total agricultural support in Russia, the EU and the USA in percentage of GDP (*left panel*) and percentage of agricultural GVA (*right panel*), 2000 and 2010. Source: OECD (2011)

**Table 8** Sources of total agricultural support (2010)

Source	Russia	EU	USA
Transfers from consumers (EUR billion)	9.5	11.6	2.7
% of total support	68.7	13.2	2
Budget transfers (EUR billion)	4.3	76.2	130.8
% of GDP	0.44	0.62	0.89

Source: OECD (2011)

Russia: the bulk of support went to producers (87%), general services support received 12% of the total and consumer support was just 1%.

The structure of support sources varies depending on agricultural policies. In Russia, consumers of agricultural products were the main source of total support since 2005. Transfers from consumers through price mechanisms represent 69% of total support and budget transfers contributed only 31% (Table 8). In contrast to Russia, the share of budget transfers in total support is 98% in the USA and 87% in the EU.

The high share of budget transfers in the total support in the USA and the EU indicates that the burden falls on the high-income segments of the population, reducing the share of food expenditure for low-income families. The taxes paid by high-income segments and corporations (even with flat tax rates) generally exceed in total the payments from the low-income segments. Directing part of tax income to agricultural support, the state lowers food costs and thus reduces the share of food expenditure in the family budget, mainly for the poor families, where the share of food expenditure is highest.



Total agricultural support in Russia increased much faster than GAO between 2000 and 2010. Total support rose ten-fold, whereas GAO increased by a factor of 3.5 (in current roubles). As a result, the efficiency of support decreased from RUB 7.4 of GAO per rouble of total support in 2000 to RUB 2.6 of GAO per rouble of total support in 2010. Economists and government officials in Russia focus primarily on the relatively small budget component of total support to assess the effectiveness of government policies. The much larger transfers from consumers—the lion's share of total agricultural support—are largely ignored and remain hidden from the public eye. This lack of monitoring of a major component of support may be responsible for the observed decrease in support efficiency.

## **12 Changing Import–Export Strategy**

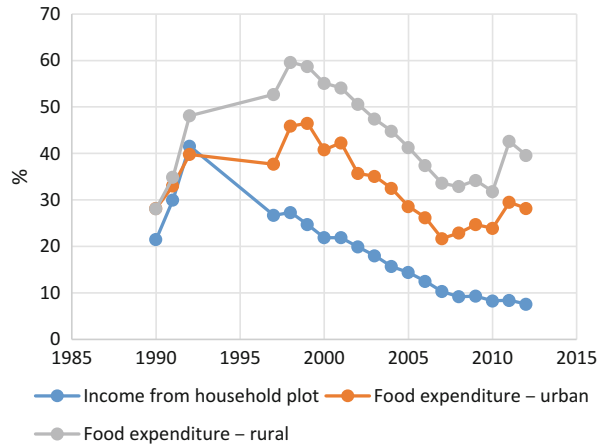
In the last decades of the Soviet planned economy (1960–1990), the USSR imported concentrated feed, and sustained development of the livestock sector by encouraging high levels of consumption of domestically produced meat and milk. The transition to a market economy precipitated a diametrical change in foreign trade strategy: Russia sharply reduced wheat utilisation for animal feed and boosted grain exports to volumes that roughly matched Soviet-era imports (about 20 million tonnes). At the same time, meat and milk imports markedly increased. Money invested in purchase and resale of meat and milk generated huge margins for traders thanks to large differences between import prices and domestic sale prices. This stimulated the flow of capital primarily into food imports, and domestic production received the leftovers after the import quotas had been exhausted.

## **13 Decreasing Share of Food Expenditure Versus Decreasing Share of Income from Household Plots**

The share of food expenditure in the family budget is an important indicator of the standard of living. One of the goals of agrarian reform was to improve the standard of living (especially of the rural population), and we accordingly expect to see the share of food expenditure decrease over time.

During the entire Soviet period after the Second World War, the share of food expenditure in family income indeed decreased steadily, bottoming out in 1990 at 28% for both the urban and rural populations. All through the 1980s the share of food expenditure was practically the same for urban and rural people, which suggests equality of living standards in towns and villages during the late Soviet era. In the first decade of reform (the 1990s), the share of food expenditure increased markedly for both urban and rural families as a result of initial economic disruptions (Fig. 11). It peaked in 1998–1999 and began to decrease thereafter as

**Fig. 11** The share of food expenditure and the share of income from the household plot in per capita income, 1990–2012. Source: see Table 9



the cumulative reforms began to take effect. The share of food expenditure for urban families was consistently lower than for rural families after 1992, an indication of lower standard of living in villages during the reform. After 2007 the share of food expenditure for urban families dropped below the 1990 level to less than 30%, whereas for rural families it approached 30% but remains above the 1990 level.

The reform aimed to close the rural–urban income gap. This goal remains unachieved. In the Soviet era, up to 1990, rural per capita incomes increased from about 40% of urban per capita incomes in the 1940s to nearly 90% at the end of the 1980s, approaching the goal of per capita income equality (Table 9). The post-Soviet reforms produced a steady deterioration in rural incomes: the ratio of rural to urban income dropped from 90% in 1990 to less than 60% in 2008 and recovered slightly to 65% in 2012. The relatively low rural incomes, reinforced by a number of other factors (poor roads, inadequate medical care, lower quality of education, etc.), have led to accelerated out-migration from rural areas, which in turn reduced agricultural production and other productive activities and ultimately resulted in abandonment of large territories.

The food self-sufficiency paradigm underwent a radical change during the reform, especially for the rural population. In the pre-reform and early reform years, even the urban population tried to increase food self-sufficiency: the share of income in kind among urban families (Table 9, column 1) increased from between 1% and 2% before the reform to between 5% and 6% in the 1990s (reverting to 2% after 2005). Among the rural population, income from the household plot (sales revenue plus the value of consumption of own food products) decreased steadily during the Soviet period, from about 40% of total per capita income in the 1960s to 20% in 1990 (Table 9, column 3). In the early 1990s, when economic difficulties were the greatest, the share of income from the household plot rebounded to between 30% and 40% (Table 9, column 3; Fig. 11, blue line). It then resumed its decline to 20% in the late 1990s and early 2000s, eventually dropping

**Table 9** Composition of household income, rural–urban gap and share of food expenditure (% per family member)

Year	Urban income in kind (1)	Rural income		Rural-to-urban income ratio (4)	Share of food expenditure	
		Wage income from agricultural enterprise (2)	Income from household plot (3)		Urban (5)	Rural (6)
<i>Pre-reform years</i>						
1940	9.0	39.7	48.3	43.3	53.0	67.3
1960	1.5	34.7	42.1	48.5	36.9	52.3
1970	1.3	39.3	31.4	69.7	34.7	39.7
1980	2.5	53.5	25.1	79.2	35.0	35.4
1985	2.3	57.3	21.8	87.0	32.8	32.5
1990	2.3	57.6	21.5	88.4	28.2	28.1
<i>Reform years</i>						
1991	4.3	45.3	30.0	86.0	33.0	34.9
1992	5.7	37.0	41.6	77.5	39.8	48.1
1997	5.3	15.4	26.7	68.9	37.7	52.7
1998	5.6	14.3	27.3	68.9	45.9	59.6
1999	5.2	12.0	24.7	70.0	46.5	58.7
2000	4.5	12.4	21.9	65.4	40.8	55.1
2001	4.7	12.9	21.9	65.3	42.3	54.1
2002	4.1	12.6	19.9	63.3	35.7	50.6
2003	3.1	11.2	18.0	60.4	35.1	47.4
2004	2.9	10.6	15.7	56.8	32.5	44.8
2005	2.4	9.2	14.4	55.2	28.6	41.3
2006	2.1	8.4	12.5	56.3	26.2	37.4
2007	1.8	7.8	10.3	56.7	21.7	33.6
2008	1.6	7.5	9.2	57.8	22.9	32.9
2009	1.7	7.5	9.3	60.7	24.7	34.2
2010	1.7	7.2	8.3	62.3	23.9	31.8
2011	2.4	6.4	8.4	64.2	29.5	42.6
2012	2.2	6.1	7.6	65.3	28.2	39.6

Sources: authors' calculations based on Statistical Yearbook (1993: 160–163); Social situation in Russia (various years); data for 1940–1970 for the entire Soviet Union from Narkhoz SSSR (1987: 441–445)

to less than 10% after 2007. The goal of Soviet policy—total replacement of traditional household plots with income from ‘socially productive’ activities (other than self-employment)—which had not been attained during 70 years of Soviet rule, was swiftly achieved in one decade of reform. Rural livelihoods have changed; rural people devote much less attention to their household plot as a safety net.

Not only the household plot lost its traditional importance during the transition to market. Agricultural enterprises are no longer the main source of rural

livelihoods. In 1990, wage income (in cash and in kind) from agricultural enterprises represented 58 % of total per capita income in rural families. By 2010, per capita income from agricultural enterprises had dropped to a mere 7 % for rural families (Table 9, column 2). Looking at these changes from the perspective of the agricultural enterprise, we note that the share of labour costs in total production costs of enterprises also decreased markedly after 1990 (see Table 6). In an effort to improve their cost-efficiency, corporate agricultural producers reduced labour costs, diverting resources from labour to other uses, such as corporate profits, taxes and other payments to the state.

## 14 Conclusion

The Yeltsin agrarian reform fuelled the transition from plan to market in agriculture. In the new market economy, agricultural business is the driver of efficiency improvements. Judging by the results presented in this chapter, business has achieved considerable success in increasing the competitiveness of agricultural producers and improving returns on resource use. However, business success has often created major problems that the state failed to recognise and resolve. For instance, attempting to increase competitiveness, agricultural enterprises increased the average productivity of labour by a factor of 3.6, but this was achieved by shedding 6.8 million workers. Attention to rural employment is not really the responsibility of corporations; it is a major task for the government, which has grossly failed in its responsibility. No special social programmes to preserve the rural population have been adopted during the years of reform. As a result, we witness increasing rural poverty, massive depopulation of villages and the abandonment of more than 90 million ha of agricultural land.

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