JAMES Y. SIMMS, JR.

The Crop Failure of 1891: Soil Exhaustion, Technological Backwardness, and Russia’s “Agrarian Crisis”

Russian peasant farming techniques in the last decades of the nineteenth century are generally considered to have been technologically backward. What student of Russian history has not read about the dire effects of the three field system of agriculture, the lack of fertilizer, and the inadequate wooden plow used predominantly by Russian peasants? The low productivity of the peasant is traditionally attributed to these backward methods, which in turn are seen as contributors to the exhaustion of the land and consequently the impoverishment of the Russian peasantry. As the land became exhausted, peasants could not maintain their standard of living or meet an increasing tax burden.¹ Technological backwardness and soil exhaustion are thus important indexes for the “crisis hypothesis,” which states that the economic well-being of the Russian peasantry was deteriorating as the nineteenth century came to a close.² An investigation into the causes of the crop failure of 1891³ and the quality of the Russian harvest after the crop failure and famine of 1891–92, however, clearly suggests that: (1) soil moisture was the critical determinant of harvest quality; (2) peasant methods were not unambiguously “backward,” given the climate and soil conditions in much of the black earth district and the grainlands in general, and may even have been appropriate; and (3) Russian farmland was not becoming exhausted, particularly in the so-called hunger provinces of the central black earth district. Quite simply, the vicissitudes of weather determined the harvest in tsarist Russia.

I would like to express my deep appreciation to Professors Richard G. Robbins and Frederick Carstensen whose critical comments sharpened the focus of this article and in general enhanced the quality of the presentation.


² For a discussion of the “crisis” in Russian agriculture which occurred at the end of the nineteenth century, see James Y. Simms, Jr., “The Crisis in Russian Agriculture at the End of the Nineteenth Century: A Different View,” Slavic Review, 36, no. 3 (September 1977): 377–98. In this article indexes used to substantiate the existence of the crisis such as the tax burden, redemption arrears, decline in grain prices, and the relationship of the size of the harvest to the population are examined and shown to be fallacious.

³ I want to emphasize that my concern is with the cause of the crop failure of 1891 and not with the famine that followed the crop failure. The causes of a crop failure are often quite distinct from the causes of a famine. If, for example, there are sufficient reserves in a country or if access to food reserves exists, a famine does not necessarily follow from a crop failure.
In the context of the history of Russian agriculture in general, the crop failure and subsequent famine of 1891–92 are extremely important. The enormity of the physical tragedy is beyond question, especially in terms of the size of the harvest. In 1891, the harvest of all cereals was nearly 25 percent lower than the average harvest for the period 1883–87. Harvest of the two principal cereals, rye and wheat, were respectively 63 percent and 79 percent of a normal year. Within the famine district itself, the deficit in the harvest of cereals between 1891 and 1890 approached 50 percent. The rye and wheat harvests in the famine district were respectively 45.6 percent and 55.3 percent less than the average harvest of those cereals for the years 1883–87. The area stricken by crop failure and famine, situated on both shores of the Volga, was extensive, embracing approximately seventeen provinces of the central black earth district — an area double the size of France or equal to the entire American Midwest, from Ohio to North Dakota. Of the thirty-five million people living in the stricken area, nearly thirteen million received some form of government aid. The situation in the famine district was considered so serious that the government not only dispensed aid to the suffering people, but even took the drastic step of prohibiting the exportation of cereals from Russia from the fall of 1891 to the spring of 1892. Indeed, the famine of 1891–92 was so disruptive that it helped revive the opposition movement, dormant since the early 1880s.

The crop failure and famine of 1891 are therefore equally important for their perceived role in the “agrarian crisis.” As one modern historian has noted, “what made the gloomy view of agrarian conditions a popular stereotype was the

4. M. E. Levasseur, La Récolte de 1891 en Russie (Paris: Chamerot and Renouard, 1891), p. 27; this was a report to the National Society of Agriculture of France, December 23, 1891. [A. S. Ermolov], Neurozhi i narodnoe bedstvie (St. Petersburg, 1892), pp. 15–16.

5. U.S., Congress, House of Representatives, House Miscellaneous Documents, 52nd Cong., 1st sess., 1891–92, “Grain Crops of the World,” vol. 37, p. 163. For similar data, see Levasseur, La Récolte, p. 27 and [Ermolov], Neurozhi, pp. 15–16.

6. Levasseur, La Récolte, p. 38; [Ermolov], Neurozhi, pp. 18–19.


crop failure and catastrophic famine of 1891. The articulate political Left in Russia used this gloomy picture to advantage in its criticism of the imperial regime. The discussion by liberals of the causes of the crop failure and the transformation of the crop failure into a famine, for example, reflects in part their fundamental bias against the tsarist government. When liberals and radicals, such as Plehanov and Karshev, blamed the crop failure on peasant backwardness, they were implicitly, if not explicitly, blaming the crop failure on governmental policies. S. Stepiak’s coverage of the famine in Free Russia and the commentaries in Russkoe bogatstvo and Vestnik Evropy are similarly slanted. The articulate Left was obsessed with the tragic events of 1891, which is perhaps “the most frequently mentioned date in Legal Populist literature.”

To the detriment of their political analyses, Marxists, Populists, and liberals of all persuasions were unable to overcome their overt political biases in assessing the causes, results, and consequences of the crop failure and famine of 1891–92.

As the conservative press pointed out, a crop failure “always produces a harvest of liberal chatter.” Unquestionably, bad weather — a dry autumn in 1890, severe frosts, very little snowfall in the winter to protect the crops, and an unusually long drought in the spring and summer of 1891 — was the immediate cause of the crop failure. However, many observers, particularly within the liberal community, argued that the crop failure was not due solely to adverse weather conditions. They suggested that backward technology and soil exhaustion also played a role in causing the crop failure.

One of the most important leftist analysts of the causes of the crop failure was G. V. Plehanov, who placed special emphasis on the economic and social backwardness of Russia as the main element in bringing about the tragedy of 1891. In the first of two essays devoted to the crop failure and famine of 1891, Plehanov placed the blame for the crop failure on soil exhaustion due to backward farming techniques.

In his second essay in 1892, he excluded the


12. See the comments by Stepiak as the editor of Free Russia, June-December 1891 and January-December 1892; see also the materials relating to the famine in Russkoe bogatstvo, June-December 1891 and January-June 1892 and in Vestnik Evropy, June-December 1891 and January-December 1892.


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climatic factor as a cause of the crop failure and stressed the absence of fertilizer and the resulting deterioration in the productivity of the soil. Russia’s salvation was not a better climate, argued Plekhanov, but “the introduction of better agricultural techniques.” Rather than improving in technique, Russian agricultural methods had worsened, and the peasant was being ruined. According to Plekhanov, crop failure had become the custom in Russia, “the necessary consequence of the methods of working the land.” Infrequent good harvests, which were the result of accidental atmospheric conditions, had only delayed the disaster which finally occurred in 1891.

Vladimir Solov’ev also questioned whether the tragedy of 1891 was a chance happening. Like Plekhanov, he concluded that, on the contrary, crop failure was becoming the norm and that good harvest years, such as that of 1888, were the exception. From the beginning of the 1880s, Solov’ev argued, a number of writers had shown that if Russian agriculture continued to evolve as it had in the past, Russia would be transformed into a desert. Russia’s primitive economy had exhausted the soil, and that was the cause of the country’s tragedy. Russia needed to introduce better farming techniques to prevent such tragedies in the future.

The belief expressed by both Solov’ev and Plekhanov, that the gradual decline in peasant husbandry and the exhaustion of soil were significant factors in causing the crop failure, was not unique to them. The Populist N. A. Karyshev argued that the crop failure of 1891 was only partly caused by a natural phenomenon. Karyshev stressed social and economic factors, such as land renting, exhaustion of soil, and general backwardness of peasant farming, as causes for the crop failure of 1891. Some Western observers of the Russian scene joined Ambassador Charles E. Smith from the United States in blaming the crop failure on socioeconomic factors, the primitive and “unthrifty” methods of farming, for example, as well as the drought.

Modern scholars also tend to emphasize factors other than climate in assessing crop failures and famines, and for some modern observers, the crop failure and famine of 1891–92, typifying and illuminating conditions in the countryside, are integral components of the crisis hypothesis. Although not

19. Ibid.
20. Ibid.
22. Ibid., p. 784.
specifically describing the crop failure of 1891, the Soviet economist and historian P. A. Khromov, for example, argued that “frequent crop failures are not only a consequence of unfavorable natural conditions. The causes of systematic crop failures lie in the character of the social structure. Crop failures led to famines. Famines were part of those economic contradictions which Russia experienced after the reform of 1861.” 27 Similarly, Nicholas Riasanovsky stressed the backwardness of Russian agriculture, which resulted in the exhaustion of the land and the peasant and which thereby made possible the transformation of a drought into a disaster such as occurred in 1891. 28

The controversy over the causes of the crop failure of 1891 is probably best exemplified in the discussion of the question held by the Imperial Free Economic Society in November 1891. The debate presented the opinions of scholars as well as large landholders and provides some interesting insights on the issue. As outlined by the chairman, the session was, among other things, to ascertain the causes of the crop failure of 1891, particularly to decide whether it was due solely to meteorological or technological factors, and to determine whether the crop failure struck the farms of both landowners and peasants. 29 Fourteen members of the society spoke on the issue, and as the discussion progressed, a definite clash of opinion developed. Predictably, a few of the speakers stressed poor technology as the critical factor in bringing about the poor harvest and famine. Of those who ventured an opinion on the causes of the crop failure, however, a clear majority argued that the meteorological disaster was so great in 1890 and 1891 that it superseded any consideration of technology as a factor in the crop failure. The system, technological backwardness, and soil exhaustion were not to blame for the crop failure. Weather alone was the culprit. 30

Those who espoused the climate as the only factor in the poor harvest of 1891 based their argument on the proposition that modern technology had no effect in determining the crop yield. Among the speakers who stressed climate over technology was A. S. Ermolov, who argued: “In this context I must repeat what was already said by others, that is, that this year no efforts by the farmer, no kind of technical improvement, no kind of treatment and fertilization of the soil would have made any noticeable difference in the localities stricken by the crop failure.” 31 Estate owners repeatedly stressed that regardless of the level of technology, the drought was so severe that it ruined the harvest. N. A. Khvorostov, for example, pointed out that although his fields were deep-plowed with a steel plow, his crops failed as badly as those of the peasants. Even fertilization made no difference. 32 “The drought and the March frosts leveled everyone.” 33

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30. Admittedly, the society’s debate included only a few people, but it is evidence that there were those who argued that climate was the sole factor in causing the crop failure. Of the ten discussants who ventured an opinion, seven were clearly disposed or leaned toward meteorological factors, while three argued that technology made a difference. See ibid., pp. 67–106.
31. Ibid., p. 85. Ermolov amplifies this view in his monograph on the causes and impact of the famine. He is very emphatic that the harvest of 1891 depended entirely upon meteorological conditions ([Ermolov], Neorozhai, pp. 21, 22, 38, 40, 56).
32. “Beseda I,” p. 76.
33. Ibid., p. 101.
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In support of this argument, it was pointed out that in the areas of the famine district that received rain, the harvest was very good. In the words of I. I. Shidlovskii:

The present crop failure cannot be charged to anything other than the drought with which this year was afflicted. There are many proofs of that. No kind of culture, no kind of improved soil treatment, could help; everything led to one result — complete crop failure. True, in this total crop failure, we do come across some harvest oases, but they cannot be credited to better culture. They appear to be entirely accidental manifestations; where with lack of good culture, it would seem that the worst possible result could be expected, the harvest in reality was good and this was because in those places, rain fell in time. Therefore, in 1891 crop failure cannot be charged to any kind of imperfections in our culture.

An extraordinary sequence of unfavorable climatic conditions combined to cause the crop failure of 1891. The drought in 1891, designated an exceptionally cruel drought even by Soviet scholars, was itself sufficient to cause a major crop failure. A number of provinces in the famine district endured extremely long periods without rain. According to Ermolov’s study of the famine, the officially recorded period of drought in the following cities was as follows: Khar’kov, 53 days; Kozlov, 64 days; Kazan’, 79 days; and Tsaritsyn, 96 days. Over June, July, and August, the southeastern part of European Russia had 40 percent less rainfall than normal; eastern Russia had 38 percent less rainfall. In addition, the adverse weather of the fall and winter of 1890–91 greatly increased the detrimental impact of the summer drought. The size of the area stricken by drought, the damage to the harvest, and the physical difficulty of sending aid to regions stricken in the winter of 1891–92 contributed to the development of a famine. Under these conditions, the use of good or bad technology was probably irrelevant in bringing about the crop failure and subsequent famine.

The crop failure of 1891 should be viewed not as a unique event, but as part of a constantly recurring phenomenon that is visited upon Russia as a result of drought. Indeed, from 1865 to 1965 every major crop failure in Russia was

34. Ibid., pp. 72, 74; see also [Ermolov], Neurozhai, pp. 8, 9, 10.
35. “Beseda I,” p. 88. In fairness to the proponents of the meteorological argument, it should be acknowledged that they claimed that climate was decisive only for the harvest of 1891. At least some of them agreed that the level of technology would make a difference in the harvest in normal years (ibid., pp. 85, 88, 102).
36. It is my opinion that the tsarist government, at least the Ministry of Finance, also felt that weather was the single most important determinant of the harvest. See James Y. Simms, Jr., “The Impact of the Russian Famine of 1891–92: A New Perspective” (Ph.D. diss., University of Michigan, 1976), pp. 226–29.
37. See S. A. Delinkaitis, Zasukha i bor’ba s nei (Moscow, 1949), p. 8.
38. [Ermolov], Neurozhai, pp. 9, 10.
39. V. G. Rotmistrov points out the grave effects of a cold spring and late thaw for the retention of moisture in the soil (The Nature of Drought [Odessa, 1913], p. 8).
40. Readers who remain skeptical should examine the impact of drought and high temperature upon the harvest of the United States over the past few years. Harsh weather conditions take precedence over the most advanced technology.
caused primarily by drought. One study made by a Western scholar concluded that between the years 1885 and 1954, droughts in the central black earth region occurred approximately every five to ten years. In fact, bad harvests occurred in 1884, 1891–92, 1897–98, 1906, and 1920–21, roughly every five to ten years. Drought, associated with these crop failures, caused famine in 1873–74, 1891–92, 1906, and 1920. Even within the era of the modern Soviet state, drought has played a decisive role in agriculture. The virgin land campaign of Nikita Khrushchev, for example, was destroyed by meteorological factors, in particular the drought of 1963. As recently as the spring of 1972, the Soviets experienced an extensive crop failure, which brought about the well-known “wheat deal” with the United States in 1973. The Soviets obviously have the technical ability requisite for modern agriculture, yet drought has emerged supreme over all factors, as it did in 1891.

The argument that factors other than weather brought on the crop failure and famine is further weakened by the fact that crop failure only affected a given number of districts of European Russia at a given time. Agricultural techniques, it should be remembered, were relatively standard among the peasants. Thus, if the soil had been exhausted through exploitative and backward methods, all of Russia should have experienced crop failure at approximately the same time. This was not the case, however, and bordering provinces often had completely opposite harvest results. The crop failure of 1873–74 in the central black earth region provides an excellent illustration. The left bank of the Volga experienced a terrible crop failure precipitated by a drought and centered in the province of Samara. Yet the right bank of the Volga, in particular the province of Saratov, had an abundant harvest. Nevertheless, some observers argued that the crop failure was a result of complex economic factors, such as excessive taxation and rent rapaciously, which in general caused exhaustion of the soil. If this is correct, then why did Saratov have a good harvest in that year? Surely, it was not because the complex economic conditions were vastly different in Saratov than

in Samara. On the contrary, it would seem that the unpredictability of the weather was the real culprit. One area received rain in sufficient quantities and had an excellent harvest; the other area had neither. Thus, serious fluctuations in the harvest in Russia seem to be explainable solely in terms of the perverseness of the weather.

The identification of drought as the single cause of the crop failure of 1891 and other crop failures in the period has significant implications for the hypotheses about soil exhaustion and technological backwardness that pervade scholarly perceptions of peasant husbandry in the late nineteenth century. Although scholars maintain that backward techniques and government policies forced the peasant to exhaust himself and the land, there is little or no direct evidence to prove that Russian farmland in the main and in the famine district in particular was exhausted or becoming exhausted. Nor is direct evidence presented to prove that peasant techniques were exhausting the soil. The argument is essentially assertive.

There is hard evidence, however, to show that the grainlands of Russia were not becoming exhausted. In fact, Russian farmland was yielding excellent harvests in the last decades of the nineteenth century and especially in the years immediately following the famine, that is, from 1893 to 1896. The harvests in 1893, 1894, and 1895 constitute the best three-year harvest period in the entire century. The following data reveal the dramatic increase in the total grain harvest after the famine: the total grain harvest for 1890 was 292.3 million chetverts; 1891—228.8 million chetverts; 1892—265.8 million chetverts; 1893—377.5 million chetverts; 1894—380.3 million chetverts; and 1895—347.4 million chetverts. Table 1 presents more extensive data on this point.

Since frequent references are made to the pauperization of the center, it is important to point out that in this region as well, Russian farmland was not becoming exhausted. On the contrary, within two years of the crop failure, harvests in the black earth and middle Volga regions were, by and large, better than normal. The data in Table 2 are illustrative.

The area under cultivation expanded from 1861 to 1913, which accounts for some of the increase in production. But a true increase in output per unit of approximately 1 percent per year did take place. Geroid T. Robinson has

49. In relation to the average harvest of rye for the period 1870-82, the harvest of 1873 in Samara was 46 percent of the norm and in Saratov, 109 percent. The harvest of rye in Samara for 1874 was 205 percent of the norm. One wonders why that figure did not get as much attention as the poor harvest figure. See N. Annenskii, “Prilozenie,” in Vliianie urozhai i khlebnykh tsen na nekotoria storony ruskogo narodnogo khoziaistva, ed. A. I. Chuprov and A. S. Posnikov, 2 vols. (St. Petersburg, 1897), 2:18.

50. For example, see Riasanovsky, A History, p. 478; Volin, A Century of Russian Agriculture, p. 61; Robbins, Famine, p. 10, who argue that peasant farmland was exhausted.


Table 1. Indexes of Production of Wheat, Rye, Oats, and Barley, 1870–1900 (1896–1900 = 100)

<table>
<thead>
<tr>
<th>Year</th>
<th>Major Grains</th>
<th>Year</th>
<th>Major Grains</th>
<th>Year</th>
<th>Major Grains</th>
<th>Year</th>
<th>Major Grains</th>
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</thead>
<tbody>
<tr>
<td>1870</td>
<td>74.3</td>
<td>1878</td>
<td>75.7</td>
<td>1886</td>
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<td>1894</td>
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<td>1871</td>
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<td>1879</td>
<td>64.7</td>
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<td>1895</td>
<td>100.0</td>
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<tr>
<td>1872</td>
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<td>1880</td>
<td>60.4</td>
<td>1888</td>
<td>89.3</td>
<td>1896</td>
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<tr>
<td>1873</td>
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<td>75.7</td>
<td>1891</td>
<td>62.7</td>
<td>1899</td>
<td>110.9</td>
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<td>1876</td>
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<td>1884</td>
<td>83.6</td>
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<td>1877</td>
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<td>71.6</td>
<td>1893</td>
<td>106.4</td>
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shown that the yield from peasant land increased from twenty-nine poods per desiatina (1861–70) to thirty-nine poods per desiatina (1891–1900). In addition, the rate of agricultural growth accelerated greatly in the mid-1880s, which would hardly be the case if Russian farmland was becoming exhausted. And while Russian peasant productivity lagged behind that of Western Europe, so did the productivity of the United States. The average yield per acre in wheat for the period 1878–1902 was 8.8 bushels in Russia, 13.9 bushels in the United States, and 35.4 bushels in the United Kingdom. Yet one never reads of the relative backwardness of American wheat farmers.

It is therefore difficult to believe that Russian grainlands were becoming exhausted or that soil exhaustion and poor technology played a major role in the crop failures plaguing Russia in the last decades of the tsar. After all, the techniques that supposedly brought crop failure also brought the tremendous harvests of the mid-1890s and subsequent years. While better techniques would have obviously brought larger harvests, the level of technique was more than adequate to produce enough grain for home use, as well as huge surpluses for export. The excellent harvests within a year or two of the famine, the best in Russia in the nineteenth century, would have been impossible if the soil had in fact been exhausted.

If Russian farmland in general was not being exhausted and instead showed an increase in output per unit, then peasant agricultural practices — even in the middle Volga provinces — may not have been unsuitable or as backward and detrimental as alleged. Although it conflicts with one of the basic tenets of the study of Russian history, it is my contention that the level of technology in Russian agriculture was relatively unimportant and that the availability of moisture was more critical to the harvest. This is also the view of A. S. Ermolov, who wrote an extensive study of the famine and crop failure of 1891, arguing that in the famine district — essentially the black earth zone — weather transcended...

54. Robinson, Rural Russia under the Old Regime, p. 98; see also Florinsky, The End of the Russian Empire, p. 184, who gives similar data.
57. To confirm my interpretation, I discussed this question with professor of agronomy George W. Hawkins and Stacy Gettier, the supervisor of the Soil Testing and Plant Analysis Laboratory, both of the Virginia Polytechnic Institute and State University. Professor Hawkins and Mr. Gettier agreed that the excellent harvests of the years 1893–96 could not have been produced on exhausted soil.
Table 2. *Indexes of Fluctuations in the Harvest of Major Cereals, 1890–1893 (1883–1893 = 100)*

<table>
<thead>
<tr>
<th></th>
<th>RYE</th>
<th>WINTER WHEAT</th>
<th>SPRING WHEAT</th>
<th>OATS</th>
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<tr>
<td></td>
<td>1890</td>
<td>1891</td>
<td>1892</td>
<td>1893</td>
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<tr>
<td>Middle Black Earth</td>
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</tr>
<tr>
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<td>25</td>
<td>49</td>
<td>122</td>
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<tr>
<td>Khar'kov</td>
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<td>67</td>
<td>58</td>
<td>142</td>
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<td>Poltava</td>
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<tr>
<td>Northern Black Earth</td>
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<tr>
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<td>111</td>
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<tr>
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<td>71</td>
<td>97</td>
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<tr>
<td>Tambov&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>Penza&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>96</td>
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<td>South and South East</td>
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<td>Orenburg&lt;sup&gt;a&lt;/sup&gt;</td>
<td>48</td>
<td>48</td>
<td>170</td>
<td>111</td>
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</table>

<sup>a</sup> Provinces included in the famine district of 1891–92.

technology. Water, according to Ermolov, was the overwhelmingly significant ingredient in a successful harvest. Since moisture was critical, Russian agriculture depended on a husbandry that maintained as much moisture in the soil as possible or enabled the peasant to cope with the scarcity of moisture. An analysis of the "backward" practices of the Russian peasant clearly supports the view that peasant methodology, whether by commission or omission, was in fact appropriate for an agricultural climate plagued by a shortage of moisture.

Arguments over the primitive condition of Russian agriculture generally focus on the supposedly inadequate use of fertilizer and suitable seed, the three field system of crop rotation, and the use of the wooden plow (sokha). The sokha produced a shallow furrow in comparison with that of the steel plow, which was used in the West. Robinson noted that even in 1917 more than half of the peasants "still broke and stirred the surface of the soil with the Sokha (a primitive horse-drawn implement . . . ), instead of turning the soil upside-down to a reasonable depth with the curving blade of a modern plowshare." Similarly, Petr Liashchenko pointed out that the sokha was unsuitable for the steppes of Russia because the soil in this region required deep plowing.

But the argument concerning the viability of the sokha is not as clear-cut as it would seem. In the discussions of the Imperial Free Economic Society in 1891, for example, there were those who argued that the implement was an adequate tool for farming. N. A. Khvostov, among others, described the wooden plow as an acceptable tool for peasant use, although he admitted that it was unsuitable for the landlord's land. The wooden plow required more effort than the steel plow and thus was inappropriate for use by hired workers who would not be as careful in plowing someone else's land as their own. The use of the steel plow by the landlords was thus predicated on convenience rather than on its ability to produce a higher yield. Khvostov and, in his opinion, the majority of the landlords of the central black earth district held the view that the steel plow did not produce a better harvest than the wooden plow.

The wooden plow was deemed inadequate because it could not produce a deep furrow, one hallmark of the modern plow. Yet a shallow furrow was not necessarily a negative feature in the soil conditions of the central black earth district. Khvostov pointed out that for winter crops in particular a deep furrow was unnecessary, and the wooden plow would give the same results as the steel plow. Khvostov even offered examples of how deep plowing with a steel plow by some estate owners had had disastrous effects on the harvests. In addition, shallow plowing helped to preserve soil moisture, by exposing less subsoil to the air (a very important consideration in the dry steppe regions), and had no

58. [Ermolov], *Neurozhai*, pp. 41, 56. This is also the opinion of Professor Hawkins and Mr. Gettier of the Virginia Polytechnic Institute and State University. A. F. Gustafson states that "although some soils may be low in plant food, the supply of moisture usually limits crop yields in dry farming" (Using and Managing Soils [New York: McGraw-Hill, 1948], p. 106).


64. "Beseda II," p. 132.
adverse effect on the planting of winter rye, the principal grain of the peasant.\textsuperscript{65} As one modern scholar has stated: "Deep plowing is not an essential practice for good soil management or good soil productivity."\textsuperscript{66}

Khvostov pointed out several other advantages the wooden plow held for the peasant. The \textit{sokha} was a multipurpose instrument that was virtually irreplaceable for peasant husbandry. The peasant could both plow and dig potatoes with it.\textsuperscript{67} In Khvostov's opinion, it was the best tool for embedding the seeds: "I would burn up my drill seeders and do the embedding with a wooden plow if I could be assured that the work with the wooden plow would be done on time as it should be."\textsuperscript{68} Khvostov was not the only observer of the famine and member of the Imperial Free Economic Society to suggest that the wooden plow was actually superior as a planter of seeds to the new seed drills. Seed drills apparently constituted something of a menace in an environment with unfavorable climatic conditions, because the machines placed all the seeds at the same depth. When the weather was bad, an entire harvest could be lost. On the other hand, according to L. N. Shishkov, seeds planted with wooden implements were sown unevenly, and "subsequently, while some [of the seeds] under unfavorable conditions may perish, others may survive. But with seed drills, all seeds would perish."\textsuperscript{69}

Another aspect of the backwardness thesis has to do with the choice of seed used by the peasant. At least some of the contemporaries of the famine were concerned that the peasants were not using the most up-to-date seeds, especially Western European varieties.\textsuperscript{70} For example, Nikolai-on discussed efforts of the agronomists to introduce better types of winter and spring seed.\textsuperscript{71} But more "modern" and Western rye and wheat seeds were less adaptable to the arid conditions in the grain growing regions of Russia, and they often failed to produce an acceptable harvest.\textsuperscript{72} The peasant's native rye seed suited the Russian climate because it could withstand cold weather and do relatively well with little precipitation,\textsuperscript{73} and the variety of hard winter wheat grown in Russia was marvelously adapted to a cold, arid climate. It is ironic that Russian agriculture, which has been compared so negatively with agricultural husbandry in nineteenth-century America, was the source of the famous "Turkey Red"

\textsuperscript{65} Eugene D. Vinogradoff, “The ‘Invisible Hand’ and the Russian Peasant,” \textit{Peasant Studies Newsletter}, 4 (July 1975): 10; see also Rotmistrov, \textit{Nature of Drought}, p. 9, who says that deep plowing had very little significance to the battle against drought or to the retention of moisture in the soil. The view is supported by both Professor Hawkins and Mr. Gettier of the Virginia Polytechnic Institute and State University.

\textsuperscript{66} A statement made by Professor Hawkins in a conversation with me.

\textsuperscript{67} "Beseda I," p. 102; "Beseda II," p. 133.

\textsuperscript{68} "Beseda I," p. 102.

\textsuperscript{69} Ibid., p. 88. Nonetheless, peasants were buying more and more steel plows (which, by the way, indicates growing prosperity) in part because of the propaganda arguing for the superiority of the steel plow over the \textit{sokha} and the ease of plowing with the steel as compared to the wooden plow. "‘You are going off to a factory,’ a wife says to her husband, ‘then buy a steel plow, because I will not plow with a wooden one.’" ("Beseda II," p. 136).


\textsuperscript{71} Nikolai-on, "Nechto ob usloviakh nashego khoziaistvennago razvitija," \textit{Russkoe bogatstvo}, 1894, no. 6, p. 118. One of the noted nineteenth-century authorities, A. Shiskin, also favored using improved seeds to counter the arid conditions in Russia (Rotmistrov, \textit{Nature of Drought}, p. 4).

\textsuperscript{72} "Beseda I," pp. 80, 88, 89, 91.

\textsuperscript{73} Vinogradoff, "The ‘Invisible Hand,’" p. 10.
wheat that helped transform Kansas and Nebraska into major wheat-growing areas in the 1870s. Traditionall, the introduction of "Turkey Red" to the American Midwest is credited to the Russian Mennonites, many of whom left Russia and settled in Kansas in the last half of the nineteenth century. According to an American authority, durum wheat from Russia is "a good producer in... dry areas for many years." The absence of proper fertilization, especially in the central black earth district, is another point in the backwardness argument. Again, this issue is not as clear-cut as it would seem. Observations made at the experiment station in Odessa at the turn of the century suggest that manuring black earth fields, which were in constant short supply of water, might have had negative results and actually lowered productivity. The fertilizer may have increased the early growth of the crop to such a degree that too little moisture remained in the ground to ensure the maturation of the plants. The absence of fertilizer, particularly the natural sort, therefore, did not necessarily have an adverse effect on the productivity of peasant farms.

The main criticism of Russian agriculture in the late nineteenth century was of the three field system — especially the practice of leaving one field fallow — a form of husbandry that Petr Liashchenko termed "very backward and irrational" and which became the prevalent system of agriculture throughout Russia after 1861. Robinson considered the three field system primitive and noted that even as late as 1903, 32 percent of the plowland allotted to the peasants was annually left fallow. The use of the three field system is particularly important in the discussion of the famine of 1891 and the backwardness of Russian agriculture because this system was practiced extensively in the central black earth region — the area of the famine. The three field system lacks sophistication, especially in the context of Western agriculture, but it has at least one excellent attribute, particularly if water is the most important factor in producing a successful harvest. Leaving a field in bare fallow for one year greatly increases

76. Gustafson, Using and Managing Soils, p. 102.
77. Rotmistrov, Nature of Drought, p. 9. Professor Hawkins of the Virginia Polytechnic Institute and State University maintains that the use of manure on black soil will not increase productivity.
78. Gustafson, Using and Managing Soils, p. 106.
81. Robinson, Rural Russia under the Old Regime, p. 98; Wren, Course of Russian History, p. 540.
the amount of moisture in a given field and thus enhances the productivity of the soil. In fact, V. G. Rotmistrov, a turn-of-the-century Russian agronomist, argued that "such a large reserve of water [remains] in the soil after clean bare fallow" that the system "assures the winter crop even in a dry season."82 This would not, however, be the case if fields were left fallow for several years, because they then would lose moisture rather than retain it.83 Even in the United States, leaving land fallow is considered one of the best methods of retaining moisture and improving crop yields. As J. H. Stallings states: "For any single crop year, wheat after a year of fallow consistently outyielded wheat planted year after year."84 In fact, in dry farming areas of twentieth-century America, fallowing was considered an insurance against the total failure of the harvest.85 Soviet authorities likewise recognized that fallowing part of the fields used for planting grain retained more moisture than not fallowing.86

Thus, it seems that peasant husbandry was not as inappropriate or backward as is supposed, given the standards of the 1890s. Ermolov suggested this conclusion in his study of the famine when he pointed out that the so-called West European agrarian techniques were frequently not suitable for Russia:

Our agricultural science is based almost completely on the works, experience and investigations of foreign scientists who work under entirely different conditions and who did not and could not take into consideration the specific demands and needs of our agriculture. That is why there exists, in the eyes of the majority of our farmers, a deep division between agrarian science and practical agriculture. That is why frequent mistakes occur, and why farmers get disappointed when trying out new and sometimes quite accomplished methods of agricultural technology, that however do not apply to our circumstances.87

This view becomes the more persuasive in conjunction with the abundant evidence that the black earth zone — in which much of the famine district was located — was not farmed to exhaustion and that the presence of moisture is the critical factor in Russian agriculture.

My purpose has been to challenge the traditional view that peasant agriculture in the last decades of tsarism was plagued by backward techniques and soil exhaustion and to delineate more precisely the causes of the great crop failure of 1891. The evidence presented shows that the great crop failure of 1891 was

83. Ibid., pp. 31, 35. Rotmistrov was not arguing that the three field system was the best system of crop rotation. In fact, he suggested a four field system — including bare fallow — as a better system for fighting droughts (ibid., pp. 38–42, 45). In addition, he was against continuous planting of cereals which he argued was detrimental to the retention of moisture (ibid., pp. 40–45).
86. Delinikaitis, *Zasukha*, p. 15. While favoring fallow over non-fallow practices, Delinikaitis sought the solution for the drought problem in planting more trees and implementing a grass crop-rotation system.
87. [Ermolov], *Neurozhai*, p. 64.
caused exclusively by bad weather — particularly drought. It would also appear that Russian farmland was not losing its productive capacity, even in the central black earth provinces, the area frequently cited as the exemplification of the “crisis” in peasant well-being. Although some of the land might have been exhausted, that was not the case in the main. Finally, peasant technology was not as detrimental to productivity as has been alleged and was in fact appropriate to the dry farming requirements of the Russian grainlands. These farming techniques were adequate to help produce the bumper crops of the mid-1890s. Thus, if a “crisis,” that is, a distinct decline in the relative well-being of the Russian peasantry in general, did exist in the agrarian sector in Russia at the end of the nineteenth century, it was not a decline predicated on soil exhaustion and technological backwardness.