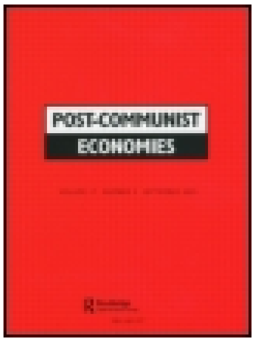

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Cooperative tradition in Russia: a revival of agricultural service cooperatives?

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ABSTRACT

Agricultural cooperatives in Russia have had an uneven evolution: from their initial form of service cooperatives based on classical principles of cooperation in the decades before 1929, they evolved to predominantly production cooperatives during the Soviet era and then back to service cooperatives with the rapid decline in the number and share of production cooperatives after 1992. The number of agricultural cooperatives providing product marketing, input supply, machinery and farm credit services matches the number of production cooperatives as of 2016 but formal membership in service cooperatives is minuscule. Yet, the potential membership in agricultural service cooperatives is conservatively estimated at between 3.8 and 7.5 million rural households, or between 29% and 56% of the rural households in 2017. These numbers represent the pool of small agricultural producers in Russia that are most likely to benefit from cooperation in farm services. More optimistic estimates put the potential number of cooperators at over 90% of all rural households. Examination of possible policy measures for the development of service cooperatives has led to a disturbing conclusion that cooperatives flourish in regions that provide ample budgetary support. No tendencies for significant bottom-up development of cooperatives are observed.

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Introduction

Persistent terminological confusion surrounds Russian cooperatives. Although Russian legislation distinguishes between production cooperatives and service ('consumer') cooperatives, the term 'agricultural cooperative' in Russian is automatically understood as a production cooperative, the result of the dominance of collective farms ('cooperatives' or kolkhozes) after the collectivisation drive in the early 1930s. In English terminology, on the other hand, an agricultural or farmers' cooperative by default is a service cooperative. Yet 'agricultural cooperative', without any qualifier, in the Russian context is often used even in Western publications as synonymous with a production cooperative, or at least the distinction between Russian production and service cooperatives is

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blurred. The purpose of the present article is to differentiate between agricultural production and service cooperatives in Russia based on statistical data, to describe the development and the status of agricultural service cooperatives using the latest statistics, and to speculate on the potential for agricultural service cooperatives in Russia.[1]

The article relies on both historical and current statistics covering Russia's cooperatives since the second half of the nineteenth century. Historical statistics and legal documents are obtained mainly from the unique Historical Materials online project (http://istmat.info) plus the three print editions of the Great Soviet Encyclopedia [GSE] (1937, 1953, 1973) and relevant secondary sources. Current statistics are mainly from Rosstat – Russia's Federal Statistics Committee. Much of the current data are available online in various pages of the Rosstat website (www.gks.ru) as time series or as databases of the last two agricultural censuses (2006 and 2016). A valuable Rosstat resource, unfortunately available only to institutional subscribers, is the collection of annual financial reports of all agricultural cooperatives in Russia in recent years. All sources, electronic and print, are provided in the list of references at the end.

The article is organised as follows. It begins with a description of the cooperative tradition in Russia starting in the mid-nineteenth century and extending through the end of the 1920s, just before the start of Stalin's collectivisation drive. Next, we describe the development of cooperatives – both production and service – in the USSR 'after collectivisation'. Finally, we move to cooperatives in post-Soviet Russia, estimating the potential for agricultural service cooperatives from the latest statistical data.[2] A disturbing, but perhaps not entirely unexpected, finding of our analysis is that cooperatives flourish in regions that provide ample budgetary support and show no tendency to develop bottom-up from rural grassroots.

Cooperative tradition in Russia: from the Tsarist period until collectivisation

Cooperatives, and particularly agricultural cooperatives, have a long tradition in Russia. In Tsarist Russia, the nineteenth century was characterised by communal agriculture. The Emancipation Act of 1861 abolishing serfdom transferred land ownership to the village commune (*obshchina*), not to individual peasants. The commune was obliged to allot land to all its members, and each peasant was entitled to participate in deliberations and decisions on every aspect of life in the commune – 'from the choice of a shepherd to the distribution or redistribution of the fields or the purchase of additional land' (Fitzlyon & Browning, 1992).

Common use of land and a tradition of communal decision making provided fertile soil for the development of cooperatives in rural communities. Agricultural cooperatives (other than the traditional village communes) began to develop in Russia in the 1860s–1890s, soon after the introduction of cooperative principles in Western Europe.[3] The nineteenth-century cooperatives were mainly societies or associations of peasants specialising in the traditional activities of credit, processing, input purchasing and farm product marketing. A source from 1895 describes in vivid terms the initial development of agricultural cooperation in Russia (Brokgauz-Efron, 1895):

> Small landowners join forces to establish a mill, a cheese-making dairy, to buy cattle, to cultivate a meadow or a forest, to drain a marsh. There are also societies that pursue the development of one particular agricultural enterprise, such as processing of dairy products, winemaking, etc. Recently, farmers' societies were established in Perm' Province, with the assistance of local government, with the object of joint purchase of horses, improved seeds and implements, and joint processing for all or some of the members. Such societies were also established in Kherson Province [in south-eastern Ukraine]. Farmers' societies for the purchase and marketing of products (which are very common in France) began to be established in Russia only in 1890, and today [1895] their number does not exceed six.

A major milestone in the development of Russian cooperation was the establishment in 1898 of the Moscow Union of Consumer Societies (a precursor of the Soviet-era Tsentrosoyuz System) as the first association of cooperatives in Russia, which abided by the standard cooperative principles of independence, democratic decision making, and freedom of entry and exit. By 1915, there were 23,700 agricultural cooperatives in Russia, of which 60% were agricultural credit cooperatives (GSE, 1953, vol. 38, p. 444). Just before the revolution of October 1917, some 10 million Russian peasants were members in 16,500 credit societies and over 2 million were members in 12,000 other agricultural cooperatives (GSE, 1973, vol. 13, p. 107); over 90% of Siberian butter was produced and marketed at that time by a union of cooperative creameries, with a membership of nearly half a million producers and 3000 creameries (Epshtein, 1993). These pre-1917 cooperatives, however, were not particularly long-lived: once the members had built up their initial wealth through cooperation ('had bought horses and farm implements'), they tended to leave the association, and the cooperative would eventually dissolve (GSE, 1973, vol. 13, p. 107).

Russian cooperatives grew explosively between 1915 and 1918 despite, and perhaps because, of the disruptions associated with World War I and the October 1917 Revolution (Table 1). The bulk of the cooperatives (56,600 or 89%) served rural areas and had a membership of 18.6 million. Assuming an average family size of five, it is estimated that in these years, rural cooperatives served about 90 million people, or 82% of the rural population at that time (Reader, 1990). Even as the Civil War was still raging in the aftermath of the Revolution, a government decree of May 1921 on agricultural cooperation allowed peasants to freely create agricultural cooperative societies and associations of all forms and instructed regional administrations to encourage rural cooperation (Council of People's Commissars, 1921). No less important for the development of the post-1917 cooperatives was the relatively permissive and tolerant atmosphere under the New Economic Policy (NEP), which sought to improve the economic conditions after the hardships of 'war communism' by emphasising and encouraging

Table 1. Development of Russian cooperatives between 1915 and 1918.

	1 January 1915		1 January 1918	
Type of cooperative	Number	%	Number	%
Consumer societies	11,400	31.9	35,000	54.3
Credit cooperatives	14,350	40.2	16,300	25.3
Agricultural cooperatives	9350	26.2	11,400	17.7
Other	600	1.7	1700	2.6
Total	35,700	100.0	64,400	100.0

Source: http://istmat.info/node/36408

individual business initiatives in a socialist environment. During the 1920s cooperatives focused on trade intermediation, as this did not require major capital investments. The NEP cooperatives played a major role as raw-material integrators, buying from peasants and supplying state industries.

The number of cooperative associations increased rapidly between 1924 and 1928 (Table 2), and by 1929, on the eve of Stalin's collectivisation campaign, 13 million or over 55% of individual farms in the Soviet Union were members in more than 100,000 cooperatives of various types, which included credit associations, farm machinery associations, soil reclamation associations, livestock associations, and processing and marketing associations (GSE, 1953, vol. 38, p. 444). Flax processing and marketing, as well as butter, starch and molasses production were predominantly cooperative activities at that time. The share of cooperatives in the procurement of farm products (both crop and livestock) in the 1920s is shown in Table 2. Cooperatives accounted for 15% of all Soviet exports by 1929 (Epshtein, 1993), exporting over 50% of butter and 30% of flax (Serova, 1991).

A new feature characterising the post-1917 stage in the evolution of Russian cooperation is the rapid emergence of national cooperative unions. These national organisations often initiated and guided the 'top-down' creation of local and regional cooperatives. By 1927, the national cooperative unions supplied 80% of farm machinery, 50% of tractors and virtually all the fertiliser to the rural sector; in return cooperatives marketed well over half the output of specialised crops and a third of the grain harvest (GSE, 1937, vol. 34, pp. 219–220; Savchenko, 1991; Serova, 1991).

Another feature of the 1920s was the spontaneous and completely voluntary emergence of agricultural production cooperatives, created by peasants pooling their small allotments of land, or sometimes joining without any land at all.[4] Even before Stalin's collectivisation campaign, the number of production cooperatives increased from 8300 in 1927 to 22,000 in 1928, as the share of peasant farms joining such cooperatives more

Table 2. Share of agricultural cooperatives in total procurement in the Soviet Union, %.

	1924–1925	1926–1927	1927–1928 (1st half)
Sugar beet	48	85	96
Makhorka	25	88	100
Tobacco	–	65	71
Cotton	60	90	97
Flax	19	35	56
Grain	7	28	35
Butter	44	68	72
Meat	–	34	48
Wool	21	36	66
Eggs	27	43	52

Source: Serova (1991).

Table 3. Production cooperatives in Russia before and after the start of collectivisation in 1929.

	1927	1928	1929	1930	1931	1932	1933	1934
Number of production cooperatives (thou.)	8.3	21.6	38.5	54.3	149.0	155.2	169.5	176.3
Percent of peasant farms in production cooperatives	0.7	1.6	3.7	20.3	50.9	60.3	64.5	72.0
Share of production cooperatives in sown area (%)		1.3	3.7	29.0	64.1	77.7	83.2	86.5

Source: Sel'khoz (1935), Table 465, pp. 633–634; Table 471, p. 640.

than doubled from 0.7% to 1.6% (Table 3). Their contribution to agricultural production was commensurate with their small share of the sown area: around 1%.

Lenin's 'cooperative programme' that crystallised in the 1920s advocated cooperation as an intermediate stage in the conversion of the inherently conservative and individualistic peasants to socialism, with the collective farm and eventually the state farm as the ultimate socialist structure[5] (GSE, 1953, vol. 22, p. 518; 1973, vol. 13, p. 109). Lenin's cooperative programme, with its emphasis on transition, provided the philosophical basis for the relatively tolerant and sometimes even supportive attitude toward the cooperative movement in the Soviet Union in the 1920s. It is not clear, however, to what extent the post-1917 cooperatives retained their independence and true cooperative nature. The Moscow Popular Bank – the proud centrepiece of Russian consumer cooperation since its establishment in 1912 – was nationalised in 1918 and incorporated into Russia's National (i.e. Central) Bank (Reader, 1990). There is documented evidence that during the 1920s the cooperative organs fought, without success, for the adoption of a democratic law of cooperation. Ultimately, in 1929, Lenin's programme was invoked by Stalin as the ideological justification for the collectivisation campaign.

Cooperatives in the USSR after collectivisation

Prior to the start of Stalin's collectivisation campaign in 1929, most farmers' cooperatives in Russia clearly functioned as service cooperatives, with less than 2% of peasant farms in production cooperatives (Table 4), compared with 55% in cooperatives of all types. The situation changed dramatically in the 1930s, as collectivisation transformed Russia's agriculture into agriculture of production cooperatives. The number of production cooperatives (primarily *artels*) grew from 4000 in 1929 to 180,000 in 1934 (Table 4) and continued to grow until 1936–1937 when it reached 190,000. By that time, about 90% of peasant households in Russia had been collectivised in production cooperatives (Figure 1, curve with circle markers) and the process of collectivisation was regarded as virtually completed (although 100% collectivisation of peasant farms was not reported until 1955–1970; see Sel'khoz, 1971).

Table 4. Grouping of cooperatives by organisational-functional form in 2016.

	Registered cooperatives		Cooperatives filing financial reports for 2016			
			Total		Designated as 'agricultural cooperative' in their name	
Organisational-functional form[a]	Number	% of total	Number	% of registered	Number	% of total
Production cooperatives	**13,690**	**13.9**	**7076**	**51.7**	**4903**	**56.5**
Agricultural production cooperatives	9972	10.1	5436	54.5	4886	56.3
Other production cooperatives	3718	3.8	1640	44.1	17	0.2
Consumer cooperatives	**84,951**	**86.1**	**36,486**	**50.8**	**3776**	**43.5**
Housing cooperatives	65,175	66.1	27,350	42.0	3	0
Credit cooperatives	3424	3.5	1468	42.9	90	1.0
Consumer societies	6308	6.4	3855	61.1	43	0.5
Agricultural service cooperatives	5973	6.1	3298	55.2	3185	36.7
Dacha cooperatives	4071	4.1	515	12.7	455	5.2
Total	**98,641**	**100**	**43,562**	**44.2**	**8679**	**100**

[a]Based on All-Russia Classifier of Organisational-Legal forms (OKOPF).
Sources: Rosstat Financial Reports (2016); EMISS (2018), registered cooperatives as on 1 January 2017.

Collectivisation completely obliterated the cooperative principles that had guided the Russian cooperatives since the second half of the nineteenth century. All cooperatives were absorbed in the administrative command system that gave the state full control over their decisions and operational behaviour. Although the standard statute of a collective farm during and after the Stalinist era was a model manifesto of cooperative principles, this held only on paper: in reality, independent democratic decision making, freedom of entry and exit, and voluntary organisation were all sacrificed to rigid state dicta.

The transformation of Russia's agriculture to agriculture of production cooperatives in the 1930s is perhaps best illustrated by their share of sown area, which increased from just 1.3% in 1928 to almost 80% in 1934 (Table 4). It continued to grow steadily with the expansion of the kolkhoz sector, reaching a peak of 86.5% in 1940, on the eve of World War II. Production cooperatives survived the wartime ravages, and between 1945 and 1955 their share of the sown area remained above 80% (Figure 1, curve with triangle markers). This essentially implies that the once-dominant family farm sector, which accounted for more than 95% of the sown area in 1928, shrank dramatically in the process of collectivisation: its share in 1955 was merely 3%. The remaining 15% was accounted for by the burgeoning sector of state farms, whose growth was strongly encouraged by government policies in line with Lenin's cooperative vision.

After 1953, the role of production cooperatives began to decline as kolkhozes were transformed in increasing numbers into state farms due to the financial difficulties that hit Russia's agriculture in the 1950s. This was an early example of a bailout policy initiated by the state to save the 'private' collective farms and transfer the financial burden from the cooperative members to the state budget that by definition supported the sovkhozes. While the share of kolkhozes in sown area plummeted from 81% to 51%

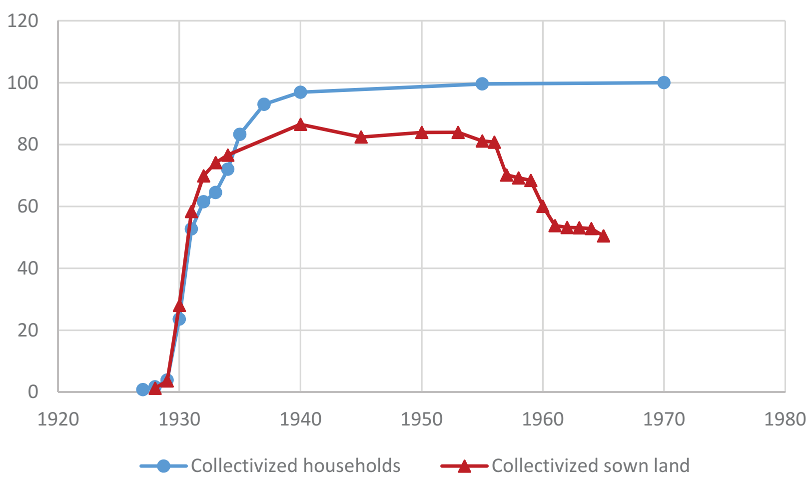

Figure 1. Share of households in production cooperatives in the USSR 1927–1970 and share of sown land in production cooperatives in Russia 1918–1965 (in percent). No data for the number of collectivised households in Russia are available after 1935, but the curve for the USSR is a reliable proxy for Russia as the two series closely match during the overlap years 1927–1935.
Source: Sel'khoz (1935, 1971).

in the decade between 1955 and 1965 (Figure 1, curve with triangle markers), the share of sovkhozes correspondingly rose from 16% to 47%. The total share of 'socialised' farms – kolkhozes and sovkhozes combined – remained stable at 97% of the sown area, which highlights the exact nature of this dynamic: direct transformation of agricultural producers from production cooperatives to state farms. The rapid transformation ceased in 1965 and the shares of sown area stabilised at about 44% in production cooperatives and 51% in state farms, with the remaining 5%–6% of the sown area in household family farms.

Over time, the terminological distinction between kolkhozes (collective farms) and sovkhozes (state farms) became blurred, especially in the western literature, and all farms were referred to as 'agricultural enterprises' (*sel'skokhozyaistvennye predpriyatiya*). The term cooperatives fell into disuse and the western literature began to refer to Russian agriculture as state agriculture, reflecting the prevailing central planning system.

And yet, in addition to production cooperatives, Russia continued to boast an extensive system of consumer cooperatives, primarily the thousands of consumer societies acting within the Tsentrosoyuz system (Tsentrosoyuz, 2018), as well as mutual help associations and credit cooperatives. Like the production cooperatives, however, the Tsentrosoyuz system was completely subordinated to the state and was a direct tool of state policy goals in rural areas. Even the laudable task of promoting rural development by helping household plots sell their surplus production (honey, rabbit furs, flax, chicken eggs, etc.) was subject to rigid state targets.

A major organisational and policy change occurred in 1988 with the adoption of the Law of USSR 'On Cooperation' (USSR Law on Cooperation, 1988). Under the new law, cooperatives could engage in any business activity, including trade, and furthermore were allowed to employ hired labour. It reaffirmed the cooperative principles and freed cooperative operations from state controls. The law was hailed as a doorway to private entrepreneurship, similarly to the NEP in the 1920s. And yet it was too general to reflect the complex realities of the cooperative organisation in Russia. It was accordingly followed by more specialised federal laws adopted by the Russian Federation after the breakup of the USSR: the Law of Consumer Cooperation (1992), the Law of Agricultural Cooperation (1995), the Law of Production Cooperation (1996) and the Law of Credit Cooperation (2009). Thus, in principle, the Russian cooperatives are governed by four federal laws, plus the old USSR Law on Cooperation, parts of which still remain in force. In practice, however, all agricultural cooperatives are now governed by the Law of Agricultural Cooperation (1995, as amended repeatedly through 2018), which deals separately with the three main types of cooperatives in agriculture: agricultural production cooperatives; agricultural consumer cooperatives; and agricultural credit and insurance cooperatives.[6]

Current classification and status of Russian cooperatives

Table 4 presents the basic statistics for all the Russian cooperatives registered in the EMISS database[7] as of January 2017. This includes agricultural and non-agricultural cooperatives, production and service cooperatives, and various other groups identified according to the All-Russia Classifier of Organisational-Legal Forms (OKOPF). Of the nearly 100,000 registered cooperatives, about one-half filed annual financial reports and could thus be regarded as active (Saraikin & Yanbykh, 2018).

Consumer cooperatives clearly account for the bulk of Russia's cooperative system, but most of them are housing cooperatives (including so-called 'garage' cooperatives), while the agricultural consumer cooperatives represent a mere 6% of the total.[8] In Russia, the term 'agricultural cooperative' is traditionally understood as 'production cooperative', i.e. a collective farm. 'Consumer cooperative' (*potrebitel'skii kooperativ*) is the term used in Russian to designate any cooperative organisation that does not engage in primary production or manufacturing.

Although the term 'agricultural consumer cooperatives' (*sel'skokhozyaistvennye potrebitel'skie kooperativy*) is solidly established in Russian nomenclature, it is somewhat unusual in English, where it echoes the Rochdale retail experience and to this day implies the sale of consumer goods to members at preferential prices. This was indeed the original scope of consumer cooperatives in Russia as described by the classical researchers of Russian cooperation (Chayanov, 1986; Tugan-Baranovskii, 1916), and this definition was incorporated in the USSR Law on Cooperation (1988), where consumer cooperatives have the responsibility of supplying the rural population with consumer goods and assisting household-plot operators with the sale of their surplus output (art. 40 and elsewhere). The Russian concept of consumer cooperation has evolved over time, however. According to the current functional breakdown of agricultural consumer cooperatives in EMISS, the Russian consumer cooperatives include processing cooperatives, marketing cooperatives, supply cooperatives and farm-service cooperatives.[9] As the designation of this group in English, we accordingly use the accepted term 'agricultural service cooperatives'.

Agricultural service cooperatives are fewer in number than agricultural production cooperatives (6% and 10% of the total, respectively; see Table 4). This is clearly a reflection of the dominance of production cooperatives in the Soviet era, the effects of which persist despite the reduction in their numbers since 1953 (see Figure 1, curve with triangle markers). This disparity in numbers is also influenced by the fact that traditional production cooperatives (kolkhozes) have always provided a wide range of agricultural services to the rural population, reducing the reliance of peasants on outside service cooperatives.

Potential for agricultural service cooperatives in Russia

The main impetus for the growth of agricultural service cooperatives was provided by the National Priority Project for the Development of the Agroindustrial Complex (2006–2007).[10] This programme introduced for the first time interest-rate subsidies and financial support for the organisation of agricultural service cooperatives. It triggered an immediate growth in the number of service cooperatives, which rose fivefold from 265 in 2006 to 1352 in 2007, excluding agricultural credit cooperatives (Conception, 2013). After a promising start, the growth peaked at nearly 7000 cooperatives in 2010, but in 2017 the numbers of agricultural service cooperatives were less than in 2010 across all activities (Table 5). This accompanied the slashing of state credits to agricultural service cooperatives from 6.4 billion rubles in 2009 to 1 billion rubles in 2014. The share of agricultural service cooperatives in all government subsidies to small

Table 5. Agricultural service cooperatives by activity 2010–2017*.

Types of cooperatives	2010	2011	2012	2013	2014	2015	2016	2017	2017–2010
Number of agricultural service cooperatives	6647	6006	5504	4554	5236	4416	4511	3935	0.59
Marketing and supply cooperatives, %	38	29	27	26	37	34	38	23	0.36
Processing cooperatives, %	11	11	11	12	11	12	12	16	0.98
Credit cooperatives, %	18	20	24	27	23	26	22	22	0.71
Other activities, %	33	40	38	35	29	28	28	39	0.68

*The numbers in the table represent active cooperatives, as some of the formally registered cooperatives may be inactive.
Source: MinAg Reports (2015–2017).

agricultural business dropped from 5.8% to 0.9%. As of 2014, state grants have become the main instrument for the support of supply, marketing and processing cooperatives (Grant Support, 2018). The scope of the grants was limited, however: they were intended to finance 60% of the cost of equipment purchased for horticultural and dairy processing. Because of budget limitations, the programme envisaged grants for 260 agricultural service cooperatives in all, a mere 6% of the total number. Fully 252 cooperatives had received grants amounting to 3.6 billion rubles[11] in 2015–2017 (MinAg Reports, 2015–2017).

World experience shows that cooperatives are the best tool for overcoming the 'curse of smallness'. The obvious candidates for membership in agricultural service cooperatives in Russia are independent farmers who produce in household plots and in peasant farms (organised after 1992) operating outside corporations. Most of them can be classified as smallholders, although some peasant farms may reach substantial size by land and livestock headcount. Indeed, in 2016, fully 90% of members in agricultural service cooperatives came from these two groups (Rural Territories, 2017). Nearly 19 million household plots and more than 115,000 peasant farms were engaged in agricultural production in the first half of 2016 (Table 6).

The post-Soviet agricultural reforms led to substantial increases in the share of the individual sector in land, livestock headcount and agricultural production. The individual sector (peasant farms and household plots combined) accounted in 2016 for 55% of dairy cattle. The cattle herd and livestock production (milk and meat) in the individual sector was greater than in corporate farms for Russia as a whole.[12] According to a recent survey (Kotomina, 2018), the number of cows in the individual sector is comparable with agricultural enterprises in 40% of the 1200 districts surveyed.

Surveys in Ul'yanovsk Oblast[13] (Dairy Cooperatives, 2017) have shown that even households with one cow produce milk surpluses and are willing to join a dairy cooperative for milk collection and marketing. In Russia as a whole, only 10% of household

Table 6. Number of agricultural enterprises and individual agricultural producers in Russia in the first half of 2016.

	Agricultural enterprises	Peasant farms*	Household plots**
Registered units	36,075	174,773	23,487,700
Number of units engaged in agricultural production	27,508	115,600	18,720,800
Percent engaged in agricultural production	76.3	66.1	79.7

* Including individual entrepreneurs.
** Includes other individual smallholders (households with livestock but without land, households with fruit and vegetable patches, households with dacha plots, etc.).
Source: 2016 AgCensus (2018).

Table 7. Distribution of cows in peasant farms and household plots (1 July 2016).

	Peasant farms (PF)*				Household plots (HH)			
Cattle headcount	% of all PF	% of PF with cows	% of cows	Cows per PF	% of all HH	% of HH with cows	% of cows	Cows per HH
No cows	68.6	x	0	0	90.2	x	0	0
<3	4.6	14.7	0.7	1.5	7.7	78.5	45.4	1.3
3–5	4.8	15.4	1.9	3.9	1.5	15.9	25.1	3.6
6–10	5.1	16.2	4.1	8.2	0.4	3.8	12.5	7.6
10–100	14.7	47.0	52.2	35.8	0.2	1.8	17.0	21.4
>100	2.1	6.7	41.1	197.5				
Total in farms with cows	31.3	100	100	32.2	9.8	100	100	2.3
Total, %	100	x	100	10.1	100	x	100	0.22
'000 cows	115.6	36.2	1167.7		13,813.3	1357.3	3096.9	

*Including individual enterprises.
Source: 2016 AgCensus (2018).

plots have any cows (Table 7). The number of cows per household plot reaches more than 10 in just 2% of the cases, but hardly ever rises to 100 head. Practically all 1.4 million household plots with cows are small milk producers and could benefit from cooperative services for milk collection, marketing and processing.

Among peasant farms, only 31% report any cows. They all have more than one cow, and fully 53% of farms have more than 10 cows (Figure 2). Furthermore, 7% of peasant farms have more than 100 cows. These farms are probably big enough and require less support from service cooperatives. Yet the remaining 93% or 34,000 peasant farms averaging less than 100 cows per farm are certainly candidates for cooperative membership. This is especially so if we consider the feed base of the small farms: peasant farms with up to 100 cows have 7 hectares of agricultural land per 100 cows, whereas larger peasant farms have 11 hectares; household plots average two cows and 0.14 hectares of sown land, which calculates at 7 hectares of sown land per 100 cows, similarly to the small peasant farms. These estimates are very crude, as the data for different farms are not entirely comparable, but they nevertheless indicate the importance of feed supply services for the small farms in Russia.

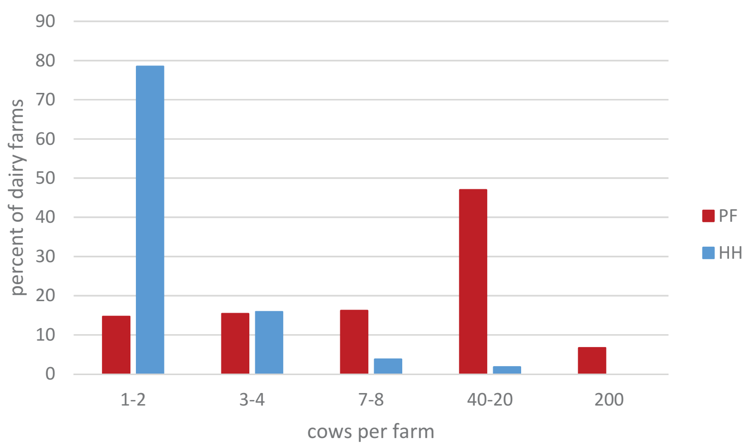

Figure 2. Distribution of the average number of cows per farm in 2016.
Legend: PF – peasant farms, HH – household plots. Source: see Table 7.

According to these estimates, the small milk producers – both household plots and peasant farms with less than 100 cows – have 3.8 million cows.[14] This amounts to 24% of the total number of dairy cows in Russia in 2016 (15.7 million). The potential for milk collection and marketing by cooperatives serving small dairy producers can be estimated at about one-quarter of the total annual production, or 7.7 million tons in 2016 (Rosstat, 2017, Table 16.27, p. 375).

The high proportion of small farms is also evident in crop production. Among household plots, virtually all have less than 1 hectare of sown land and are obviously very small; among peasant farms, more than 70% have up to 200 hectares of sown area and may be regarded as small. Small farms control 4 million hectares (2.4 million hectares in household plots and 1.6 million hectares in small peasant farms with up to 200 hectares of sown area per farm) or 5% of the total sown area in Russia in 2016. Breakdown by crops is available for household plots, but not for small peasant farms with less than 200 hectares. Small farms as represented by the household plots have a dominant position in horticulture (potatoes, vegetables, melons), managing about 70% of the sown area under these crops (2016 AgCensus, 2018).[15] Unfortunately, no breakdown by crop is available for the small peasant farms, but they certainly increase the share of household plots to a measurable extent.

Within the individual sector, there are striking differences in the level of commercialisation between peasant farms and household plots (Figure 3). The majority of peasant farms show strong commercial orientation: about half of the farms sell more than 90% of their output (averaged over 15 commodities). Household plots, on the other hand, are much less commercially oriented: about half the household plots sell between 10% and 50% of their output (averaged over a slightly different mix of 11 commodities). Dichotomising the share of output sold at 50%, we obtain that 76% of peasant farms sell more than half their output, compared with only 30% of household plots. Yet, contrary to the common view of household plots as purely subsistence operations, fully 70% sell up to half of their output, and nearly 20% of the smallest household plots sell up to 10% of their output. They all could benefit from cooperative help with marketing.

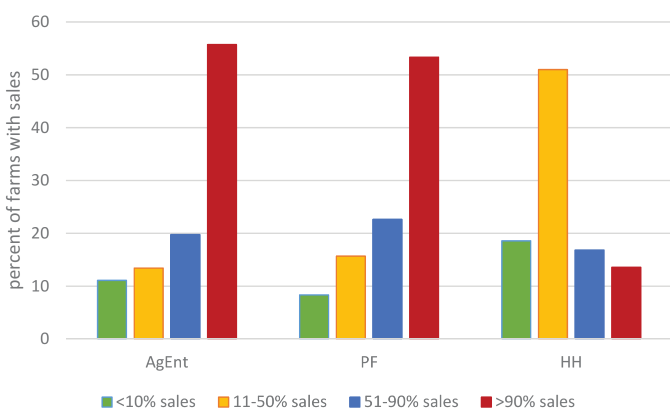

Figure 3. Distribution of farms by share of output sold.
Source: 2016 AgCensus (2018).

Perhaps a better estimate of the potential for cooperation can be obtained by looking at the breakdown of agricultural producers into so-called economic activity classes. Based on the previous (2006) agricultural census, the farms were grouped into three activity classes by standard revenue[16]:

- residential and recreational farms (with standard revenue up to 10,000 rubles per year);
- subsistence family farms with standard revenue between 10,000 rubles and 30,000 rubles per year; and
- commercial farms with standard revenue greater than 30,000 rubles per year.

Of the 31 million agricultural producers identified in the 2006 Agricultural Census, fully 87% are the two classes of non-commercial farms that generate standard revenue up to 30,000 rubles, with most of their output consumed within the family. The remaining 13% (about 3.8 million producers) are commercial farmers generating 89% of annual standard revenue. Table 8 breaks down the activity classes by legal-organisational forms. Most of the commercial farms (96% of the group or 3.7 million producers) are household plots; the group also includes about 100,000 peasant farms and 40,000 agricultural enterprises. In our opinion, these commercial farms are a potential pool of members for agricultural service cooperatives.

It may be argued, of course, that a cooperative could steer the large cohort of non-commercial farms to transition from non-commercial to commercial, but this is a long-drawn, information-intensive process and it is difficult to view these non-commercial farms as potential cooperators in the short term. An intermediate approach would combine commercial and subsistence farms as potential cooperators (leaving out only the group of residential and recreational farms). This intermediate estimate gives

Table 8. Distribution of economic activity classes by legal-organisational form in the 2006 Agricultural Census.

			Agricultural producers		
	All census farms	Farms without agricultural production	Residential & recreational farms	Subsistence farms	Commercial farms
Number of farms, thousands	36,927	5984	23,532	3454	3957
% of all census farms					
Enterprises	0.02	0.3	0*	0*	1.0
Peasant farms	0.8	2.3	0.2	0.3	2.5
Household plots	61.7	43.4	55.6	96.0	96.3
Gardening associations	37.3	54.0	44.3	3.7	0.2
Total farms by legal form, %	100	100	100	100	100
Standard revenue, million rubles	1076.5	0	58.4	61.9	952.2
% of total standard revenue					
Enterprises	56.7	0	0.0	0.0	63.6
Peasant farms	7.6	0	0.2	0.3	8.5
Household plots	33.5	0	63.2	96.8	27.9
Gardening associations	2.2	0	36.6	2.9	0.0
Total standard revenue by legal form	100	0	100	100	100

* 0 stands for a negligible number.
Source: Saraikin (2012).

7.5 million potential cooperators (Table 8). Household plots represent more than 95% of both subsistence and commercial producers, while peasant farms constitute less than 3% of these classes. Looking at these numbers from a different angle, 35% of household plots are classified as subsistence and commercial producers, whereas among peasant farms fully 68% are commercial producers and another 16% are subsistence producers.

The scope of potential cooperators can be extended even further by including all small producers that sell some of their surplus outside the family as potential candidates for cooperation (Yanbykh, 2018). This cohort is close to 13.8 million. It can be further argued that all household plots engaged in agricultural production (18.8 million, i.e. 80% of the total of 23.5 million household plots in Russia) should be viewed as true smallholder farms in the traditional sense of peasant farm introduced by Chayanov in 1919 (see Chayanov, 1986).[17] After all, the contribution of household plots to gross agricultural output has never dipped below 50% in more than 20 years, which proves their exceptional resilience in the face of adverse policies. All these small agricultural producers can benefit from the service infrastructure of cooperatives.

The alternative estimates of the number of potential cooperators are, of course, speculative. In the absence of specifically focused survey or census results, they range widely from a minimum of 3.8 million (commercial family farms only) to a maximum of 18.8 million (all household plots engaged in agricultural production). The estimates are summarised in Table 9. Despite the uncertainty in actual numbers, it is clear from these estimates that the pool of potential cooperators in Russia is very large – in the millions. Yet the actual membership of agricultural service cooperatives in 2017 was 72,600,[18] i.e. less than 2% of the lowest potential number. According to the 2016 AgCensus (2018), only 3.6% of agricultural enterprises and 4.1% of peasant farms were members of agricultural service cooperatives. The share of cooperatives in services to household plots is negligibly small. For example, only 0.1% of soil preparation, sowing, processing and transport services is provided by cooperatives. The share of cooperatives is much higher (6%) in the collection of surplus production (Rural Territories, 2017). Between 40% and 50% of the respondents in a sociological monitoring survey expressed willingness to join a cooperative (Table 10).

Our analysis has demonstrated the large potential for cooperation in farm services among the small farms in Russia. They need the 'economies of size' implicit in cooperation to facilitate input purchasing (especially feed, fertilisers and pesticides) and output marketing (milk, vegetables). They also need machinery pooling arrangements to ensure access to large indivisible machines. Development of cooperative services may re-energise growth in the small-farm sector. Creation

Table 9. Alternative estimates of potential cooperators (in millions).

Farm grouping	Number of farms, millions	Estimation source
Commercial farms	3.8	2006 AgCensus*
Commercial and subsistence family farms	7.5	2006 AgCensus*
Household plots that sell some of their surplus	13.8	2016 AgCensus**
Household plots engaged in agricultural production	18.8	2016 AgCensus**

*Saraikin (2012); Uzun et al. (2010).
** 2016 AgCensus (2018), Table 4, pp. 20–21.

Table 10. Expression of interest to join a -cooperative: percent of peasant farmers surveyed.

Type of cooperative	% of respondents
Processing	48.0
Purchasing, supply	39.4
Sales and marketing	53.7
Credit	41.3
Other	6.4

Note: Multiple choices allowed. Other types of cooperatives include feed and hay preparation, storage facilities, animal grazing in wintertime, adoption of new technologies, soil preparation and harvesting, advice on land titling and other legal issues.
Source: Rural Territories (2017).

of cooperative infrastructure should be one of the clear priorities of government policy.

Regional features of cooperative development in Russia

Another aspect of cooperative development is the territorial distribution of small agricultural producers as the main pool of potential cooperators. The economic activity classes in Table 8 were regrouped into four types by increasing standard revenue (as a size proxy)[19]:

- non-commercial family farms (standard revenue up to 30,000 rubles per year);
- commercial family farms (standard revenue between 30,000 rubles per year and 300,000 rubles per year);
- capitalist farms (standard revenue between 300,000 rubles per year and 30 million rubles per year); and
- large capitalist farms (standard revenue greater than 30 million rubles per year).

The non-commercial family farms include residential and recreational farms and subsistence farms (see Table 8). The other three groups represent a breakdown of commercial farms by increasing standard revenue gradations.

Of the 1442 administrative districts (raions) in Russia, more than 60% (889 districts) were characterised by a predominance of commercial family farming in 2012, up from less than 50% in 2006.[20] The population in these districts in 2012 was 34 million, of which 15.4 million (45%) lived in rural areas. These districts produced in 2012 one-third of Russia's gross agricultural output. Regions with predominantly capitalist and large capitalist farming[21] produced 65% of gross agricultural output in 2012 (Saraikin & Yanbykh, 2016).

It is logical to hypothesise that agricultural service cooperatives would tend to develop primarily in regions with commercial family farms, as these farms are particularly positioned to benefit from cooperation and other forms of vertical integration. Yet our analysis of agricultural service cooperatives in regions with different farming types has shown that they unexpectedly achieve the best performance (as measured by cooperative six-year revenue per district) in regions with a predominance of capitalist and large capitalist farming, not family farming (Table 11). In these regions, the six-year revenue of agricultural service cooperatives per district is roughly 30% higher than the revenue per district attained in regions with a predominance of commercial family farming.

Moreover, the cooperative annual revenue in districts with predominantly capitalist farming rose over time, while that in regions with commercial family farming declined (Table 11): the annual revenue in districts with capitalist and large capitalist farming more than quadrupled between 2009 and 2014 (in constant prices) and the revenue in districts with commercial family farming dropped to about three-quarters of the 2009 value.

Several reasons may explain the faster growth of service cooperation in districts with capitalist farming, not in districts with family farming. Firstly, and probably most importantly, total agricultural sales per district in regions with capitalist farming are nearly double the sales in regions with commercial family farming (742 million rubles and 382 million rubles, respectively; see Saraikin, 2012, Table 31). The greater cooperative sales in districts with capitalist farming may, therefore, be an overflow effect due to the greater total agricultural sales in these districts. Secondly, districts with large capitalist farming – Stavropol' and Krasnodar krays, Belgorod Oblast – are relatively rich: their regional budgets are larger. Therefore, all farms in these districts – capitalist and family alike – are nourished by more generous state support, which includes a regional component on top of the federal base. Thirdly, small family farms often enter into vertical integration arrangements directly with large capitalist enterprises, bypassing service cooperatives: they benefit from joint marketing and supply services, information technologies, transport infrastructure, more seldom they undertake contract jobs for the large farms. All this is conducive to the better development of small farms in districts with a predominance of capitalist farms, which in effect fulfil the role of service cooperatives. The increased contribution of family farms boosts the reported revenue of capitalist farms in these districts.

Vigorous development of agricultural service cooperatives in districts with predominantly family farming is typically observed in regions with forward-looking regional authorities. A striking example is the Republic of Yakutiya (Saha), where

Table 11. Annual and six-year cumulative sales revenue of agricultural service cooperatives in districts with different farming structure 2009–2014 (million rubles in constant prices).

Agrarian structure	Number of districts	2009	2010	2011	2012	2013	2014	Revenue (6 yrs)	Revenue per district	2014 in % of 2009
Non-commercial producers	2	–	0.06	0.168	0.105	0.523	–	0.856	0.428	–
Commercial family farms	254	2864.8	2618.5	2852.5	3539.2	2729.6	2192.7	16,797.3	66.1	77
Capitalist and large capitalist farming	184	1016.5	1701.9	1633.2	2937.4	3766	4457.9	15,512.9	84.3	439
Total	440	3881.3	4320.5	4486.0	6476.7	6496.1	6650.5	32,311	73.4	171

Note: Authors' calculations from Rosstat Budget Data (2012).

programmes for the development of small farms and agricultural cooperatives are strongly supported by financing from the ample republican budget. Leaders of cooperative development also include Tyumen Oblast, Lipetsk Oblast, Krasnoyarsk Kray and other regions with adequate regional budgets that are able to supplement federal allocations.

Budget support in one form or another is thus highly important for the development and survival of agricultural cooperatives in districts with all types of agrarian structure. This phenomenon is not unique to Russia: budget support of farmer cooperatives is widely practised in the EU (Bijman et al., 2012). However, as long as direct dependence on regional support persists, as it does in Russia, we can hardly expect vigorous emergence of 'bottom-up' cooperation in regions with constrained budgets.

Alleviating the constraints to the development of service cooperatives in Russia

The potential pool of cooperators in Russia is conservatively estimated between 3.8 million and 7.5 million family producers, or between 20% and 40% of all households engaged in agricultural production in 2016 (Table 8). More optimistic estimates maintain that virtually all 18.8 million agricultural households are potential cooperative members. Dairy farming and horticulture appear to be the most promising areas for potential cooperation, as smallholders are attracted to these labour-intensive enterprises and are thus most likely to benefit from cooperation in farm services.[22]

Yet, the actual membership and the actual cooperative transaction volumes are minuscule. Russian farmers are reluctant to join cooperatives, which is understandable given the painful experience of forced collectivisation since the 1930s. To overcome this reluctance, government policies should promote wide-ranging public awareness campaigns and other educational efforts. World experience shows that this is an essential tool for exposing farmers to the benefits of cooperation. Previous surveys in Russia and other CIS countries consistently indicated that one of the reasons for not joining a cooperative was lack of information about this form of organisation (see, e.g. Lerman & Sedik, 2017). Effectiveness of such public awareness efforts requires readiness and willingness of government officials. Special education and indoctrination programmes should be devised for the staff of the relevant ministries (food and agriculture, economy, justice), who are largely ignorant of the principles of cooperation and the functioning of cooperatives.

Building confidence in managers and peers is another important feature of a successful cooperative organisation. Trust has been characterised as one of the socio-psychological conditions for agricultural cooperatives (Golovina & Nilsson, 2009; Golovina & Volodina, 2012). In previous surveys, farmers were reluctant to join a cooperative because they lacked confidence in cooperative management and other members (see, e.g. Lerman & Sedik, 2017). Closely linked with confidence are the cooperative attributes of member loyalty or member attachment. Member loyalty has to be earned by management through hard and persistent 'building work' (Kurakin & Visser, 2017). Breakdown of trust and loyalty bonds may lead to catastrophic economic consequences even in a highly developed cooperative environment, as was witnessed in the case of Israel in the 1980s (see, e.g. Rosenthal & Eiges, 2014).

The development of service cooperatives also faces some legal impediments, which have to be eliminated by new legislation. First, the multiplicity of cooperative laws is a frequent source of confusion, and it is not conducive to smooth organisation and operation of cooperatives. It may be preferable to have one uniform umbrella law. Second, service cooperatives are legally classified as 'non-commercial' organisations that operate without a profit objective (Civil Code, 1994, art. 50, 123.2). This obvious obstacle to normal business incentives of service cooperatives should be rectified by new legislation, and service cooperatives should be recognised as commercial, for-profit corporations to be able to take advantage of competitive markets (Saraikin & Yanbykh, 2018).

As of now, agricultural service cooperatives in Russia develop primarily in regions that can afford to provide generous budgetary support to new organisational forms and create favourable conditions for their growth. As everywhere in the world, the reliance on state support creates a trap that encourages the formation of many 'false cooperatives', which are organised solely for the purpose of capturing short-term support funds, without regard to long-term viability. We believe that adjusting the support programmes to include criteria of long-term viability and reinforcing financial support with the non-financial factors mentioned above will further spur the development of agricultural service cooperatives in Russia.[23]

Conclusion

In theory, agricultural service cooperatives provide an ideal solution to the difficulties faced by small farmers in a market environment. In Russia, this theory held in practice both before the 1917 Revolution and during the first decade of the Communist regime, when agricultural service cooperatives burgeoned in rural areas prior to collectivisation. In the post-Soviet environment, the need of smallholders in service cooperatives is not less acute and, indeed, their numbers have increased impressively during recent years. Yet a huge gap is observed between the need-based estimates of the potential for cooperation and the actual membership and transaction volumes of service cooperatives in Russia today. The main constraints to the development of service cooperatives summarised in the previous section can be alleviated by properly designed policy measures that span informational, socio-psychological and legal dimensions.

Notes

1. Because of its empirical focus, the article does not touch on issues of cooperative theory, which are amply covered in the available English-language literature. The interested reader is referred to R. Carson's seminal article (Carson, 1977), the edited volumes of Jeffrey S. Royer and David Cobia (Cobia, 1989; Royer, 1987), and Royer's neoclassical primer of the theory of agricultural cooperatives (Royer, 2014). Grashuis and Cook (2018, pp. 625–626) provide a concise summary of the theoretical features of a traditional cooperative, while Parliament, Lerman, and Fulton (1990) develop a theoretical framework for performance comparison of cooperatives and investor-owned firms based on the functional features of the two forms of organisation.
2. For a concise overview of service cooperatives across other post-Soviet countries, see Lerman and Sedik (2014).

3. The first *artels* – production cooperatives – emerged, mostly outside agriculture, as early as in the seventeenth century (Sobolev, Kurakin, Pakhomov, & Trotsuk, 2018). The distinction of being the first consumer cooperatives in Russia based on modern principles of cooperation belongs to the Big Artel (*Bol'shaya artel'*) and the Small Artel (*Malaya artel'*) established in 1831 and 1834 respectively in Siberia by Decembrists, who were exiled after their failed rebellion in 1825 against Tsar Nicholas I. The Big Artel specialised in wholesale purchase of goods and commodities for the benefit of the members, whereas the Small Artel functioned as a mutual help ('savings-and-loan') association for families in exile (see Wikipedia in Russian, 2018).
4. The production cooperatives in the 1920s had various organisational forms: an updated version of the traditional 'commune', the generic 'farming association' (*zemledel'cheskaya artel'*), 'society for joint cultivation of land' (TOZ) and finally 'collective farm' (*kollektivnoye khozyaistvo*, or *kolkhoz*).
5. State farms (*sovkhozes*) were referred to in official Soviet rhetoric since the 1930s as 'the highest form of organization of socialist agriculture' (see, e.g. Achievements, 1957, p. 158).
6. Law of Production Cooperation (1996, art. 2.1) applies to cooperatives with non-agricultural activities (industry, construction, etc.) and explicitly excludes agricultural production cooperatives (art. 2.2). Agricultural cooperatives are also excluded from the Law of Consumer Cooperation (1992, art. 2) and from the Law of Credit Cooperation (2009, art. 1.2). USSR Law on Cooperation (1988) does not apply to agricultural cooperatives as of May 1996 (Law of Production Cooperation, 1996, art. 28.2).
7. EMISS – the Unified Inter-Administrative Information-Statistical System www.fedstat.ru – contains all the enterprises and organisations registered with the tax authorities.
8. This number is a lower estimate as some of the 'unclassified' consumer cooperatives may ultimately turn out to be 'agricultural' consumer cooperatives on closer inspection.
9. These categories are defined in detail in Article 4: Agricultural consumer cooperatives of the Law of Agricultural Cooperation (1995). Russia's Civil Code provides a very general legal definition of a consumer cooperative as a non-commercial corporation that operates without a profit objective and does not distribute its profits to the members (Civil Code, 1994, as amended to 2018, art. 50, 123.2).
10. National Priority Project for the Development of the Agroindustrial Complex in 2006–2007 was rolled out on 5 September 2005 in President Putin's speech to the government, parliament and regional leaders. For implementation guidelines, see MinAg Order (2005).
11. About \$60 million or EUR50 million at the average exchange rates in 2015–2017 (data from the Central Bank of Russia).
12. Exceptions are the Tatarstan Republic, Voronezh, Novosibirsk and Omsk oblasts, and Krasnodar and Krasnoyarsk krays. In these regions, the corporate sector leads in milk and meat production.
13. Located on the Volga River, south of the Tatarstan Republic.
14. According to Table 7, 3.1 million cows in household plots and 0.7 million in peasant farms with less than 100 cows per farm (59% of 1.2 million).
15. The share of household plots in the area under cash crops – cereals, legumes, oilseeds – is minuscule (about 1%). The main contributors in these crops are the peasant farms and the agricultural enterprises. As we cannot separate out the small peasant farms, any discussion of the share of all small farms in cash crops is a mere speculation.
16. For definitions and methodology, see Uzun, Saraikin, and Gataulina (2010). Standard revenue is a resource-based weighted measure of annual farm output, aggregating areas sown to different crops, headcount of different animal species, average yields per hectare and per animal, and average prices for crop and livestock products. This is an analogue of the Standard Gross Margin used in the EU (http://ec.europa.eu/agriculture/rica/methodology1_en.cfm). The bounds for economic activity classes were calculated in 2010, when the exchange rates averaged 30.4 rubles/USD and 40.2 rubles/EUR (Rosstat, 2017, Table 27.49, p. 664).

17. Note that this traditional sense is different from the legal sense of peasant farm that first entered the Russian usage with the adoption of the RSFSR Law of Peasant Farm in September 1990.
18. Excluding credit cooperatives.
19. For definitions and other details, see Uzun et al. (2010). The average exchange rates in 2010 were 30.4 rubles/USD and 40.2 rubles/EUR.
20. The highest frequency of districts with a predominance of commercial family farming is observed in the Republic of Bashkorostan (48 out of 55 districts), in Altay Kray (43 out of 61), Saratov Oblast (35 out of 39), Krasnoyask Kray (30 out of 32), the Republic of Tatarstan (25 out of 44), Tyumen Oblast (25 out of 34) and Astrakhan Oblast (11 out of 12).
21. The highest frequency of districts with predominantly capitalist and large capitalist farming is observed in Krasnodar Kray (31 out of 44 districts), Belgorod Oblast (19 out of 22), Kursk Oblast (23 out of 29), Kirov Oblast (25 out of 40), Stavropol' Kray (19 out of 27) and Rostov Oblast (21 out of 44).
22. Household plots and peasant farms produced about 77% of potatoes, 63% of other vegetables, 69% of fruits and berries, 78% of meat (by live weight, including poultry) and 50% of meat in 2017 (National Report, 2018). The importance of dairy cooperatives in the USA is well known, but it may be instructive to note that, according to Golovina and Nilsson (2009), all operating cooperatives in the Kurgan region in South-Western Siberia deal with dairy farmers.
23. More detailed recommendations for encouraging the development of cooperatives in CIS, including Russia, can be found in Lerman (2012, 2013).

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