THE SOCIOECONOMIC AND CULTURAL SIGNIFICANCE OF FOOD GARDENING IN THE VLADIMIR REGION OF RUSSIA

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by

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To Anastasia and to millions of Russian gardening families who are perpetuating the ancient tradition of living in union with Mother Earth.

“The Earth needs our help. Tenderness and a loving attitude give it strength. The Earth may be large, but it is most sensitive. And it feels the tender caress of even a single human hand. Oh, how it feels and anticipates this touch!

“There was a time in Russia when the Earth was deemed to belong to everyone and therefore nobody in particular. So people did not think of it as their own. Then changes came in Russia. They began giving out tiny private plots to people to go with their dachas.

“It was no coincidence at all that these plots were extremely small, too small to cultivate with mechanised equipment. But Russians, yearning for contact with the Earth, took to them with joyous enthusiasm. They went to people both poor and rich. Because nothing can break Man’s connection with the Earth!

“After obtaining their little plots of land, people intuitively felt their worth. And millions of pairs of human hands began touching the Earth with love. With their hands, you understand, not with mechanised tools, lots and lots of people touched the ground caressingly on these little plots. And the Earth felt this, it felt it very much. It felt the blessing touch of each individual hand upon it. And the Earth found new strength to carry on.”

— Vladimir Megré, *The Ringing Cedars of Russia*

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When I started researching the outwardly simple question of how and why the majority of Russian families were growing their own food, the project did not seem to promise any big discoveries. Indeed, I already knew that over 50% of Russia's agricultural output was coming from family garden-plots. That already sounded spectacular enough to overshadow any new findings I might come up with. However, the research did yield many results that — apart from their importance in the academic field — were also deeply transformative for me on both the professional and personal level. I thank my advisors for their guidance and support which made this experience and dissertation possible.

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THE SOCIOECONOMIC AND CULTURAL SIGNIFICANCE OF FOOD GARDENING IN THE VLADIMIR REGION OF RUSSIA

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ABSTRACT

Russia's family gardens currently produce over half of the country's agricultural output and represent a major sector of the country's economy, involving two thirds of the population. Despite this prominence, household gardening has been viewed as a recent phenomenon, an adjunct to the country's industrial agriculture, or a temporary response to the hardships of Russia's economic transition. However, this study of the current status of family agriculture, Russia's agrarian history, and the results of a 2006 survey of 1,500 families in the Vladimir region, show that gardens not only perform a wide range of economic, social, and cultural functions, but also represent a highly sustainable practice embedded in the region's — and the country's — environmental, socioeconomic, and cultural context.

The survey offers detailed information on the economic, agricultural, social, and cultural dimensions of gardening in the Vladimir region, including respondents' adherence to a wide range of agrarian values. Based on the results, family gardening can be seen as a highly sustainable, diversified, and culturally important practice, which needs to be given due consideration by scholars and policy-makers.

CHAPTER 1

ANCIENT ROOTS, MODERN SHOOTS: RUSSIA'S FAMILY AGRICULTURE

Introduction

In many countries of the world — in climates both tropical and temperate and in nations both developing and industrially developed — food gardening makes important contributions to local, regional, and national economies (Kumar and Nair 2004; Wiersum 2004; Wojtkowski 1993). This is especially true about contemporary Russia, where 35 million families (approx. 66% of the country's households), both urbanites and rural residents, own small garden-plots, most of which are used for growing food for subsistence and for the market (Rosstat 2007b). In addition to collectively producing over 50% of Russia's total agricultural output, these gardeners realize many of the benefits of micro-scale food production. However, despite its prominence, Russia's food gardening practice is not given sufficient attention by either governmental bodies or many researchers. That being the case, this study will evaluate available evidence to determine the social, economic and cultural significance of this widespread practice, with a focus on the Vladimir region of central Russia.

Definition of key terms

Different terms are used to refer to food gardening in Russia. Some of these terms are interchangeable, while others are not. It is therefore important to carefully define them from the start.

Dacha. The term *dacha*, dating back to at least the eleventh century, has had a myriad of meanings from "a landed estate" to exurban residences of Russian cultural and political elite (Lovell 2003). From the 1940s on, with the emergence and rapid growth of food gardening by urban people, this term has been used ever more widely to denote a garden-plot of an urban dweller. It is in this contemporary meaning of a garden-plot (with a usual size of 600 m^2, or 0.15 ac), often with a simple dwelling on it, that the term *dacha* is used in this dissertation. We will refer to working this plot of land as "dacha gardening." *Dachnik* denotes a person owning (or using) a dacha. In Russian, the term *dachnik* is now used interchangeably with "gardener" (*sadovod*). Dacha settlements are often legally organized in *dacha cooperatives*, *dacha associations* or *gardening associations* responsible for creating settlement-wide infrastructure. In Russia, dacha plot cultivation has become such a widespread practice (with over 50% of all urban families in Russia using a dacha) that it is often referred to as a *dacha movement*. Note that the term *dacha* refers only to *urbanites'* garden-plots, and never refers to the garden-plots of rural residents. Note also that in Russia the majority of the urban population lives in apartment blocks and not in single-family homes with backyards — therefore the *dachas* are predominantly located outside city limits and require travel to get to.

Gardens and *allotments*. Two other forms of gardening by urbanites are *garden* (*sad* — from the root signifying *to plant*) and *allotment* (*ogorod* — from the root for *to fence*; mostly referring to a vegetable-garden). While *allotments* usually have no dwelling on them, the distinction between a *garden* and a *dacha* is now blurred and in many cases is more on paper than in the physical reality. This difference in names has historic roots: in the Soviet Union in the 1940s and 1950s, *dachas* were supposed to be reserved for recreation without agricultural production, while *gardens* had an agricultural function (Lovell 2003). Today,

however, the terms *garden* and *dacha* are often used interchangeably, with the exception of legal and statistical documents. For this reason, unless otherwise indicated, I will use the term *garden* in its generic sense to refer to a cultivated plot (*uchastok*) of either an urbanite or a villager (as opposed to the more formal usage of "garden" to refer to only urbanites' plots).

Subsidiary plot. "Dachas" ("gardens") and "allotments" are terms used to refer to plots of land with a garden belonging to an urbanite. The similar plot of land with a garden belonging to a rural resident is referred to as a *personal*, *private*, or *subsidiary plot* (*lichnoe podsobnoe khoziaistvo*). Unlike dachas, subsidiary plots usually have no dwelling on them, since they are either adjacent to (*priusadebnyi* = "next to the house") or in close proximity (*polevoi* = "in the field") to the owner's village house. Subsidiary plots are also larger in size, and can be up to 0.5 ha or larger depending on regional laws.

Food gardening is the generic term used to refer to dacha gardening by an urbanite and/or subsidiary plot cultivation by a villager. Other terms used in the same sense are *household/family agriculture* or *household/family gardening* (to highlight that this activity is practiced by individual households/families rather than agribusinesses), as well as *self-provisioning* (to highlight the fact that most of the agricultural produce is used for subsistence rather than for sale). This generic term is needed especially because official Russian statistics often make no distinction between dacha or subsidiary plot production (reporting an aggregate of production by both urban and rural population). Some of the basic characteristics of food gardening are: small plot size, manual cultivation by family members (no hired labor), and emphasis on subsistence growing. Because of the subsistence-orientation of family agriculture, the modest size of garden-plots and also the fact that it is most often a part time activity rather than main professional occupation, I avoided using the term

farming in reference to gardening, reserving the former to refer to commercial, mid- to large-scale agriculture.

Primary agriculture. In the macro-economic sense, I will sometimes refer to household gardening as *primary agriculture*, to designate that it is *primary* in the temporal sense (i.e., preceded the appearance of commercial agriculture by many centuries) and also *primary* in the sense of being the predominant sector of today's agriculture in Russia.

Kolkhoz (*kollektivnoe khoziaistvo*, "collective farm") and *sovkhoz* (*sovetskoe khoziaistvo*, "Soviet [or: state] farm") were two primary forms of collective agriculture's organization in the Soviet Union. On a collective farm (*kolkhoz*), workers, collectively, nominally owned their farm, sold their produce to the state and shared in the profits from the sale, while on a state-owned farm (*sovkhoz*), the farm was owned by the state, and farm workers were paid a salary, just as in a factory. In reality, however, in both cases the quantities and prices were dictated by the state and therefore both systems of management were fully under centralized control.

Contemporary Russian statistics and legislation separate agricultural producers into three categories. First, the *agricultural enterprises* (*sel'skokhoziaistvennye organizatsii*) are farms in the form of a legal entity such as corporation, limited liability company, etc. This group includes what we would call *corporate farms* (including the former *kolkhozes* and *sovkhozes*), as well as smaller producers (including family farmers who chose to operate not as a sole proprietorship, but as a company). According to the 2006 Census of Agriculture (Rosstat 2007a), the size of agricultural enterprises ranged from under 3 ha to over 10,000 ha, with an average size of 6,833 ha. Second, the *independent farmers* or *individual farmers* (literally, "peasant-farmer enterprise" — *krest'ianskoe (fermerskoe) khoziaistvo*) can be described as family farms operated as sole proprietorships. These farms are usually

much smaller than corporate farms — 77.5% of individual farmers have no more than 50 ha of land each. At the same time, this group also includes significantly larger operations, up to 10,000 ha in size and even larger. The average size of land holdings for individual farmers is 105 ha. Finally, the third category is *households* (*khoziaistva naselenia*), which includes subsistence-oriented family producers (both subsidiary plot cultivators in rural areas and "gardeners," or dachniks, from urban areas). The size of a subsidiary plot may range from under 0.05 ha to over 10 ha, with an average of 0.5 ha. The size of a garden is smaller, 0.07 ha on average. It should be noted that the distinction between the three groups is based on producers' *legal status*, rather than on the real nature of their activity. Therefore, the boundaries between the groups are blurred: there are very small, family-run "corporate" farms, and at the same time very large "individual (family) farmers" with industrial organization; there are "farmers" who grow mostly for subsistence and "gardeners" who produce for the market, etc.

Sotka (from the Russian word *sotnia*, "a hundred") is a land area measure most commonly used in reference to the size of garden-plots. 1 sotka = 100 square meters = 1/100 hectare. The standard size of dacha plots allocated during the Soviet period was so often equal to 6 sotkas (= 600 m^2) that in Russia the term "6 sotkas" (*shest' sotok*) is often used as a synonym for a "dacha" or "garden."

Ruble (also spelled *rouble*) is Russia's currency unit. During 2006–2007, the exchange rate was roughly between 25 and 27 rubles to one U.S. dollar.

Oblast, translatable as "region", is a territorial body which is a primary constituent (or "subject") of the Russian Federation. An *oblast* may be compared to a state in the USA or a province in Canada. An oblast (region) is divided into districts (*raion*).

In this dissertation, I use the Library of Congress style for transcribing Russian words and names (e.g., Chaianov rather than Chayanov or Chajanov), with the exception of such terms and proper names that have already been extensively used with a different spelling (e.g., Alexander rather than Aleksandr; Yeltsin rather than El'tsin).

Why study household agriculture?

Russia's household agriculture — possibly the most extensive in any industrially developed nation — suggests that in developed countries highly decentralized, small-scale food production is possible on a national scale. This practice therefore warrants close attention, since the degree of self-sufficiency in a number of food staples attained by Russian households points to the reemergence of a distinct, highly localized food regime, on a nation-scale level.

Benefits of family gardening are not limited to the production of foodstuffs per se; these practices contribute to environmental sustainability, community food security, promote social interaction among gardeners, boost local economies and serve as a means of maintaining the culturally important connection to plants, local landscapes and the Earth.

Food gardening in Russia is rooted in a centuries-old tradition of self-reliant living on the land. From deep antiquity to the peasant economy of tsarist Russia to the present-day agriculture, the greatest contribution to the food economy of the nation has been made not by large, modern, industrial, corporate or state-run, commodity-market-oriented crop producers (such as collective farms during the Soviet period), but by millions of small-scale, traditional, machinery-free, family-operated producers growing primarily for subsistence (Chaianov 1925). Today, these growers are referred to as subsidiary plot cultivators in rural areas and *dacha* gardeners in peri-urban areas.

The Russian self-provisioning phenomenon, especially the subsidiary plot cultivation by rural residents, has been recognized as an important part of the country's agriculture and studied for several decades (Wadekin 1973; Hedlund 1989). As early as in 1973, Wadekin was already describing the backbone of Soviet agriculture as "fifty million small-scale producers" (1973:81) — but *dacha* gardening has been rarely even mentioned in agrarian reform debates and generally ignored by both agricultural policy-makers and by most scholars. Despite the prominence of food gardening, it has largely been viewed only as a mere addition to the nation's industrial agriculture.

Instead, great attention has been laid on the "modern" sector of agriculture, including large-scale grain production, industrial crops (such as flax) or confinement livestock operations — as if those represented *the whole of* agriculture. This bias is largely due to decades of modernization and industrialization philosophies being applied to agriculture and to the fact that historically the production of grains and flax provided the bulk of *cash crops* and *export commodities* — and was therefore of greater importance to the state than subsistence-oriented food gardening. Indeed, the conflict between the tradition of self-provisioning and the requirements of the state has a history that can be traced back for at least a thousand years.

When the industrial, heavily subsidized, large-scale agriculture experienced a sharp decline in the early 1990s but no famine ensued, researchers turned more attention to food gardening. Even though several attempts to explain Russian food gardening practices as only a survival strategy during the times of economic hardship have failed (Clarke et al. 1999), up to the present day researchers have primarily focused on the economic significance of household agriculture and the political and legal frameworks that enabled this small-scale private production even under the Soviet regime.

Recently, it has been increasingly recognized that subsistence growing in Russia, apart from its economic and social importance, has deep historic roots that go back to the peasant economy (Seeth et al. 1998) and that present-day food gardening bears similarities to the peasant household production of the late 19th – early 20th centuries (Clarke et al. 1999; O'Brien, Wegren, and Patsiorkovsky 2005). At the same time, researchers have continued to focus on the economic dimension of self-provisioning, and treat it as a response to poverty and survival strategy (Seeth et al. 1998), as an indication of economic distress in rural areas (O'Brien et al. 1996) or as merely a useful "fix" to Russia's social conflicts (Rutkevich 2001). However, recent studies also suggested that the mass food self-provisioning by Russian households cannot be explained as a response to poverty (Berman 2005; Clarke et al. 1999), that food gardening is a highly diverse, sustainable and culturally rich mode of food production it its own right (Berman 2005), and that a proper understanding of this practice requires the study of its cultural characteristics (Bonanno and Lyman 1999). This recent recognition of the cultural dimension of food gardening is not surprising, since almost a century ago Russia's most prominent agricultural economist Alexander Chaianov maintained that the significance of agriculture grounded in century-old traditions of peasant living goes well beyond food production alone (Kremnev 1920; Sharashkin, Gold, and Barham 2005). Lovell's (2003) ethnographic and social history research of Russian *dacha* contributed to the understanding of its cultural significance, but self-provisioning, especially by urban households (who form the majority of micro-scale producers), continues to be under-researched. To date, no interdisciplinary studies of the economic, natural resource and socio-cultural characteristics of food gardening in Russia (or in any of Russia's regions) have been carried out. Researchers themselves recognize the scarcity of research on the topic (Varshavskaya 1998; Yaroshenko 1998). This study will help to partially fill this gap.

Research objectives and methods

While the primary focus of this study is to assess the current economic, natural resource, social and cultural importance of food gardening in the Vladimir region of Russia, by way of introduction we need to first look, in this chapter, at the *national* level (especially since much of the previously available statistics and research dealt with the national, rather than regional, level). Providing an overview of food gardening in Russia as a whole will put the results of our study of the Vladimir region into a wider context, and will offer partial answers to the following two sets of questions:

1) **The economic question:** Is food gardening in Russia an important part of the national and regional agriculture and economy? Is food gardening a viable and efficient means of long-term sustainable (including natural resources use and environmental sustainability) food production under the conditions of the Russian economy?
2) **The cultural question:** Can the food gardening phenomenon be explained as only a temporary response to poverty, economic hardships, and food insecurity? Or should it be viewed as an important part of Russian culture and a continuation of a long tradition of self-reliant, land-based lifestyle?

To answer these questions, I will draw upon the available literature on food gardening, on the extensive statistical sources, including the statistics annually gathered and published by Goskomstat/Rosstat, Russia's Federal Statistical Service, as well as the preliminary results of the comprehensive Russia's 2006 Census of Agriculture.

Based on the background presented in this chapter, in the next chapter we shall focus on one of the regions of Central European Russia — *the Vladimir oblast* — to examine in fine detail the food gardening practice. Based on the results of our own large survey conducted

in the region in 2006 (with a representative sample of 1,500 households, both urban and rural), as well as the extensive regional statistics, we shall examine the whole range of economic, agricultural, social, and cultural characteristics associated with the practice.

In the final Chapter 3, I shall then present a discussion of the implications of my findings, as well as my recommendations.

Primary agriculture:

Present place of household gardening in Russia's economy

Two agricultures

Starting in the 1920s, Soviet agriculture branched into two sectors. One was the "official," modern, collectivized agricultural sector — state-controlled, large-scale, relying on heavy inputs, mechanization, hired labor and centralized processing and distribution of outputs. The other was "private," household-managed, micro-scale, independent of state support or inputs, manual-labor-based, employing no labor outside the household, geared towards self-provisioning, traditional — based on the centuries-old traditions of peasant living (Sharashkin and Barham 2005b). Food gardening by urbanites was re-authorized by Soviet authorities at the beginning of WWII to fight impending food shortages, and it quickly spread throughout the country (Lovell 2003). As for subsistence-growing among the rural population, it never ceased even during the height of collectivization, and even Stalin himself admitted that the state should not (as yet) collectivize personal garden-plots (Stalin 1949).

The collectivized sector of agriculture (99.6% of agricultural producers were collectivized by 1955) witnessed a significant growth over the post-war decades (Matskevich 1967). By the mid-1950s, grain production exceeded the 1913 level (pre-WWI and pre-revolution) and between 1950 and 1970 increased by more than 2.3 times to 186.8 million tonnes (Goskomstat 1971). Production of meat by *kolkhozes* and *sovkhozes* rose six fold between 1940 and 1970 to 8 million tonnes per year. These advances were largely achieved by government-mandated and government-sponsored industrialization of agriculture. Thus, between 1950 and 1974 the production of plough-tractors increased by 79% to 218,000 units per year, and the production of cereal harvesters increased by 91% to 88,400 units per year. Between 1950 and 1972, the supply of NPK fertilizers to Soviet agriculture increased almost ten fold, and the rate of NPK application increased from 7.3 to 55.9 kg/ha per year (Goskomstat 1975).

At the same time, the "private" (household-based) sector continued to grow as well and by the mid-1950s accounted for 25% of the country's agricultural output (Wadekin 1973). Yet, throughout the Soviet period, the authorities have maintained an ambivalent attitude to household producers: their importance to food security was tacitly recognized, yet the government refrained from providing any support to household production so as not to encourage any "capitalistic," private ownership tendencies (Lovell 2003).

Gorbachev's *perestroika*, the subsequent disintegration of the USSR, and Russia's liberal reforms radically altered the picture. As the state withdrew support to agricultural producers in the early 1990s, *kolkhoz* and *sovkhoz* production dwindled. Yet, at the same time, land became more readily available for household producers, which resulted in a sharp increase in the number of household producers and their output. It is recognized that the maintenance of adequate levels of food security over the transition period of 1990s was

largely due to the proliferation of household plots (Sedik, Sotnikov, and Wiesmann 2003). In 2003, 34.8 million families (66% of all households in the country) owned gardening plots (subsidiary plot, allotment, garden, or dacha) and were involved in growing crops for subsistence (Rosstat 2005b). By 2005, 53% (by value) of the country's total agricultural output was coming from household plots (which in 2006 occupied only 2.9% of agricultural land), while the remaining 47% (by value — Rosstat 2006) came from the agricultural enterprises (often the former *kolkhozes* and *sovkhozes*) and individual farmers, requiring 97.1% of agricultural lands (Rosstat 2007b). Therefore, just as predicted by Chaianov (Kremnev 1920) almost a century earlier, household production is currently 38 times more efficient in terms of land use than the "official" agriculture (i.e., requires 38 times less land area to produce 1 ruble worth of output), and also requires no governmental subsidies or support. For all these reasons, this traditional sector of Russian agriculture deserves the name of *primary agriculture.*

Key macroeconomic characteristics

Productivity: share of GDP and agricultural output

In 2004, agricultural production of dacha gardeners (urban) and subsidiary plot cultivators (rural) amounted to 51% (by value) of the total agricultural output of the Russian Federation (Rosstat 2006). This represents 384 billion rubles (approx. US$14 bn at the then current exchange rate), or 2.3% of Russia's Gross Domestic Product (GDP). This is greater, for example, than the contribution to the GDP of the whole electric power generation industry (317 bn rubles); significantly greater than all of forestry, wood-processing, and pulp and paper industry combined (180 bn); significantly greater than the coal (54 bn), natural gas (63 bn), and oil refining (88 bn) industries combined. (See Figure 1.)

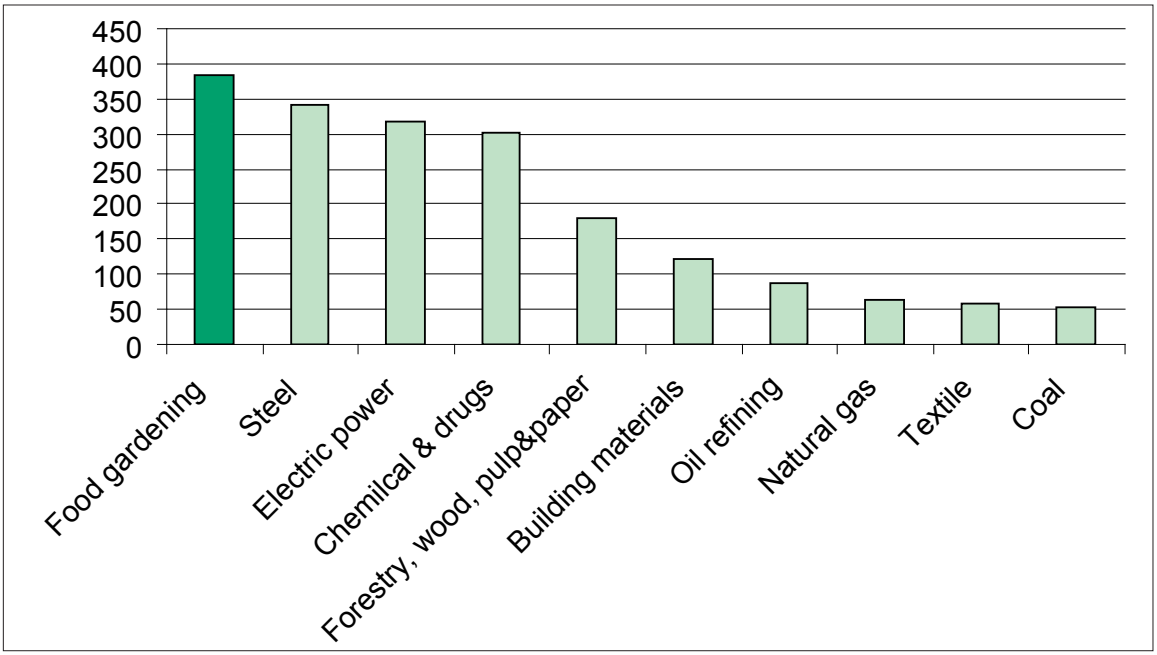


Figure 1. Food gardening and other industries' contribution to GDP in 2004, billions of rubles. Source: Rosstat 2006.

The share of food gardening in national agriculture has increased from 32% in 1992 to over 50% by 2000. Figure 2 presents the place of household production in the country's agriculture. For the past decade, food gardeners have been making a larger contribution to the total agricultural output of the country than the commercial sector. According to Rutkevich (2001), this is still an underestimate, since these figures do not include harvesting wild-growing plants, berries, nuts and mushrooms, and fishing and hunting, which also make an important contribution to the national food economy.

It should be noted that since the above aggregate statistics include the production of grain by the industrial agriculture sector, as well as production of industrial non-food crops such as flax, the contribution of the households to the *food* economy is even greater. The share of households in production of certain products is very high: it is consistently over 90% for potatoes and around 80% for vegetables (see Table 1).

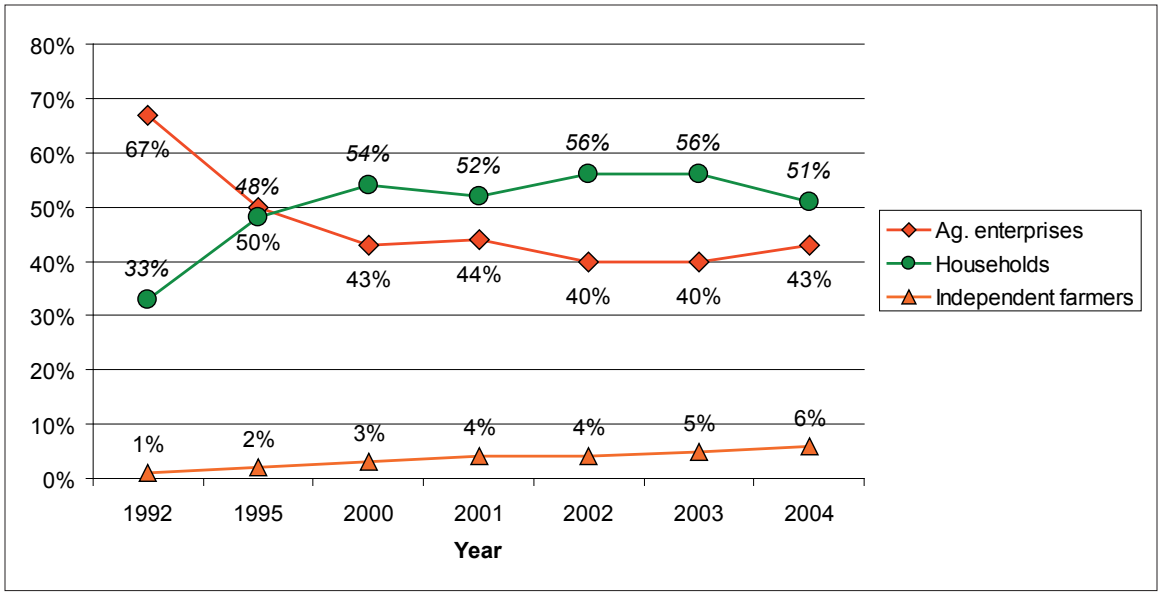


Figure 2. Share of agricultural enterprises, households and independent farmers in Russia's agricultural output (by value), 1992–2004. Source: Rosstat 2006.

Table 1. Agricultural production by Russian households, 2004.

	Mln tonnes	**Share of total agricultural output of this product, percent**
Potatoes	33.0	92.8%
Vegetables	11.5	80.1%
Fruit and berries	3.2	81.1%
Meat	2.6	52.5%
Milk	16.7	52.2%
Eggs, billion	9.5	26.7%
Wool, thousand tonnes (2003)	25.6	56.9%

Source: Rosstat 2005b.

It is also important to point out regional differences: commercial agriculture (especially row crops production) is concentrated in the "black soil" (*chernozem*) regions of Southern European Russia. At the same time, private-plot gardening by rural residents is spread all over the country, whereas dacha production by urbanites is concentrated around

major urban centers, most of which lie outside the "black soil" regions. For this reason, the share of household agriculture in regions outside the *chernozem* belt is even higher than the country's average (even though both climatic and natural resource conditions are not nearly as favorable for food growing as in the country's South). For example, in the Vladimir oblast (a typical region of central non-chernozem Russia) in 2004, the share of households in the region's agricultural output was 57% — six percentage points higher than the national average of 51% (Vladimirstat 2006c).

Use of land resources

Producing 1 ruble worth of output requires significantly less land in household agriculture than in commercial agriculture. In 2006, 53% (by value) of the country's total agricultural output was coming from household plots which occupied only 2.9% of agricultural land, while the remaining 47% of output by commercial agricultural enterprises (often the former *kolkhozes* and *sovkhozes*) and individual farmers, required 97.1% of agricultural lands (Rosstat 2007b). As noted above, household production requires 38 times less land area to produce 1 ruble worth of output. It is noteworthy that such exceptional productivity has historic antecedent: prior to World War I Russian peasants' private plots attached to their dwelling were at least four times more productive than the fields outside the village (Shinn 1987).

The 2006 Census of Agriculture (Rosstat 2007a) confirmed that households own only 2.5% of all lands (both agricultural *and* non-agricultural) used by all parties involved in agriculture, only 5.8% of agricultural lands and only 6.0% of all agricultural lands actually used in production (see Table 2). This, again, is similar to the share of land devoted to peasant's garden-plots in the end of the 19th century and the first quarter of the 20th century — which varied from 0.1% to 7.3%, depending on year and region (Schinn 1987).

Table 2. Land usage by different groups of users, in percent of the total usage of land by category (columns total 100%).

	Total land	Ag. lands	Tillage	Hay-fields	Pastures	Perenni-als*	Fallow	Used ag. lands
Enterprises (corporate farms)	90.8%	79.7%	80.5%	72.9%	86.1%	52.4%	66.1%	78.1%
Individual (family) farmers	6.7%	14.5%	16.4%	8.1%	10.2%	3.7%	19.4%	15.9%
Households (food gardeners)	2.5%	5.8%	3.1%	19.0%	3.7%	43.9%	14.5%	6.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Rosstat 2007a. Preliminary results of the 2006 Census of Agriculture, Issue #3.
Note: *See Table 4 for additional data on perennials.

How can households achieve such exceptional productivity on such a small land area? There are several factors involved.

First, both households and individual farmers make a much fuller use of land resources at their disposal than the agricultural enterprises. Table 3 shows that households use 69% and farmers use 67% of their land for actual agricultural production, compared to only 24% for agricultural enterprises. In addition to agricultural land resources, enterprises use vast areas of non-agricultural lands — 271 mln ha, compared to only 1.3 mln ha for households. In 2006, corporate farms left fallow 9.6 mln ha of agricultural lands at their disposal. For comparison, the same year households produced more than 50% of the country's agricultural output on 7.6 mln ha of land!

Table 3. Land used for agricultural production by different groups of users.

	Total land area, mln ha	Used in ag. production	
		mln ha	Percent of total land
Enterprises (corporate farms)	404.6	98.6	24%
Individual (family) farmers	29.8	20.1	67%
Households (food gardeners)	11.0	7.6	69%
Total	445.4	126.2	28%

Source: Rosstat 2007a. Preliminary results of the 2006 Census of Agriculture, Issue #3.

Second, households make much greater expenditures of labor on a per ha basis than enterprises, which enables the households to achieve the high levels of productivity. Besides, the *quality* of their labor is very different from that in commercial agriculture. Growing crops for their family consumption, gardeners work with a diligence and responsibility that can hardly be expected from hired workers employed in the large enterprises of industrial agriculture. This divergence in attitudes has deep historic roots. In the times of feudal Russia, peasant serfs were as careless in tending their landlord's lands as they were caring when tending their own plots. Little changed during the Soviet era: peasants were notorious for their lack of productivity and responsibility while working on the "collective" farms, while being exceptionally hard-working when it came down to taking care of their own homestead with its animals and garden-plot (Lovell 2003; Shinn 1987).

Third, households achieve a much higher level of integration in the use of their land. While commercial agricultural producers tend to devote large land areas to the production of a single crop (most often annual), gardeners blend a large number of species (both annual and perennial) on their small plots into an integrated whole. As is seen from Table 2, while owning less than 6% of agricultural lands in the country, households at the same time own 44% of perennial plantings.

In fact, garden-plots can justifiably be called micro-scale agroforestry systems, since the four key characteristics of agroforestry practices can be observed in gardening. According to Gold and Garrett (2008), the key characteristics that distinguish agroforestry practices are the combination of annual and woody perennial plantings that are *intentional*, *intensive*, *integrated*, and *interactive*.

The co-location of annual crops (especially vegetables such as potatoes) with shrubs (raspberry, currants, etc.) and trees (apples, pears, plums, cherries, etc.) in Russian

garden-plots is certainly *intentional*: the several hundred square meters of ground at the household's disposal is often all the land they have to produce both vegetables and fruit for the family, so the mixing of annual and perennial plants becomes an inevitability. Figure 3 shows a typical dacha plot on which the plantings of vegetables, shrubs, and trees are intentionally combined.

Because of the limited plot size, the household gardening practice is of necessity *intensive*. It is obvious that only by intensive management of both annual and perennial plants can gardeners achieve their high levels of productivity. Figure 4 shows a highly intensive gardening practice: in this micro-scale alley cropping system, raised beds of potatoes are

Figure 3. A typical 600 m^2 dacha plot as an agroforestry system: mixed plantings of vegetables, shrubs and trees.

interplanted with rows of rye. To maintain soil fertility, potatoes and rye switch places every year, and rye straw is used as mulch to add organic matter to the soil and to control weeds.

Likewise, because of the small plot size, the annual and perennial plantings are usually highly *integrated*: the gardeners have no space so as to devote one patch of ground exclusively to an orchard, another exclusively to the vegetable beds, etc. On the contrary, annuals, shrubs and trees are planted together, and gardeners take care to position the trees in such a way so as not to shade other crops. Figure 5 shows a hedge of raspberry bushes alongside vegetable beds. In addition to producing harvests of raspberries, this low-maintenance "living fence" protects the garden from winds, attracts birds that control pests, and keeps unwanted visitors out.

Figure 4. An intensive potato/rye alley cropping. Photo 2004 by Alexey Kondaurov.

Finally, the gardening practices are *interactive*. Because of the presence of perennial plantings, especially trees, the gardens are managed on the basis of not just annual cycles of vegetable crop growing, but the longer cycles involving the growth of the trees. As trees grow, they produce more shade; besides, the ground under the tree crowns can no longer be subjected to deep tillage, so as not to damage the roots. As a result, gardeners use adaptive management approaches and change the composition and positioning of the vegetable plantings depending on the stage of growth of trees and shrubs. Figure 6 shows the same garden-plot with an interval of about 12 years: in the early years of operation much of the plot was devoted to potato cultivation, while the apple, pear, plum and cherry trees, as well as a variety of shrubs, were starting to grow. Twelve years later, as the trees have grown and started to bear fruit, the area under the trees was withdrawn from vegetable growing and converted to a lawn for leisure uses.

Figure 5. A multi-functional raspberry hedge bordering vegetable beds. Photo 2004 courtesy of Alexey Kondaurov.

Figure 6. The evolution of a dacha garden-plot.

That household gardening is a highly diversified agroforestry practice can also be seen from the statistics on gardens' contribution to the production of certain foodstuffs (see Table 1 above), which shows that households hold leading roles not only in production of annual vegetable crops including potatoes, but also in perennial fruit production and animal husbandry. As we shall see in the next chapter, this is also confirmed by the results of our own survey in the Vladimir region.

Besides, the 2006 Census of Agriculture offers detailed statistics on households' share of different annual and perennial plantings in the national totals (see Tables 4 and 5 for the summary data; Table 6 for detailed data on annual crops and Table 7 for detailed data on perennial crops).

Table 4. Distribution of land under different crop categories (annual and perennial) for agricultural enterprises, individual farmers, and households, as of July 1, 2006.

	Agricultural enterprises		**Independent farmers**		**Households**		**TOTAL**	
	000's ha	**% of this crop**	**000's ha**	**% of this crop**	**000's ha**	**% of this crop**	**000's ha**	**% of this crop**
All crops total	59,029	78%	12,943	17%	3,551	5%	75,522	100%
Annual crops total	58,774	79%	12,924	17%	3,160	4%	74,858	100%
Grains and beans	34,350	79%	9,014	21%	355	1%	43,719	100%
Industrial crops*	6,313	72%	2,468	28%	33	0.4%	8,814	100%
Potatoes	154	7%	79	4%	1,884	89%	2,118	100%
Vegetables and melons	123	17%	122	16%	501	67%	747	100%
Forage crops	17,833	92%	1,241	6%	387	2%	19,461	100%
Perennial crops total	255	38%	18	3%	391	59%	664	100%
Perennial fruits, berries and nuts	191	32%	17	3%	387	65%	595	100%
Other perennials	64	92%	2	2%	4	6%	70	100%

Note: *Industrial crops — raw material for factory processing, e.g., flax. Source: Rosstat 2007a. The 2006 Census of Agriculture, Preliminary results, Issue #3, Tables 14 & 18.

Table 5. Distribution of land under different crop categories (annual and perennial) for agricultural enterprises, individual farmers, and households, as of July 1, 2006 (sum across columns).

	Agricultural enterprises		Independent farmers		Households		TOTAL	
	000's ha	% of total land used for all crops	000's ha	% of total land used for all crops	000's ha	% of total land used for all crops	000's ha	% of total land used for all crops
All crops total	59,029	100%	12,943	100%	3,551	100%	75,522	100%
Annual crops total	58,774	100%	12,924	100%	3,160	89%	74,858	99%
Grains and beans	34,350	58%	9,014	70%	355	10%	43,719	58%
Industrial crops*	6,313	11%	2,468	19%	33	1%	8,814	12%
Potatoes	154	0%	79	1%	1,884	53%	2,118	3%
Vegetables and melons	123	0%	122	1%	501	14%	747	1%
Forage crops	17,833	30%	1,241	10%	387	11%	19,461	26%
Perennial crops total	255	0%	18	0%	391	11%	664	1%
Perennial fruits, berries and nuts	191	0%	17	0%	387	11%	595	1%
Other perennials	64	0%	2	0%	4	0%	70	0%

Note: *Industrial crops — raw material for factory processing, e.g., flax. Source: Rosstat 2007a. The 2006 Census of Agriculture, Preliminary results, Issue #3, Tables 14 & 18.

As can be seen from Tables 4 and 5, commercial agricultural producers put primary emphasis on annual crops (which amount to 99.6% of land area for agricultural enterprises and 99.9% for independent farmers), especially grains, forages and "industrial crops" (raw materials for factory processing such as flax, sunflower, and sugar beets). Potatoes, vegetables, and perennial crops each occupy less than 1% of land used by enterprises and independent farmers. At the same time, households place emphasis on potatoes (53.1% of planting area), and devote the balance of the land to vegetables, perennial crops, forages, grains and beans — roughly in equal measure (between 10% and 15% each). Household production is highly diversified (Tables 6 and 7), and households play a leading role in the production of most vegetable and perennial crops.

Table 6: Distribution of land under different annual crops for agricultural enterprises, individual farmers, and households, as of July 1, 2006.

	Agricultural enterprises		Independent farmers		Households		TOTAL	
	000's ha	% of this crop	000's ha	% of this crop	000's ha	% of this crop	000's ha	% of this crop
Total annual crops for 2006 harvest	58,774	79%	12,924	17%	3,160	4%	74,858	100%
Grains and beans	34,350	79%	9,014	21%	355	1%	43,719	100%
wheat	18,450	78%	5,085	22%	166	1%	23,701	100%
barley	7,761	78%	2,166	22%	87	1%	10,014	100%
oats	3,226	86%	503	13%	31	1%	3,761	100%
rye	1,550	85%	260	14%	4	0%	1,814	100%
beans	1,170	90%	123	10%	4	0%	1,296	100%
buckwheat	742	64%	420	36%	4	0%	1,166	100%
corn for grain	758	72%	244	23%	54	5%	1,056	100%
millet	486	72%	189	28%	2	0%	676	100%
rice	149	93%	11	7%	0	0%	160	100%
sorghum	32	76%	9	21%	1	3%	42	100%
other grains	26	80%	4	13%	3	8%	33	100%
Industrial crops (raw material for factory processing)	6,313	72%	2,468	28%	33	0%	8,814	100%
oil crops (sunflower, soy, mustard, etc.)	5,335	69%	2,319	30%	28	0%	7,682	100%
sugar beets	853	86%	139	14%	4	0%	996	100%
flax	78	93%	6	7%	0	0%	83	100%
other industrial crops (coriander, mint, medicinals, hemp, beets for seeds, cotton, tobacco, etc.)	48	91%	5	9%	0	1%	53	100%
Potatoes	154	7%	79	4%	1,884	89%	2,118	100%
Vegetables and melons	123	17%	122	16%	501	67%	747	100%
cabbages (all kinds including cauliflower, broccoli, etc.)	23	21%	11	10%	75	68%	110	100%
tomatoes	8	7%	13	12%	88	81%	109	100%
onions	16	19%	5	6%	62	75%	83	100%
carrots	14	21%	8	12%	45	68%	66	100%
cucumbers	3	4%	6	9%	53	87%	61	100%
beets	11	26%	6	13%	27	62%	43	100%
pumpkin	2	8%	3	8%	25	84%	30	100%
garlic	0	0%	0	0%	28	100%	29	100%
squash	3	12%	3	12%	17	76%	22	100%
green peas	10	72%	1	7%	3	20%	13	100%
other vegetables	2	20%	1	7%	9	73%	12	100%

[Table 6 continued.]

	Agricultural enterprises		Independent farmers		Households		TOTAL	
	000's ha	% of this crop	000's ha	% of this crop	000's ha	% of this crop	000's ha	% of this crop
greens & herbs	1	5%	0	1%	10	95%	11	100%
green beans	0	0%	0	0%	10	99%	10	100%
bell peppers	1	13%	2	17%	7	70%	10	100%
vegetables for seed	4	85%	1	14%	0	1%	5	100%
eggplant	0	11%	1	24%	3	66%	4	100%
sweet corn	2	66%	0	3%	1	32%	2	100%
onion for seed	0	19%	1	35%	1	46%	2	100%
salad	0	2%	0	2%	1	96%	2	100%
watermelons and melons	24	22%	63	58%	21	20%	108	100%
Forage crops	17,833	92%	1,241	6%	387	2%	19,461	100%
perennial cereals	6,351	90%	584	8%	161	2%	7,095	100%
perennial legumes	5,917	93%	346	5%	101	2%	6,363	100%
annual grasses	3,622	92%	236	6%	62	2%	3,919	100%
corn for feed (green mass)	1,421	97%	45	3%	1	0%	1,467	100%
silos crops (excluding corn)	362	95%	18	5%	0	0%	381	100%
other forage crops	127	86%	8	6%	12	8%	147	100%
tubers for feed (including beets)	22	38%	2	3%	35	59%	59	100%
melons for feed	11	37%	2	8%	16	55%	28	100%
forage crops for seed	1	89%	1	7%	0	4%	1	100%

Source: Rosstat 2007a. The 2006 Census of Agriculture, Preliminary results, Issue #3, Table 14.

The understanding of food gardens as evolving agroforestry systems (as opposed to routine annual crop operations) is important for explaining the trends observed in this practice. Because of the prominence of the perennial component of gardening, many land use decisions are made not on an annual, but on a significantly longer-term basis. Therefore, today's changes in the cultivation and output of certain crops may be due not to the current economic conditions or shifts in growers' preferences, but to the decisions made and actions undertaken a decade or longer ago. For example, Southworth (2006) observed a declining

Table 7. Distribution of land under different perennial crops for agricultural enterprises, individual farmers, and households, as of July 1, 2006.

	Agricultural enterprises		Independent farmers		Households		TOTAL	
	000's ha	% of this crop	000's ha	% of this crop	000's ha	% of this crop	000's ha	% of this crop
All perennials	255.1	38%	18.4	3%	390.9	59%	664.3	100%
Perennial fruit, berry and nut crops	190.9	32%	16.8	3%	386.8	65%	594.6	100%
fruit (temperate spp.)	171.0	39%	13.6	3%	251.2	58%	435.7	100%
apples	146.5	59%	9.2	4%	92.5	37%	248.2	100%
cherries	7.2	10%	1.1	2%	66.9	89%	75.1	100%
plums	8.3	18%	0.8	2%	36.2	80%	45.3	100%
pears	4.9	13%	1.1	3%	31.8	84%	37.8	100%
apricots	2.6	17%	1.0	6%	11.5	77%	15.1	100%
peaches	0.9	24%	0.3	8%	2.6	68%	3.8	100%
other fruit (temperate spp.)	0.7	7%	0.0	0%	9.6	92%	10.5	100%
nuts	3.1	31%	1.3	13%	5.7	57%	10.1	100%
hazelnuts	2.5	39%	1.0	15%	2.9	45%	6.4	100%
walnuts	0.6	17%	0.3	7%	2.7	76%	3.6	100%
almonds	0.0	4%	0.0	6%	0.1	96%	0.1	100%
other nuts	0.0	14%	0.0	15%	0.1	72%	0.1	100%
subtropical fruit	0.4	19%	0.2	11%	1.3	70%	1.9	100%
persimmons	0.2	20%	0.2	17%	0.7	63%	1.1	100%
figs	0.0	5%	0.0	2%	0.2	94%	0.2	100%
pomegranates	0.0	11%	0.0	4%	0.1	86%	0.1	100%
other subtropical	0.1	27%	0.0	1%	0.3	72%	0.4	100%
citrus	0.0	25%	0.0	2%	0.0	75%	0.1	100%
berries	16.5	11%	1.8	1%	129.4	88%	147.6	100%
strawberries	2.1	5%	0.7	2%	41.7	94%	44.6	100%
raspberries, blackberries	2.1	7%	0.2	1%	30.0	93%	32.3	100%
currents	5.9	14%	0.3	1%	36.7	86%	42.9	100%
gooseberries	0.1	1%	0.1	1%	8.6	98%	8.8	100%
black rowanberries	2.0	34%	0.0	1%	3.8	65%	5.8	100%
sea-buckthorn	3.6	44%	0.3	4%	4.2	52%	8.1	100%
other berries	0.8	15%	0.1	1%	4.3	84%	5.2	100%
Grapes	59.8	92%	1.4	2%	4.0	6%	65.2	100%
Hops	0.7	96%	0.0	4%	0.0	0%	0.8	100%
Tea	1.4	99%	0.0	1%	0.0	0%	1.4	100%
Nurseries	2.2	93%	0.2	6%	0.0	1%	2.4	100%

Source: Rosstat 2007a. The 2006 Census of Agriculture, Preliminary results, Issue #3, Table 14.

trend in the number of households planting potatoes from the mid-1990s to 2003, and interpreted it as a sign of gardens' declining subsistence role. However, the "subsistence" function of gardening cannot be reduced to a single crop (potatoes). Besides, if gardening is viewed as an agroforestry practice, the gradual decline in the number of households planting potatoes is actually predictable and explainable by the fact that as the perennial plants (e.g., fruit trees and shrubs) planted in the '80s and '90s (when the majority of garden-plots were acquired) grow and start to bear fruit, the relative significance of annual crops decreases. Thus, far from being converted from self-provisioning to leisure uses, the gardens continue to fulfill their subsistence role with a new (and ever-evolving) mix of crops.

Labor: participation in gardening

According to official statistics (Goskomstat 2004), in 2003, 34.8 million families (66% of all households in the country) owned a gardening plot (subsidiary plot, allotment, garden, or dacha) which could be used for growing crops and/or raising animals. This figure decreased to 33.3 million in 2005. This figure does not include people who do not own, but use their relatives' or friends' dacha or whose summer residence is not officially recognized as a "dacha" (e.g., urban owners of a village house). Table 8 presents the number of households that owned agricultural land plots from 1992 to 2005.

The statistics in Table 8 are based on *ownership* of a plot, and thus offer only an approximation of the actual number of plots used for food production, and the number of households engaged therein. Until the 2006 Census of Agriculture was conducted, there were no national-level statistics on the proportion of the plots that were actually *used* in production. So, the above statistics include plots that are abandoned or used only for recreation, as well as plots that are used by more than one household.

Table 8. Number of households owning agricultural land plots.

	1992	1995	2000	2001	2002	2003	2004	2005
Total plots								
Families, mln	40.7	38.7	36	35.3	34.9	34.8	34.6	33.3
Total land area, thousands ha	8,510	7,655	7,977	8,266	8,594	8,681	8,740	8,621
Average per family, ha	0.21	0.20	0.22	0.23	0.25	0.25	0.25	0.26
Subsidiary plots (rural areas)								
Families, mln	19.3	16.3	16	16	15.9	16	16	16
Total land area, thousands ha	6,826	5,810	6,243	6,545	6,914	7,014	7,078	7,050
Average per family, ha	0.35	0.36	0.39	0.41	0.43	0.44	0.44	0.44
Gardens and allotments (mostly owned by urban residents)								
Families, mln	21.4	22.4	20	19.3	19	18.8	18.6	17.3
Total land area, thousands ha	1,684	1,845	1,734	1,721	1,680	1,667	1,662	1,571
Average per family, ha	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09

Source: Rosstat 2007b.

In the above table, the subsidiary plots are predominantly located in and adjacent to rural settlements (villages). However, not all of them belong to or are used by rural residents themselves. It has been a growing trend for rural homes to be purchased by urbanites and used (mostly seasonally) as a secondary residence, a dacha. Thus, according to the 2002 Census of the population, Russia had 13.5 mln rural households. The same year, 15.9 mln families had subsidiary land plots in rural settlements, which suggests that either rural residents own, on average, more than one subsidiary plot per family, or that the "surplus" is owned by the urbanites. It should only be noted that rural plots tend to be larger in size than garden or allotment lots (in 2005 the average size being 0.44 and 0.09 ha, respectively).

Finally, while the number of families owning a plot has decreased between 1992 and 2005 from 40.7 to 33.3 million, the land area under the plots remained stable and even increased, reflecting the trend for the growing size of the plots.

Because of such a massive participation in food gardening by Russia's families, concerns have been voiced by a number of researchers (e.g., Southworth 2006; Clarke et al. 1999) that it may negatively affect the "labor markets," as able-bodied men and women of working age spend time at their gardens instead of "fueling the economic recovery." Such concerns could be justified if the Russian economy of the 1990s and beyond was characterized by *full employment*, and if gardening was undertaken *instead of* regular employment rather than *in addition to* it. However, this is far from the case (see Table 9).

Table 9. Labor force and unemployment in Russia, 1992–2006.

	1992	**1995**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
Thousands of people									
Labor force	**75,060**	**70,740**	**72,332**	**71,411**	**72,421**	**72,835**	**72,909**	**73,811**	**74,187**
Employed	71,171	64,055	65,273	65,124	66,266	67,152	67,134	68,603	69,189
Unemployed	3,889	6,684	7,059	6,288	6,155	5,683	5,775	5,208	4,999
% of the total labor force									
Employed	94.8%	90.5%	90.2%	91.2%	91.5%	92.2%	92.1%	92.9%	93.3%
Unemployed	5.2%	9.5%	9.8%	8.8%	8.5%	7.8%	7.9%	7.1%	6.7%

Source: Rosstat 2007b.

As we can see, over the past 15 years between 5.2% and 9.8% of the labor force were unemployed, with almost 5 million people (6.7% of labor force) unemployed in 2006. These figures do not include "hidden" unemployment — workers who do work but do not receive salary due to salary delays. A significantly lower number of unemployed register as job seekers with the corresponding Social Security agency. Even so, the number of vacancies waiting to be filled has consistently been *lower* than the number of even "registered" unemployed (those on file at the governmental job placement agency) — see Table 10.

Table 10. Employers' requests for employees filed with the Social Security agency, and the number of registered unemployed, thousands.

	2000	2001	2002	2003	2004	2005	2006
Employers' vacancies	804.8	976.5	955.9	941.2	922.9	916.3	1,011.8
Registered unemployed	1,037.0	1,122.7	1,499.7	1,638.9	1,920.3	1,830.1	1,742.0
Request/unemployed ratio	78%	87%	64%	57%	48%	50%	58%

Source: Rosstat 2007b.

Therefore, there seems to be no shortage of available labor in the economy. On the contrary, the number of people seeking employment is consistently higher than the number of jobs available. Should the tens of millions of gardeners decide to sell their labor on the labor market, instead of working on their garden-plots (as some researchers and decision makers suggest they should), for the vast majority of them there would simply be no available placement. Thus, there is no perceivable competition between the "official" economy and the gardening economy of self-provisioning. All the more so since most urban gardeners tend garden-plots *in addition to* their regular employment (on weekends and during summer holidays), rather then *instead of* regular employment. Besides, gardening is a highly seasonal activity, with the growing season in Central European Russia being only 110–120 days per year. Therefore, a part-time activity carried out over only three to four months per year, and often *in addition to* regular employment, can hardly be expected to negatively affect the "official" national economy (especially since the latter experiences no shortage of labor anyway).

Many researchers have tried to explain participation in food gardening as a response to poverty and as a survival strategy during the economic crisis (e.g., Burawoy, Krotov, and Lytkina 2000; Seeth et al. 1998; O'Brien et al. 1996). According to these researchers, the economic decline of the early 1990s, which followed the implementation of Russia's

liberal reforms, forced millions of families to obtain garden-plots and grow food so as to guarantee a supply of foodstuffs. Undoubtedly, striving for food security in times of uncertainty should encourage self-provisioning. At the same time, it cannot purport to explain the whole of the food gardening phenomenon, which is a highly diverse practice serving a large variety of economic, social, and cultural purposes, of which production of foodstuffs remains but one. Indeed, if food gardening was completely motivated by food security needs in an unstable economy, it would be expected that the practice would not persist in times of economic stability. However, the statistics show that food gardening was an extremely widespread (and growing) phenomenon involving millions of households during the 1980s, which were characterized by economic growth, stability, and full employment. Obviously, "survival" could not be the primary motive for tending a garden in the 1980s.

Table 11. Number of gardening associations existing on July 1, 2006, by year in which they were formed.

Year formed	Number	Percent of total	Cumulative number	Cumulative percent
prior to 1961	4,636	5.8%	4,636	5.8%
from 1961 to 1970	6,426	8.0%	11,062	13.8%
from 1971 to 1980	7,958	9.9%	19,020	23.7%
from 1981 to 1990	23,856	29.7%	42,876	53.4%
from 1991 to 2003	36,470	45.4%	79,346	98.8%
2004	233	0.3%	79,579	99.1%
2005	348	0.4%	79,927	99.5%
2006	415	0.5%	80,342	100.0%
TOTAL	**80,342**	**100.0%**		

Note: the average number of land plots per association was 172, with the total number of plots in all associations equal to 13.83 million. Source: Rosstat 2007a. Preliminary results of the 2006 Census of Agriculture, Issue 3.

Table 11 shows that of the 80,342 gardening associations in existence in 2006, 42,876 associations (53.4%) were formed *prior* to the economic crisis of the early 1990s. The majority of these (42,876 or 29.7% of all associations existing in 2006) were formed during the decade from 1981 to 1990. In fact, during this one decade, more associations were formed than in all the preceding decades put together. However, the 1980s were relatively opulent years, especially compared to the post-war decades. Yet, it is during these years that the bulk of the associations in existence prior to 1991 were formed. The explanation for this rapid growth is to be found not in the economic conditions, but rather in the policies of the state: it was during the era of Gorbachev's *perestroika* that obtaining a land plot became significantly easier (Lovell 2003). Even though the 1990s saw the continued rapid growth of food gardening, the food growing practice as a whole cannot be regarded as just a survival strategy under conditions of economic uncertainty.

Other economic characteristics

Subsistence vs. market

According to the 2006 Census of Agriculture (Rosstat 2007a, Preliminary results, Issue #3), 86.6% of subsidiary plot cultivators (14.8 mln households) were growing for subsistence; for 12.8% it was a source of additional income, and only 0.6% relied on it as the primary source of monetary income. Note that for dacha growers and other gardeners, the purpose of production (subsistence vs. market) was not even reported, since the vast majority of urban growers are assumed to grow for subsistence only.

These data corroborate the trends observed in the National Agricultural Outlook (Rosstat 2005a), according to which only a small portion of the products produced by households reaches the market. According to the Outlook, the share of potatoes that reaches

the market increased only slightly from 11.0% in 1999 to 13.5% 2004, while the share of vegetables remained virtually the same (21.4% in 1999 and 21.3% in 2004). In 2004, households produced 91.8% of potato harvest and 80.2% of vegetables. Thus, even if all the potatoes and vegetables that reached the market were coming from the households (and none from the commercial agricultural producers), the share of household's crops that reached the market would not have exceeded 14.7% for potatoes and 26.6% for vegetables. In reality, however, this share is lower, since part of the potatoes and vegetables sold in the market comes from agricultural enterprises and independent farmers.

In the 2002 Census, 18.2 million people (12.5% of total population; 5.7% for urban and 31.4% for rural) named their subsidiary plots as a source of livelihood. While the question in the Census was formulated to imply *monetary* income, it is possible that it was interpreted to include *in-kind* contributions to income by some of the respondents. However, this figure correlates with the results of the 2006 Census of Agriculture (Rosstat 2007a), which showed that 13.4% of subsidiary plot cultivators derived *monetary* income from their gardening activity. This proportion of gardeners selling part of their produce is much lower for urban gardeners (those who have an "allotment," "dacha", or "garden" — as opposed to a "subsidiary plot" of a rural grower). Thus, Clarke et al. (1999) reported that in their survey (sample size 4,000, in 4 urban centers), less than 1% of dacha gardeners had any net positive monetary gain from their gardening activity.

The fact that in household gardening self-provisioning prevails so strongly over production for the market is part of the reason why this "informal" agriculture has been given insufficient attention by decision makers. However, this is in line with Russia's agricultural tradition: by the early 20th century Chaianov emphasized that for a Russian peasant

household subsistence comes first, and it is the simple subsistence needs (rather than market considerations) that determine the decisions made by the growers (Chaianov 1925).

Produce sharing networks and food security

Sedik, Sotnikov, and Wiesmann (2003) found that despite the hardships of economic transition and the decline of state-supported agriculture, Russia does not seem to be food insecure. They write (2003:12):

> While the real gross agricultural product fell by 29 percent [from 1992 to 2000]... food availability measured in terms of calories... fell by only 3 percent from 1992 to 1999. Though the mix of food available to Russians in this period has certainly changed, the food security of an average Russian during this period does not seem to have been threatened.

Not only that, but Sedik, Sotnikov, and Wiesmann conclude (2003:90) that "for the population as a whole, nutritional excess seems to be a far greater threat to public health than deficits in dietary energy." This high level of food security despite the dwindling of "official" agriculture's output is due to the proliferation of household gardens. Indeed, if the national level statistics are put in the per-household format, the contribution of food gardens to food security becomes even more evident (Table 12).

As can be seen from Table 12, food gardens make an extremely important contribution to the food economy at the household level. In fact, the significance of self-provisioning to household budgets is such that Russia's official statistics include its in-kind value as a separate line in reporting the income of the country's households. Even though, over the period from 1998 to 2003, the share of this household-grown food has decreased from 10% to 6% of income, it still represented 18% (down from 27%) for rural households (see Figure 7).

This trend is due to the growing monetary income, as the absolute physical volumes of household production did *not* decrease.

Table 12. Food gardens' agricultural output, average per household.

	2004 production, per household		per person per day	
	kg	**lb**	**grams**	**lb**
Potatoes	948	2,089	928	2.0
Vegetables	330	728	323	0.7
Fruit & berries	92	203	90	0.2
Meat	75	165	73	0.2
Milk	480	1,057	470	1.0
Eggs, number	273		0.27	

Source: Rosstat 2005b.

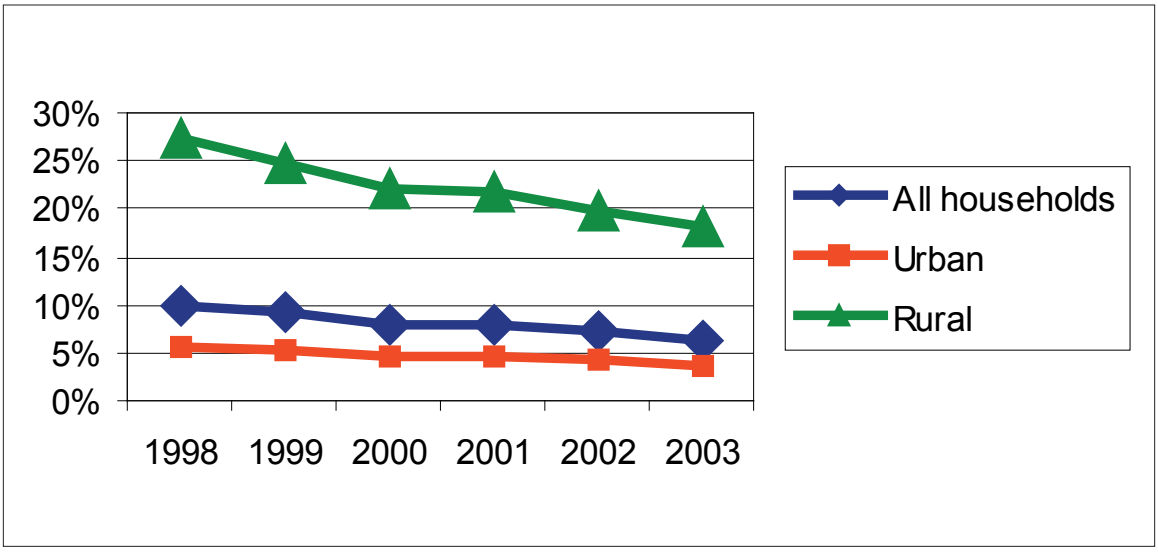


Figure 7. Subsistence growing's in-kind share in the gross income of Russian households, 1998–2003. Source: Rosstat 2005b.

Household production plays an important role for many households who do not tend a garden. Even though the bulk of products produced in household agriculture bypass the market, there is a significant amount of sharing, as the surplus is being redistributed (often for free) within a network of the extended family and friends (Lovell 2003).

In a discussion of trends in subsistence growing in rural areas from 1975 to 1994, Artemov (2002) reports that "more and more working people believed that the family could survive only by working its personal plot... [In 1994] only 10 percent of the respondents thought that they could survive without their personal plots, while 86 percent thought these were absolutely essential."

At the same time, Clarke et al. (1999) found that urban households that grow their own food spend on average the same amount of money on food purchases as the households that grow no food of their own. In addition, as noticed earlier, household income is *not* a statistically significant factor in influencing a household's decision to start and maintain a garden. These data suggest that for the majority of Russian households the significance of food production goes well beyond the self-provisioning with foodstuffs and includes all the personal, cultural, and social dimensions, which will be discussed later.

Judging by these figures, today's food gardening cannot, in most cases, be seen as a "survival strategy" of the poor in times of economic hardship, nor can food gardening be seen as any serious threat to the efficient functioning of "labor markets," since the activity is *complementary* to the "official" economy. It would also be incorrect to conclude that the role of gardening in the Russian economy and society decreases with the decrease of its in-kind contribution to household income. As we have seen above, the contribution of household food gardening to the country's agriculture has been steadily increasing over the last decade.

Other economic characteristics

Some of the other economic characteristics and potential benefits of household agriculture include: sustainability, low capital intensity, the subsidy-free character of production, contribution to decreasing inflation, import substitution, and the recreational value of gardens. There is little research or data available on these dimensions of gardening, but I will briefly outline them as an interesting area for future inquiry.

Sustainability: According to the 2006 Census of Agriculture results (Table 11 above), of the 80,342 gardening associations in existence on July 1, 2006, 23.7% were created before 1981 (i.e., were over 25 years old at the time of the Census), and 53.4% were created before 1991 (i.e., were over 15 years old). This suggests that dacha gardening is a highly sustainable practice, and gardeners successfully maintain fertility of their plots over decades. As for the subsidiary plot gardens in rural areas, since these are attached to the rural dwellings, they are usually of the same age as the dwellings or villages themselves and, having benefited from the ready availability of manure and owners' diligent care, have often maintained their fertility not only for many decades, but for centuries.

Low capital intensity: Due to the modest size of their plots, food gardeners use little or no machinery, require no long-distance transport of either the inputs or the products, thereby saving Earth's resources. They are not dependent on the availability of petroleum or other fossil fuels while providing two thirds of the country's population with the possibility of growing part of their food supply.

Subsidy-free: In 2004, the governmental expenditure on support of agribusiness totaled 78.2 bn rubles (or 18% of agribusiness's total outputs), whereas dacha food gardening — receiving no subsidies from the federal budget — remained more productive than commercial agriculture. With all the governmental support, the share of agribusiness in

the country's agricultural output has decreased from 67% in 1992 to 43% in 2004, while with no support whatsoever, the share of household producers has increased over the same period from 32% to 51%.

Decreasing inflation: Household food production increases the food supply on the market and decreases demand, which helps to keep food prices low and combat inflation. Thus, for example, from 1992 to 2004 the price of potatoes (over 90% of which are produced by households) increased by 232 times (due to the hyperinflation of the early 1990s), whereas another key staple — bread — produced by commercial agriculture or imported, increased in price by 503 times under the same inflationary conditions.

Import substitution: Even though Russia is a large importer of foodstuffs ($13.9 bn in 2004), many of the crops that are produced by households (notably potatoes and vegetables) are produced in quantities satisfying most of the consumption requirements of the population. For example, in 2004 households produced 33 million tonnes of potatoes, and only 0.2 million tonnes were imported. If households were not producing over half the agricultural output of the country, food imports would have to be substantially higher. This is corroborated by the findings of Sedik, Sotnikov, and Wiesmann (2003): even during the economic crisis of the 1990s, Russia continued to be less dependent on food imports than developed industrialized countries as a whole, or Europe, or Japan.

Recreational use: Clarke et al. (1999) found that urban gardeners in their four cities surveyed spend on average $1,000 worth of their work time to produce $140 worth of food. This suggests that the recreational value of gardening may be higher than the value of the foodstuffs produced ($14 bn).

Conclusion: household agriculture vs. commercial agriculture

The case of modern Russia's agriculture provides empirical evidence that an alternative organization of agriculture is possible today even in an industrially developed economy, and that this alternative organization can go a long way towards satisfying a country's food requirements while offering many other benefits.

Some of the distinctions between Russia's conventional agriculture and the household production are shown in Table 13.

Table 13. Characteristics of conventional vs. household agriculture in modern Russia.

	Conventional agriculture	**Households**
Output (2004)	49%	51%
Land area (2006)	434 mln ha	11 mln ha
Average size (2006)	104 ha (indiv. farmers) 6,833 ha (enterprises)	0.07 (gardens) 0.51 ha (subsidiary plots)
Cultivation	machinery	manual
Labor	wage	family
Capital	high	low
Foodshed	national	local
Primary purpose	market	self-provisioning
Petroleum dependency	high	none
Subsidies	high	none
Land owned	enterprise or individual farmer	household
Crops	monoculture	diverse polyculture
Role of perennial crops	very low	high

As discussed above, the important economic characteristics of food gardening in Russia include:

- **Productivity:** The total agricultural output of gardens (by market value) outweighs that of commercial producers;
- **High land-use efficiency:** While gardens occupy 2.5% of lands involved in agriculture in Russia, they produce over 50% of the total agricultural output (by value);

- **Subsidy-free**: This mode of agriculture receives no direct subsidies from the government;
- **High sustainability:** Dacha garden-plots are kept productive indefinitely, while gardeners use mostly organic soil amendments;
- **Low capital intensity:** Most gardeners use little or no machinery to cultivate their plots;
- **Small scale and high diversity of production:** Diverse crops are grown on a very small scale, which contributes to environmental sustainability and productivity of gardens;
- **Family labor:** Gardeners employ little hired labor; and
- **Subsistence orientation:** Most of the produce is grown for personal consumption; the surplus may be sold or shared.

If food gardening can be so beneficial without any support from the state and despite the stringent limits imposed on the size of garden-plots, then it would seem that even a modicum of governmental support, and especially providing access to relatively larger plots of land, could further increase the contribution of household growers to the national economy.

In addition to its primary economic importance, food gardening has important social and cultural, as well as environmental and natural resource characteristics. Those will be discussed in the following sections.

Benefits of household food gardening

The sheer amount of physical output of food produced by Russian gardeners tends to eclipse everything else and give an impression that it is exactly this output that forms the primary (for some researchers even the *only*) goal, and benefit, of the gardening activity. Indeed, if *tens of millions* of tonnes of potatoes, other vegetables and fruit are produced each year, valued at *billions* of dollars — what greater benefit could there be?

However, no matter how hard orthodox economists try to punch down the dough of food gardening back into the bowl of economic theory, the dough keeps rising and spilling over the edge. The neo-economics approach is too restrictive and we need to consider many important benefits as real as, but less "tangible" than sacks of potatoes. We need "a wider view."

E.F. Schumacher wrote in *Small is beautiful* (1975:112–113):

> Man's management of the land must be primarily oriented towards three goals — health, beauty, and permanence. The fourth goal — the only one accepted by the experts — productivity, will then be attained almost as a by-product. The crude materialist view sees agriculture as "essentially directed towards food-production." A wider view sees agriculture as having to fulfil at least three tasks:
> — to keep man in touch with living nature, of which he is and remains a highly vulnerable part;
> — to humanise and ennoble man's wider habitat; and
> — to bring forth the foodstuffs and other materials which are needed for a becoming life.
> I do not believe that a civilisation which recognises only the third of these tasks, and which pursues it with such ruthlessness and violence that the other two tasks are not merely neglected but systematically counteracted, has any chance of long-term survival.

As we shall see from further discussion, Russian food gardening is brilliantly coping with all three tasks, at the same time demonstrating that what Schumacher (1975) envisioned

was not only "beautiful," but is also highly practicable. Far from being an abstract philosophical statement, the above quote is an expression of an understanding that any economic activity has important socio-cultural, environmental, and natural-resource-use dimensions that must be fully taken into account.

Besides, Schumacher (1975) criticized the separation of the economic concepts of "production" and "consumption." Such separation is artificial, and there are entire societies that even do not have concepts of "work" separate from "leisure" (Liedloff 1975). While conventional economics maintains that only the "consumer" derives "utility" or "pleasure" from the economic system, Schumacher observed that with *creative* labor involving both one's hands and brains in the benefit of one's family, the production process itself can be as satisfying as consumption of any "product." After all, what matters is not the levels of "production" or "consumption" per se, but the *enjoyment* humans derive from both, while assuring health of the environment and equitable social practices.

On all these accounts, food gardening stands out as a holistic practice offering all of these economic, personal, social, and cultural benefits. In view of Schumacher's (1975) framework of an "economy as if people mattered," it is not in the least surprising that Russian *dachniks* derive great satisfaction from the *process* of gardening (Lovell 2003), as well as see the resulting produce as fundamentally different and superior to anything that can be bought in the market.

Daly (1977) based his concept of a steady-state economy on a similar understanding that he summarized in the formula:

$$\frac{\text{service}}{\text{throughput}} \equiv \frac{\text{service}}{\text{stock}} \times \frac{\text{stock}}{\text{throughput}}$$

where "service" is an amount of "psychic income," or enjoyment, derived by humans; "stock" is the sum total of the means of production required by the economy; and "throughput" is the environmental (entropy) cost of the economic activity. In this view, the highest economic efficiency is defined as deriving the greatest "service" (human enjoyment) while consuming the minimum amount of resources. It is clear that the economic system thus described involves, apart from the "production" side (often referred to as *the* economic dimension), the equally important *human* and *environmental* dimensions.

The economic dimension of food gardening was discussed in the previous section. In this section we will discuss some of the environmental and human characteristics. Since little research is available on these characteristics of Russian household gardening practice, I will limit myself to a brief general discussion, with some parallels to research available on the benefits of gardening in America.

Natural resource, agricultural, and sustainability dimension

Little hard data or research are available even on the economic and social benefits of food gardening, and still less on gardens' ecological implications. Here are several implications (usually based on anecdotal evidence or qualitative research) reported by researchers:

Soil conservation

As numerous researchers have noted (e.g., Lovell 2003), the Soviet government had the policy of allowing dacha gardening only on marginal, unproductive, or overexploited lands that could not be used in state-run agriculture. And it is on exactly these lands that gardeners have consistently been producing large crops of vegetables and fruits ever since private gardens were re-authorized in 1941. An agronomist who studied dacha gardening practices

for several decades, Kurdiumov (2003) observed that most of the gardeners grow their produce without chemical fertilizers. This evidence suggests that gardeners have not only been successful in preserving soil fertility, but have even improved it over time.

Decreasing chemical pollution

Gardeners producing over 50% of the agricultural output of Russia are more likely to rely on organic or predominantly organic growing methods. There are at least three major reasons for this: a) *motivation* — they are growing food for themselves and their families rather than for sale to strangers on the market; b) *scale and diversity* — the small-scale, highly diverse operations such as gardens are much easier to maintain using organic methods than large-scale industrial operations; and c) *tradition*.

Even when chemical fertilizers and pesticides *are* used by gardeners, they are likely to be cautious about the amounts applied, and the decentralized application on the very small scale is likely to have much less impact on the environment than industrial, large-scale application. Besides, as Martynov, Artiukhov, and Vinogradov note (1998), during the Soviet period, it was the central authorities, and not the farms themselves, that determined chemical fertilizer and pesticide application rates. *Kolkhozes* and *sovkhozes* received chemical-use directives that rarely reflected actual agronomic needs. These directives were often followed on paper only, and the chemicals reported as used in the fields were simply discarded in piles in the windbreaks and forest glades adjacent to the farmland, with dire consequences for the environment (Figure 8). When the practice subsided in the 1990s as the output of collective farming dwindled and was replaced by household production, significant abatement of environmental pollution with agrochemicals (especially that of watersheds) was observed (Martynov, Artiukhov, and Vinogradov 1998).

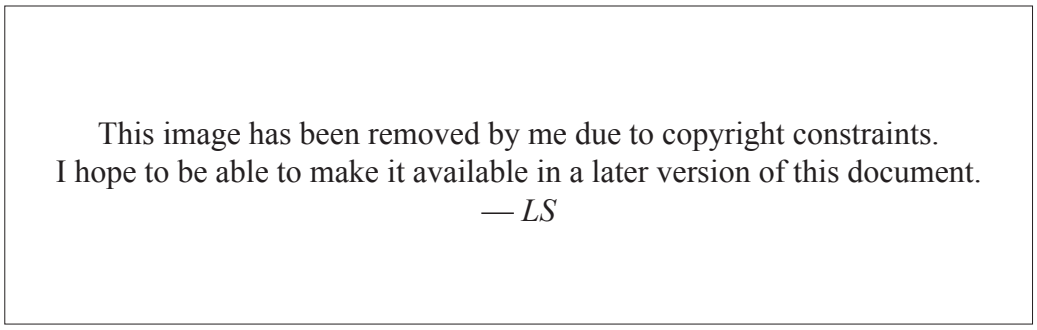


Figure 8. “A fertilizer-saving debate.” A satyrical Soviet poster. While workers on a collective farm decide what to do with their allotment of chemical fertilizer, the problem disappears all by itself as the fertilizer pile is washed away by rains. Published in 1979 by Khudozhnik RSFSR. Artist: L. Kaminskii. Verse by E. Efimovskii.

Organic husbandry minimizes agrochemical pollution — not only from the gardens themselves, but from commercial agriculture as well (since gardeners, by producing the bulk of potatoes, vegetables, and fruit in the country, decrease the burden on commercially farmed agricultural lands). The same benefits apply to household livestock operations as compared to concentrated feeding operations: as the largest producer of milk and meat, individual households decrease pollution from livestock through the extremely decentralized and small-scale production. In addition, most of the manure is beneficially used to fertilize the garden-plot.

Wildlife and biodiversity

Gardens provide important wildlife conservation benefits — both directly and indirectly. Garden plantings usually include a variety of annual crops, berry bushes, and trees, which encourages biodiversity by providing wildlife with habitat and food. Organic gardening methods prevent chemical damage to wildlife (especially birds). Since food gardening decreases the burden on commercial agriculture, the area of agricultural lands used have been decreasing since the early 1990s. The abandoned old fields (usually on unproductive, overused lands) revert to natural succession, and enhance wildlife populations.

Natural resources conservation

Food gardening, done mostly by hand, requires a minimal amount of inputs (low-input agriculture), which conserves natural resources, e.g., the absence of tractors and other machinery conserves petroleum resources. Some urban planners have observed that dachas require a substantial quantity of resources to get to (transportation) and to build and maintain the summer house. However, urbanites would require the same amount of resources

for transportation and building their dacha even if they did not engage in productive food gardening on their plots, therefore the use of the resources for transportation (and many dachniks routinely use public transportation rather than private automobiles) cannot be attributed to food gardening alone.

The human dimension

Satisfying the psychological need for interaction with plants and nature

A major underlying reason for starting and managing a food garden is maintaining the gardener's psychological and physical connection to the land — and the psychological benefits that come when this connection is established. In this sense, Russian gardeners are similar to their American counterparts.

Over the course of human history — both many millennia ago as well as in our recent past — many prominent thinkers held the view that a simple life in close contact with nature is a precondition for happiness and peace. This is how, for example, Leo Tolstoy expressed this idea in *What I believe* in 1884 (Tolstoi 1991):

> One of the first and universally acknowledged preconditions for happiness is living in close contact with nature, i.e., living under the open sky, in the light of the sun, in the fresh air; interacting with the earth, plants, and animals. Being deprived of these experiences has always been seen as a huge misfortune. It is felt most acutely by people locked up in prison. Just look at the life of those who adhere to the dogmas of today's world: the greater success they enjoy in terms of what the world teaches, the more they are deprived of this precondition for happiness.

Consistent with this understanding, Count Tolstoy himself — despite his considerable wealth and high social status — led a simple peasant-like life, tilled the soil, and derived great moral satisfaction from growing his own food. As I will show, Tolstoy's ethical views

have recently been vindicated by scientists. Indeed, the notion of humanity's deep spiritual connection to nature through agriculture persists to the present day not only in most of the world's religions, but even in the everyday customs and vocabulary.

Despite the above and the widespread personal experiences of the positive effects of gardening, until recently scientists have viewed the human-nature relationship through the prisms of utilitarianism, and the spiritual — or psychological — significance of this relationship has been for the most part downplayed or ignored. The difficulty of obtaining hard data on the psychological benefits of gardening and scarcity of funding of research on the topic have contributed further to the perception of these psychological benefits and psychological *causes* of gardening as insignificant.

Over the past three decades, however, scholars in disciplines as diverse as economics, agriculture, sociology, psychology, medicine, human development, anthropology, etc. have increasingly recognized the important role nature in general and gardening in particular play in human well-being. This role is not limited to providing necessary resources for the economy (productive use) and being a source of enjoyment and aesthetical pleasure (recreational uses), but goes far deeper. Echoing Leo Tolstoy's quote above, scientists have suggested that nature and plants are an important pre-condition for both the psychological and physical well-being of humans, and we need food plants for more than food, and green spaces for more than pleasure (Malakoff 1995).

Thus, psychologists have found that interaction with plants (or even just *looking* at plants) can reduce stress, fear, and fatigue, and even lower blood pressure and muscle tension (Ulrich and Parsons 1991). In other studies, prisoners (compare with Tolstoy's observation above) living in cells with windows allowing a view of green space required less medical attention and showed fewer symptoms of stress, e.g., headaches (Relf 1992). In the

last three decades, many more studies have corroborated these findings. For example, the Plant-People Council, a networking organization of horticulturists led by Dr. Diane Relf of Virginia Polytechnic Institute, has compiled a bibliography of 1,200 articles on the human dimension of gardening and the psychological benefits of gardens (Malakoff 1995).

In trying to explain the reasons for this psychological connection, several scientists have put forth the idea of evolutionary adaptation to the natural rather than artificial surrounding (Sullivan 2005). They hypothesized that not only the physical, but also the psychological make-up of humanity has been shaped by and adapted to life in close contact with vegetation, and deprivation of this contact negatively affects both the psychological and physical well-being.

In a recent academic volume, *Urban place: Reconnecting with the natural world* (Barlett 2005), researchers of different disciplines summarized the evidence that the natural environment and gardening have a positive affect on the psychological well-being of people. Among other things, it is reported that gardens provide important psychological healing benefits to victims of domestic violence. Stuart (2005) found that in the surveyed domestic violence shelters, the psychotherapeutic benefits of gardening were perceived as far more important than the produce grown. The nature of environments and landscapes has been shown to have an effect on the psychological and physical well-being of people and even on the rate of recovery from surgeries and diseases in controlled experiment studies (Frumkin 2005).

In confirmation of what many philosophical and spiritual thinkers have been teaching for a very long time, research has demonstrated that both contact with nature in general and gardening or food-growing experience in particular have a deep psychological response in human nature. I therefore suggest that this primary reason for gardening — maintaining the psychological connection with the land and nature — must be similarly important in

both Russia and the U.S. Indeed, as Lovell (2003) has reported on the basis of his extensive study of the cultural significance of *dacha* food gardening in Russia, the psychological (often referred to by respondents as "spiritual") benefits of the practice are one of the important reasons why the practice is so widespread.

The emerging field of Horticultural Therapy has further contributed to our understanding of the role of gardening in physical and mental wellness. Over the past several decades the American Horticultural Therapy Association and the *Journal of Therapeutic Horticulture* have been providing valuable scholarly contributions on the role of gardening in therapy and rehabilitation in a wide variety of settings (ranging from psychiatric wards to cancer care to child development to substance abuse treatment), as well as forwarding the practical application of the practice.

Health and physical well-being

Both Russian and American sources report the positive influence of gardening on health (e.g., Lewis and Mattson 1988; and other articles from the *Journal of Horticultural Therapy*), largely due to three factors. First, involvement in the beneficial physical activity of gardening rather than passive pastime such as watching TV. In fact, the energy expenditure of gardening is comparable to that of doing aerobics (Malakoff 1995). Second, gardeners gain access to high-quality fresh produce that may otherwise not be available. Third, gardeners escape the urban heat, pollution or disease in the summer months. This last point is of greater relevance to Russia than to the U.S. In Russia, all of the rural residents' "subsidiary plots" and most of the urbanites' dacha garden-plots are located outside city limits, and going to a dacha as a means of escaping the city heat and air pollution in the summer was one of the moving forces behind the growth of the dacha movement at least as far back

as the 19th century (Lovell 2003). Most Russian urbanites who own a dacha go there on weekends and summer holidays. By comparison, most urban Americans who tend a garden do so either in their back yard in the suburbs or in a local community garden.

Personal self-esteem and independence

The psychological, human dimension of food gardening goes well beyond the mere "healing" or "calming" effect of digging in the soil and involves a wide array of aspects of human personality. The descriptions of all these "intangible" but subjectively very strongly felt personal benefits of gardening are often very much alike in the accounts on American and Russian gardeners' attitudes. This suggests that the personal motivation for starting and managing a garden may be similar both in Russia and America. *Sense of purpose*, *pride (for the agricultural achievement)* and *self-esteem* are often cited personal benefits of gardening both in American (Malakoff 1995; Williams and Mattson 1988) and in Russian (Lovell 2003) gardening contexts. Besides, the feeling of *independence* that comes from growing even part of one's food supply is reported to be important to many gardeners in both countries. In fact, the value attached to economic self-sufficiency and a high degree of independence was a common trait of peasantry in pre-revolutionary Russia (as emphasized in Chaianov 1925), and this attitude largely survived during the Soviet period and up to the present with the aid of garden-plots. Likewise, American sociologists observed that economic independence and self-sufficiency through growing one's own food have remained important agrarian values even after the majority of farmers have lost both their self-sufficiency and economic independence (Flinn and Johnson 1974) and even persisted in urban populations (Buttel and Flinn 1975). The persistence of ethical values associated with food-growing (both farming and gardening) points in the direction of *tradition* as

another important factor shaping the attitude to food gardening and the decision to start and maintain a garden.

Tradition

The tradition of food gardening seems to have a significantly greater continuity and to play a much more important role in Russia than in the U.S. In Russia, the tradition of peasant living (including food-growing) has to a large degree continued without interruption from the very remote past to the period of peasant economy (late 19th – early 20th century), throughout the Soviet period and to the present day. Even during the period of Stalin's collectivization of agriculture in the 1930s and on, peasants maintained their private gardens (Fitzpatrick 1994). At the same time, millions of urban families have maintained the same link through their *dacha* garden-plots, which are similar in many respects to the peasant households of a century earlier (Sharashkin and Barham 2005b). According to official statistics, over 50% of all urban households continue to grow part of their food supply. In a large survey of household survival strategies (n=4,000) in four different regions of Russia in the mid-1990s, researchers found that urban households with a member (or parents of a member) who has lived in a rural area were more likely to tend a garden than the households without the immediate "family memory" of food-growing tradition (Clarke et al. 1999).

In the U.S., researchers have found that food gardening is important for upholding agricultural tradition and maintaining cultural identity in certain instances, especially in ethnic minority groups and recent immigrants to the U.S. from agrarian countries (Lynch and Brusi 2005). However, sociologists have long voiced concern over the alarming degree to which American society in general is removed from connection to the food they eat and the tradition of growing one's own food.

Hobby and recreation

Many of the above benefits and motivations are encompassed in the generic notion of food gardening as a hobby or recreational leisure activity — something that people do for its own sake, because they like it. But this particular kind of leisure or recreation is a productive one. A study has found, for example, that in four different regions of Russia there was no statistical difference in the amount of produce grown between gardeners who indicated "hobby" as the primary reason for tending a garden and those who cultivate it primarily for food production. At the same time, even the "hobbyists" contributed over 500 hours of labor per growing season to their plot cultivation (Clarke et al. 1999). Likewise, recreation is viewed as an important reason for food gardening in the U.S. (Lawson 2005). However, Lawson (2005) stresses that, unlike some other kinds of recreation, gardening involves an *active* interaction with nature rather than a passive one, which provides greater benefits to the gardener.

Social interaction

Both in Russia and the U.S., researchers have emphasized the social and community-building benefits of community gardening. Further, in both Russia and the U.S., gardeners enjoy an increased degree of social interaction among themselves, which is of great importance to residents of larger cities where the possibilities of informal interaction in a creative and natural setting are limited (Malakoff 1995). However, the *family* aspect of gardening seems to be more prominent in Russia. During the Soviet times, dachas provided the cherished opportunity to be with one's family in a private setting outside the reach of city surveillance, and together participate in creative labor, working on common tasks (Lovell 2003). As we shall see from the further discussion, the role of gardens in preserving the tradition of land-based family life is still of great relevance today.

Community development

In the U.S., many studies have found that the community-building resulting from community gardening efforts may provide many benefits to the community including a better image of the community, higher property values, and reduced crime (Gateway Greening 2008; Malakoff 1995). Of course, few gardeners probably make a conscious choice to start and tend a garden to make their neighborhood safer, but these are important "by-product" benefits of gardening nevertheless.

In Russia, on the other hand, the proliferation of dachas has led to a tremendous increase of certain types of crime, mostly theft of agricultural produce from the plots (which are now almost invariably surrounded by a high fence) and, more recently, the widespread robbery (often well-organized) of the summerhouses in wintertime, when they are left unattended. In some regions, the problem has been exacerbated to such a degree that gardeners abandon their plots.

Child development and education

One of the aspects of the family dimension of gardening is the desire on the part of parents to provide their children with a better environment and an opportunity to explore nature and gain gardening skills. Since in Russia most urbanites live in apartment blocks and family-home suburbs are largely non-existent, for many families a dacha plot affords the only opportunity to garden. In the U.S., children's education and learning is stated as one of the important benefits of community gardening (Lawson 2005; Williams and Mattson 1988).

Other benefits

Some of the other benefits of gardening include:

- **Social justice and food security** — food gardening fosters communities and improves communities' access to food and food security (under conditions of equitable access to the land and available skills — both conditions largely met in Russia). We shall see in the next chapter that the results of our own survey in the Vladimir region of Russia confirm the important social and community-building function of gardening.
- **Entrepreneurship** — the sale of locally-grown produce enhances local economy and boosts local, small-scale enterprise.
- **Aesthetics** — food gardens beautify both urban, suburban, and rural communities and landscapes.
- **Personal development and educational** — food gardening provides individuals and communities with the possibility of acquiring new skills and gaining a better appreciation of the natural environment, and also contributes to their physical and psychological well-being and development.
- **Cultural** — food gardening helps to sustain the tradition of economic self-reliance and physical and spiritual attachment to the land. In the case of household gardening in Russia, this aspect seems to be so important that we shall now turn to the discussion of the cultural dimension of gardening.

Culture and agriculture

In October 2004, the University of Missouri's Horticulture and Agroforestry research farm hosted its second annual Chestnut Roast. In one of the spacious tents a kids' corner was set up. It featured a sustainable farm model designed to teach children about where their food was coming from, as well as a manual corn grinder where everybody could grind some cornmeal to take home. My attention was captured by a red-haired boy who enthusiastically took to corn grinding and vigorously turned the wheel for at least ten minutes — oblivious of the small queue of children that formed behind him — until the receiving container was filled to the brim. Then, stepping down from the grinder and sweeping some sweat over his brows, the eight-year-old lad admired his work. "Good job!" exclaimed the attendant in charge of the exhibit. "Now what can you do with all this cornmeal?" He expected, no doubt, an answer such as *"Make cornbread.*" The little fellow gave him a puzzled look but after a brief pause came up with a victorious answer: *"Sell it!"*

Two years later, in the Vladimir region, Russia, I was returning to my rural home after some errands in town. I gave a short ride to a village woman in her fifties and — enjoying our conversation on how to bring the dying countryside back to life — decided to go out of my way just a couple miles to drop her off right at the front step of her house (otherwise she would have had to cover this remaining distance on foot, with two heavy bags she was hauling). As my car was making the last mile slowly on the barely passable dirt road washed out by the autumn rain, she said she wanted to offer me "some apples," of which she had a surplus. Enjoying the heirloom varieties that local villagers were growing in their gardens, and having at home two great consumers of fresh-pressed apple juice — a five-year-old

daughter and a pregnant wife — I did not refuse. As we arrived, we stepped into the cold room attached to her *izba*, and she started loading a large nylon sack with apples. After the second bucket I tried to protest that it was too much. "Never mind — you've got your car to carry it! Do come back when you need more," she said as she dumped a third bucket into the sack. Uncomfortable with receiving such a generous gift, I offered her some money in return. The rustic look of her modest old house told me that she could certainly put to good use every ruble I was holding out to her. But my offer of money was met with a vehement rebuttal. "NO!" she almost cried out to me. "God forbid!" She looked very offended. I hid the money, thanked her, loaded the 40-pound sack into the trunk and left.

To me these two little stories exemplify the vast cultural differences that separate today's mainstream commercial agriculture in the United States and elsewhere in the "civilized Western world" from Russia's family food gardens. While in America an eight-year-old boy feels that agriculture is just another "industry" or "business" — which is all about making money, for a great many Russians their gardening expresses values of a totally different order, and even the surplus harvest is more readily shared than sold.

Indeed, I find it deeply symbolic that the Russian word *dachnik* ("gardener") stems from the root *dat'* signifying *to give*, while the contemporary English verb *to farm* is linked, etymologically, to the concept of *taking*! Which two more different practices and worldviews they manifest can you find than "give-agriculture" and "take-agriculture"?

Therefore, as we approach the subject of Russian gardening, we need to be mindful of what is possibly a fundamentally different attitude to treating the land and what grows on it. Agricultural practices — as most human activities — are embedded in their *cultural* context. This has two very important implications.

First, a study of agriculture without thorough knowledge and understanding of its cultural context may yield misleading results. And, second, the "laws" (especially the laws of economics) that were established in one context may not work in a different context.

By way of example, let me cite a recent article that examined the connection of dacha gardening with labor markets (Southworth 2006). That paper focuses "on the economic rationality of the household, not cultural factors" and treats the dacha "as a labor-market institution" (p. 452). In building the model, the author defines all dacha plots on which potatoes were grown as "subsistence dachas," while those without potato plantings as "luxury dachas" (geared primarily towards recreation) — only to find that "growing potatoes per se is not a function of income at all" (p. 469). The author uses his statistical models to calculate, among other variables, "profitability [in monetary terms] of household agriculture," to make a "cost-benefit analysis of growing vegetables" and even to figure out "rates of return" on gardening costs (p. 465), while at the same time *excluding* from the analysis the amount of labor households expend on gardening. Southworth concludes that "the attachment of the average urban household to the means of subsistence [i.e., food gardening] limits the ability of the market to allocate the most common sort of labor needed to fuel an economic recovery based on the production of goods and services rather than on oil and natural resources alone" (p. 473) without even considering a possibility of economic recovery *through* food gardening itself (after all, food gardening *is* a form of "production of goods," too — and a very efficient form at that).

Without discussing here the soundness of the results arrived at by Southworth (2006), let us ponder the question as to whether, in the first place, the "cultural factors" can be excluded from the analysis at all. Since the practice of "household agriculture" in Russia predates the appearance of "labor markets" in their contemporary form by hundreds of

years, can we even treat dacha gardening as a "labor-market institution"? Can we ignore the fact that a century ago Alexander Chaianov was already arguing that the laws of Western economics and capitalist farming had little applicability, if any at all, to the economy of Russian peasant households? How would the separation of dacha into "subsistence" and "luxury" classes on the basis of the presence of potato plantings hold up in view of the extensive evidence that even the highest elite commonly participate in potato planting and even, as in the case of the Nobel-prize winner Boris Pasternak, talk about it as a means for "spiritual salvation" (Sergay 2005)?

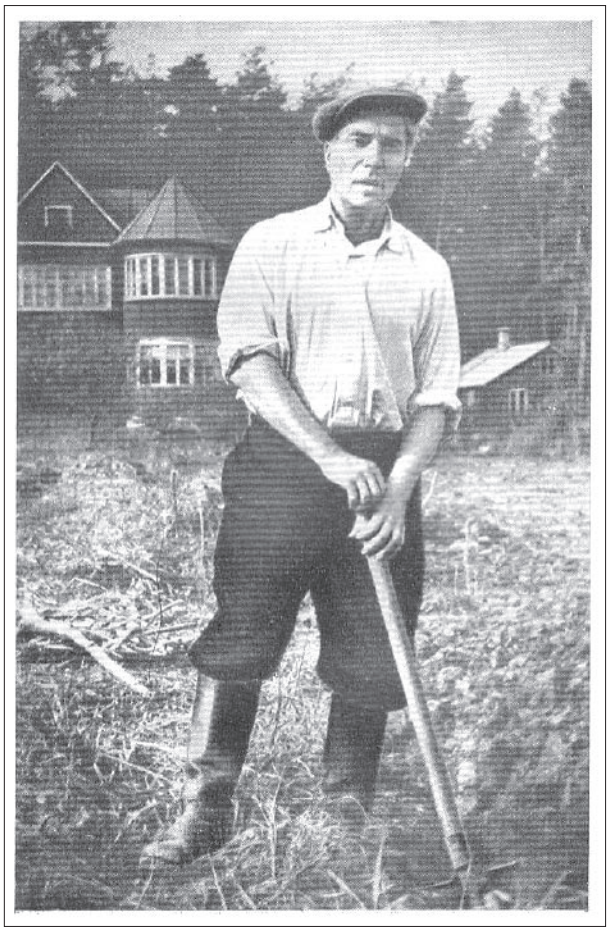


Figure 9: Boris Pasternak digging a potato patch at his dacha in Peredelkino, near Moscow, in the summer of 1958. Photo from the *Biblioteka poeta* edition of Paternak's works, published in Moscow and Leningrad by Sovetskii pisatel', 1965.

All of these questions suggest that before the "tradition" or "cultural factors" are excluded from any analysis, an intelligent discussion of the reasons for such exclusion, as well as its implications, must be presented. Southworth is one of the many researchers who provide little justification for not taking the cultural dimension of dacha gardening into account.

It is not only, however, the cultural dimension of household gardening that is afforded little attention by most researchers and decision-makers. Even the most readily observable and easiest to measure — the *economic* importance of household gardens — is often given insufficient recognition. As we shall see in the subsequent discussion, the reasons for ignoring the place of family gardens in the nation's economy, society, and culture are purely ideological — as these elements do not fit into the value system of a particular school of thought a researcher or decision-maker adheres to.

Definitions: culture and values

Due to the importance of the cultural dimension in the holistic understanding of the food gardening phenomenon, we need to define this cultural dimension with more precision. As it happens, many of the most basic concepts with meanings that we can often grasp intuitively are the most difficult to define and express in words. As observed by a number of researchers (e.g., Lovell 2003), many Russian gardeners grow food largely for the feeling of satisfaction from the activity itself, and from bringing in one's own harvest. This is what one of the founders of ecological economics, Herman Daly (1977), termed *psychic income*, i.e., personal enjoyment derived from an activity. This "enjoyment," while being a very real experience on the part of millions of gardeners, is at the same time difficult to measure or define with exactness. It is therefore not surprising that there are different (and

at times somewhat conflicting) definitions of such terms as *culture* and *value*, not only in scholarly disciplines but in everyday life as well. I shall now define these terms for the purposes of this study.

Definition of culture

For the purposes and in the context of this dissertation, I refer to culture as *a reservoir of shared meaning*. As Johnson (1995:68) put it more simply, "culture doesn't [only] refer to what people actually do, but to the ideas they share about what they do." Approached in this way, culture has both material and ideational dimensions, but the material dimension is just as relevant and important as conveying the meaning, or serving as a material embodiment of the ideational dimension. For example, a simple household object such as a distaff (Figure 10), can be imbued with cosmological significance and reflect the foundations of a people's worldview and religion.

This cultural dimension of food gardening and agriculture is especially important because: a) the outwardly similar actions may have different meanings to different actors and b) the "non-material" nature of this dimension presents difficulties for its scientific investigation (including identification and measuring), and, as a result, it has been under-researched and given insufficient attention.

While social scientists and other scholars (e.g., Max Weber, Talcott Parsons, Clifford Geertz, and many others) have given different definitions of culture[1] and no standard

[1]For example, Parsons and Shils (1951:105): "When such generalization occurs [i.e., when meanings and symbols become shared or generalized], and actions, gestures or symbols have more or less the same meaning for different actors, we may speak of a common culture existing between them through which their interaction is mediated."

Figure 10. Old Russian distaffs decorated with pagan symbols of the Sun, Earth and Water — three elements central to fertility and life. From Bobrinskii (1911).

definition exists even within disciplines, I see the centrality of the fundamental notion of *meaning* (or, in Weber's words, "value-orientation") in the majority of these definitions as most relevant to this research.

For example, the same simple action of planting potatoes may have drastically different meanings for different people. It can be perceived by the actor as, for example, a) a way to produce food to eat, b) a way to make money through the sale of the crop, c) a conversation with God, or many other things besides. These differences have important implications.

The first implication is that even though the action is the same, the different meanings attached to it determine the conditions under which the action will or will not be undertaken. That is, in the case (b) above, the actor is not likely to plant potatoes if there is no market for them nor a good prospect of selling them at an attractive price;[2] but at the same time, the market value (price) of potatoes may be of little or no importance for someone who is hungry or someone who — through gardening — seeks a reconnection with the Divine.

The second implication is that while the action can be directly observed, and the result of the action can in this case be observed and even measured (i.e., the mass of the potato harvest), the meaning attached to the activity is invisible — and thus is much easier to "overlook" than the palpable result of the action. We may or may not be able to get a glimpse of the meaning the actor attaches to the activity through observing him or her work (picking up the facial expressions, etc.) or questioning him or her, but if the only thing we know is a bit of data such as "in 2004 Russian gardeners grew 33 million tonnes of potatoes," the meaning remains largely hidden from us.

[2]I remember the owner of an organic fruit farm in Hawaii where I worked in 2001 telling us (the workers): "D'you see this beautiful orange papaya there on the tree? It is not a papaya! It is a three-dollar bill! You go and get it for me!" I looked as best I could, but where my boss saw nothing but "three-dollar bills" hanging on trees, I could only see beautiful fruit. A cultural difference, it must be.

A related danger arises when different terms are used to refer to the same practice. For example, a thousand years ago Russian families were growing their own food. A hundred years ago Russian families were growing their own food. Today, Russian families still grow their own food in small-scale operations almost identical to the peasant practices of the 19th century or these of the even more distant past. However, since the term "dacha gardening" became widespread only in the second half of the 20th century, many researchers tend to see the self-provisioning practice as something new. Indeed, even in his *Summerfolk: A history of the dacha*, Lovell (2003) presents what is more a history of the *word term* "dacha," than a history of the *practice* that today happens to bear this name.

I believe that it is the failure to take note of, study, and understand the range of meanings attached by Russian gardeners to their food-growing activities that prevented many of the scholars who attempted to study the practice (especially economists embracing the neo-classical economics way of viewing the world) from logically explaining it and even making sense of their own findings (e.g., Clarke et al. 1999). Why is it that those who are *not* poor and have secure access to food, still grow their own food? Why do people spend $1,000 worth of their work time to produce $140 worth of vegetables? Why do they sell their produce at *below* their production costs? Maybe it is just a recreational or leisure activity — but what kind of leisure is that: spending 550 hours per growing season on hard, backbreaking labor? Faced with these questions, the standard economics approaches break down, and the questions remain unanswered (or, in many cases, avoided, when researchers gloss over the "cultural significance of agriculture for Russians"). It will not be possible to answer these questions without the study of this sphere of meanings, or what I refer to here as the "cultural dimension."

Definition of values

The term *values* as used here refers to what constitutes this invisible dimension of culture, i.e., to *the patterns of meaning* which can be said to have assumed a certain form or direction ("value-orientation" of Weber and Parsons). I am referring primarily to cognitive (truth), appreciative (beauty), and moral (rightness) values. For the purposes of my dissertation, I do not attempt a detailed differentiation of these patterns of meaning (i.e., I am not trying to draw a hard line between values, beliefs, norms, feelings, attitudes, etc.), but rather adopt a more existential approach (i.e., treating all *inner experiences* as "values") or phenomenological approach (i.e., viewing values as constituents of a *worldview*). Previous studies have shown that even gardeners themselves often cannot clearly explain the reasons for which they engage in gardening, and have difficulty elaborating on this topic beyond a statement such as "I like it" (Clarke et al. 1999).

Cultural values

A major question that arises in the study of the interaction between human beings and nature, and the patterns of meaning (values) attached to nature (and, more specifically in our case, to gardening and agriculture) is the boundary between what is "cultural" (transmitted through the artificial system of symbols and meanings) and what is "natural." In American social sciences all "values" have traditionally been understood as "concepts" — "cultural" by definition. In the last three decades, however, a number of authors (especially authors with anthropological backgrounds) have stressed that certain patterns of meaning may be not cultural, but natural, i.e., forming part of human beings' psychological make-up. In *The Continuum Concept* by Jean Liedloff (1975) and more recently in *The Spell of the Sensuous* by David Abram (1996), it was emphasized that the human psyche is a product of evolution

to the same extent as the human body is, and therefore love for nature, for example, may not be a cultural concept, but part of "human nature." Recent studies have confirmed (even in controlled clinical experiments) that nature positively affects both the psychological and the physical well-being on a deeper than cultural level (e.g., Sullivan 2005).

So "cultural values" may not be the ideal term to describe the whole range of gardeners' attitudes and patterns of meaning stemming from their direct interaction with living nature. I will sometimes use the term "cultural values" to draw a distinction between the "values" in the sense described above and "economic value" ("utility"). This distinction is all the more poignant since, as I mentioned before, most of the research on the significance of food gardening has involved only the economic value of the practice, which leaves out other important constituents of the value dimension.

Spiritual values

In fact, the term that in some contexts will be appropriate to use when referring to these "non-economic" values of gardening is *spiritual values*. Even though until recently the words "spiritual" and "spirituality" were *persona non grata* in academic or policy-making vocabulary — largely because of the prevalence of the ideals of secularization of education and state on all levels, and the perception of "spirituality" as necessarily relating to an organized religion and church — the notion of *spiritual* needs and values has recently been recognized and used ever more widely (even though the exact definition is not always provided).

Thus, for example, in 1995, the governments of 10 countries (Australia, Canada, Chile, China, Japan, Mexico, New Zealand, North Korea, Russia, and USA) signed the Santiago Declaration, adopting a list of 67 indicators for sustainable management of boreal forests,

now used internationally to define and measure sustainability of forestry practices. Indicator #42 specifically addresses the forest areas protected for the preservation of "cultural, social and spiritual needs and values" (Sharashkin 2000). However, just what these "spiritual needs and values" are is not defined. The World Conservation Union (IUCN) has established a Cultural and Spiritual Values Task Force — a networking effort "to identify, define, and provide guidelines for managing the cultural and spiritual dimensions of protected areas" (IUCN 2005). The terms *spiritual values* and *spiritual dimensions* are not defined.

Even psychology — which insisted on using the undefined term *psyche* to refer to what had previously been called the human "spirit" or "soul" — is of limited help in defining the term "spiritual." For example, Maslow (1964), while extensively using the term "spiritual values" in some of his writings, still omitted it from his famous categorization of human needs and values (the 5-layered pyramid).

In this study, I will use the term *spiritual values* to refer to the shared patterns of meaning relating to Man's understanding of his purpose in life, place in nature and the Universe, and his relationship with the Divine. As we shall see, spiritual values are of great relevance to agriculture.

Actually, the words *agriculture* and *culture* both derive from the Latin root *cult*. *Cult* (which in modern usage signifies a system of religious ritual or worship, often with negative connotations) stems from the Latin verb for *to till* or *to take care of the land* (it is for this reason that the first meaning of *culture* found in English dictionaries to this day is "cultivation of the soil"). This association with religion is not random. The fact that the Latin *cult* means both agriculture and religion reflects that originally, agriculture *was* viewed as a spiritual path, and the most direct interaction with God was seen not in any formal religious ritual familiar to us today, but *through cultivation of the soil*. Thus, the notion of

the sacredness of the human-earth connection through agriculture is included even in the words we use today. Our distant forbearers made no distinction between agriculture and what we call today "religion," and did not separate the notion of "sacred" from "nature" (one of the surviving testimonials is the *Genesis* myth presenting man as having been created a gardener, as well as the earlier Sumerian and Babylonian myths from which the Genesis story was adopted).

Today, there is a growing recognition that reinstatement of these spiritual values is important for a full appreciation of our relationship to the land. These values are germane to what Aldo Leopold (1949) referred to as "land ethics," or E.F. Schumacher (1975) as "meta-economic [i.e., ethical] foundations of agriculture" (i.e., striving for the health of the soil, the beauty of the land, and non-violent cultivation methods; productivity being a useful by-product of these first three). These values do not go against the more widely researched "economic value" ("utility"), but complement them to form the whole.

Since the culture of self-reliant living on the land has deep roots in Russian history, we shall now examine the tradition before proceeding to discussing the economic, social, and cultural aspects of family gardening in its present-day form, using the example of the Vladimir region.

A THOUSAND-YEAR WAR ON SUBSISTENCE

Why do history and tradition matter?

Today, just as a hundred years ago, or a thousand years ago, the greater part of Russia's agricultural output comes from lands tended by individual families (Rosstat 2007b;

Pavlovskii 1930; Smith 1959). Given this long-standing and still continuing tradition, if we want to understand present-day practices, we need to examine the historic and cultural roots of household food growing.

There is a striking continuity in some of the basic social and cultural characteristics in self-provisioning agriculture between deep antiquity, the middle ages, the peasant economy of the nineteenth and early twentieth centuries, subsidiary and dacha plot cultivation during the Soviet period, and up to the present, including Russia's nascent back-to-the-land movement.

Indeed, against the backdrop of millennia-long history of self-provisioning (Shinn 1987), contemporary economy with its large-scale commercial agriculture and its massive (often global) trade even in the most basic agricultural products can be seen as a very recent phenomenon. It is for this reason that (as was already mentioned) Russian food gardens deserve the name of *primary agriculture* — both primary in the temporal sense (since this is the practice that has been around the longest) and also primary in their importance, as the predominant component of the country's agriculture.

Besides, the study of history and culture of peasant living reveals that the *oppression* and exploitation of the simple people — as well as concerted attempts to destroy subsistence economies for the sake of boosting the production of agricultural surplus extractable through tributes or trade — has equally deep roots. History keeps repeating itself, and reading and hearing accounts of the ravages of Stalin's collectivization of agriculture of the 1930s gives a strong impression of *déjà vu* — so similar it is in its essence to the atrocities of Christianization and the violent imposition of princely rule a thousand years earlier. Indeed, *current* events, laws and governmental policies clearly show that the forces seeking destruction of the tradition of independent land-based living are still actively at work today (see Chapter 3).

My interest here is not so much in the detailed description of the evolution of food-growing methods over time as in outlining the socio-political, economic, and ideological context of agrarian relationships. This allows us to see the essential continuity in the agrarian tradition and the "agrarian question" from deep antiquity to the present day.

Food, freedom and authority

> Why are you destroying yourselves? Can you really withstand us? If you stay even ten years, what can you do to us? For we have food from the earth.
> — residents of Belgorod to the Pechenegs besieging their city, 10th century (from Smith 1959:103)

Food procurement has always had a most direct influence on social order (Smith 1959). Since human life cannot continue without food, obtaining it — either through gathering, fishing, hunting, or through crop and animal raising — has been humanity's primary concern. The idea of the primacy of agriculture — the idea that is integral to agrarian ideology even today — is thus grounded in physical reality, even though the development of industry might temporarily obfuscate this obvious fact.

Historically, subsistence came first, while surpluses of food enabled activities other than food-procurement, be it crafts or warfare. That grain — and food in general — is a powerful political and economic instrument of control over peoples' very existence was understood since at least the times of the Old Testament. Regardless of whether the Old Testament story of Joseph's masterful use of grain for political ends actually happened or not, the account reveals an understanding that whoever controls the food supply controls the country and its population, and can — through trade and warfare — exercise influence on the surrounding peoples as well (on the role of grain in today's geopolitics see Friedmann and McMichael 1989).

As we shall see, food — and the land on which this food is grown — was crucial in the social upheaval of 10th-century Rus'. It was equally important in 19th- and 20th-century Russia, including during (land nationalization and grain requisitions) and after (grain quotas after collectivization) the Bolshevik revolution.

Besides, since cultures of many traditional societies, including those of Ancient Rus', find in the earth a source of not only physical but also spiritual nourishment and power, the suppression and eradication of the beliefs and practices that sanctify the earth became an important priority for powers seeking domination over these societies. For this reason, the enslavement of Slavic peoples went hand-in-hand with their forced Christianization.

It is only too obvious that forcible extraction of agricultural products from the grower by those who produce none of their own foments conflict. Free, self-reliant families with modest needs and no natural incentive to increase food production to feed outsiders stand in the way of those seeking power. It is thus not surprising that Russia's history from the advent of princes and Christianity to the present day has been that of passive and active resistance to the oppressors, endless uprisings, rebellions, peasant wars and brutal executions, and repressions of those refusing to recognize the "divine authority" of rulers (be it "princes" or "commissars") or the inviolability of the official ideology (be it "Christian" or "communist").

Russia's story is by no means unique, but rather falls into the global pattern, since measures required for gaining control over populations that were previously independent and self-sufficient are similar throughout history and throughout the world. From the medieval English enclosures to the conquest of the Americas to the present-day "development" efforts in the Third World, the introduction of the concept of private land ownership by the rich and powerful, the destruction of family ties to turn people into a mobile workforce, creating demand for money through personal taxation and excitation of wants, and the

introduction of a new ideology that justifies all of the above, are common recipes for subverting traditional societies with their sustainable, subsistence-oriented economies. For instance, this is how Nobel Prize laureate Albert Schweitzer — a man celebrated for his humanism — described it taking place in Africa with shocking frankness (1923:112–118):

> In return for very little work nature supplies the native with nearly everything that he requires for his support in his village... The negro, then, is... a free man.
>
> There is, therefore, a serious conflict between the needs of trade and the fact that the child of nature is a free man. The wealth of the country cannot be exploited because the native has so slight an interest in the process. How train him to work? How compel him?
>
> Create in him as many needs as possible... [The state] imposes on him involuntary needs in the shape of taxes... The trader encourages voluntary needs in him by offering him wares of all sorts...
>
> ...taxes and new needs... make him anxious for money and enjoyment, but not reliable or conscientious. The child of nature becomes a steady worker only so far as he ceases to be free... and this can be brought about in several ways. ...first step... prevent him... from returning to his village...
>
> Colonies of negro labourers away from their families are... centres of demoralisation, and yet... are required for trade... Colonisation... demands that as much of the population as possible shall be made available... for utilising to the utmost the natural wealth of the country...
>
> I should think I had a right... even... duty, to secure [for a plantation owner] the labour of these men so long as he needs it... I myself hold labour compulsion to be not wrong...

Having acknowledged that the problem of colonization lies in the fact that *"the negro is a free man,"* Schweitzer further emphasizes that Christianity is needed to make this dark "primitive man" *free*... from his beliefs, traditions, and reverence for his ancestors and their wisdom (from his "fears" and "superstitions," as Schweitzer puts it)!

Few authors have indeed expressed a strategy for successful colonization and enslavement of entire peoples as clearly and frankly as Schweitzer. But if the world's leading humanists hold such views, what can be expected of those solely concerned about personal

power, “interests of the trade,” “the building of communism,” or some other cause? In Russia, the self-reliant peasant household has been standing in the way of governments and churchmen from the 9th century to the present day.

Deep antiquity: before 9th century CE

Human settlement on what is now the territory of European Russia has very ancient origins. In fact, one of the earliest and best-preserved sites of the settlement of ancient man, that of Sungir (dating back to Upper Paleolith, 22–25 thousand years ago), is found near the city of Vladimir in central Russia. Apart from human remains, archeological findings on this site include tools, hunting wares and jewelry — all of which suggest that in this extremely remote period of the past, the inhabitants of the region already had developed civilization, and enough free time to engage in crafts and artistic pursuits. Small discs carved with images of Sun with 8 rays (strikingly similar to solar designs of the Slavs 20,000 years later), possibly of ritual nature, suggest the prominence of the image of the Sun already in this early culture. However, no findings suggest the existence of agriculture at the time of Sungir.

Archeological evidence suggests that food growing to complement gathering (and probably fishing and hunting) may have originated by mid-III millennium BCE, but it was not until the middle of the first millennium CE that agriculture spread over all Russian territory (Kirianova 1992). Wheat predominates in archeological findings of the earliest periods. Findings from the 5th to the 10th century CE include grains of wheat, barley, millet, as well as beans, peas, flax, hemp, and rye. Rye became ever more prominent, then dominant, in the following centuries, oats appeared in the 11th century and later became second to rye in importance; buckwheat appeared in the 13th-15th centuries (Kirianova 1992). Apart

from cereal crops and beans, vegetables (especially tubers) might have been cultivated from the early times, but, being highly perishable, left no trace to archeologists. The same period (5th to 15th centuries) saw the rise of the importance of domesticated livestock (Smith 1959).

During all this time and up to the 20th century, crop cultivation and animal husbandry co-existed with gathering, fishing, and hunting. Hunting and gathering were still very prominent in the 10th century: the first tributes levied by princes were not in cultivated crops, but in pelts of wild animals and in wild honey.

When princes rose to power in the 9th–10th centuries, the territory of what was collectively referred to as Rus' was occupied by a number of Slavic tribes whose social order was based on clans composed of blood-related families. It should be noted that "Slavic" initially was not a reference to ethnicity, but to religion. The word Slavic is derived from the verb *slavit'*, literally meaning "to give praise [to gods]." It is therefore important here to say a few words about the Slavic culture and religion.

Written sources about the ancient Slavic religion are mostly limited to the chronicles and other documents composed by Christian preachers denouncing pagans' "devilish" lifestyle. The Christian chroniclers, while mentioning some of the outward elements of pagan rites and customs, never go into any detail as to their inner significance and meaning, and thus represent a very incomplete information source (Galkovskii 1916). Besides, Christian chroniclers were prone to deliberately distorting their accounts (Smith 1959) in an effort to demonize the "filthy pagans" and their way of life. This included making claims — such as the claim that human sacrifice was practiced by the pagans — which to the present day have not been supported by any archeological evidence. Therefore, the written sources left by Christian chroniclers may not be very reliable.

Archeology and ethnography offer a wealth of data that, complementing the written records, allows us to reconstruct the ancient Slavs' lifestyle and beliefs. As Rybakov was able to demonstrate, many of the elements of the ancient pagan worldview survived (often in virtually unchanged form) in peasant culture up to the 19th century (Rybakov 1987).

The key concepts of the pagan worldview revolved around mankind, nature, and the relationship between the two. *Family* and *kin* were central to both social order and religion. It should be noted that the pagan "religion" was very different from what is understood by this word today — as it was a religion with no priests, no religious ritual (Galkovskii 1916), and no "god" comparable to that of monotheistic religions.

Both *family* and *kin* were viewed as part of and were inscribed in the natural cycle of conception, birth, growth, maturity, death, and re-birth (as observable in the annual cycle of nature, and, more specifically, in the agricultural cycle). Indeed, the Russian word for "family" (*sem'ia*) is almost undistinguishable from the word for "seed" (*semia*), while the word for "kin" (*rod*, which includes all the ancestors, the present generation, and all future descendants of a family) also signifies the *power of birth* at large (both in the human family and nature). In fact, little distinction was made between feminine fertility and the fertility of "Mother Earth" — both of which were held sacred (thus, a piece of turf or soil was traditionally used to administer an oath: it was first put on one's head, then eaten). (Archeological findings from this period include numerous feminine figures made of clay with cereal grains — a symbol of fertility — incorporated in them; and the symbol of a sown field — a diamond shape with a dot in the center — is a central element of traditional feminine costume to the present day.) From the same root *rod-* stem such words as *rodit'* ("to give birth"), *Rodina* ("Motherland" or "birthplace"), *roditeli* ("parents," lit. "the ones who give birth"), *rodnoi* ("native," "one's own"), *rodnia* ("relatives"), *plodorodie* ("fertility,"

lit. “the bearing of fruit”), *rodnik* (“water spring,” i.e., where a stream is born), *Rod* (the cosmic life-giving principle, the origin of all life) and *priroda* (“nature,” lit. “attached to *Rod*”). *Rod* is symbolized by a circle divided into six segments — a symbol that has survived in Russian folk art to the present day (Figure 11).

Figure 11. Contemporary woodcarvings continue to reproduce millennia-old design of the “wheel of Rod” as a symbol of the never-ending natural cycle of birth, death and rebirth.

Given the prominence of *rod* both in social and spiritual life, reverence for one's ancestors and their wisdom was an integral part of the Slavic worldview. Actually, the life-giving principle, *Rod*, was regarded as the ultimate ancestor of Slavic tribes, so in the very literal sense they recognized this cosmic life-giving principle as their parent, and a parent of all life, thus also recognizing the kinship (*rodstvo*) between man and living nature.

While fertility was closely associated with the feminine principle, the material world ("matter" and "mother" have the same root), with "Mother Earth" and the feminine element of water, the masculine, spiritual principle was symbolized by the fiery element of the Sun, *Ra* or *Iarilo*, which was providing the energy (the "fire") that made the feminine fertility possible. From the root *ra-* are derived such words as *radost'* ("joy," lit. "given by the Sun" or "sharing light"), *krasnyi* ("red," lit. "facing the [rising] Sun"), *krasa* ("beauty," lit. "directed towards the Sun"), *rastenie* ("plant," lit. "Sun and shadow" or "light and darkness"), *rasti* ("to grow," lit. "to move towards the Sun"), etc.

Therefore, the system of rites represented a yearly cycle of celebrations and fertility rites, praising the motherly, material element of the earth and water, and the fatherly, spiritual element of fire, as well as the union of the two, which brings forth fertility and life. These celebrations with music, dance, and song, the most prominent of which were linked with the yearly solar cycle (especially the winter solstice, spring equinox and summer solstice), also had important social functions such as helping the young find their mates.

While this ancient "religion" had no priests (the oldest member of the family played this role, Galkovskii 1916), the society had a class of *volkhvy* (wizards, or wise-men) — men of wisdom who had gained particular insight into the workings of nature, and were thus involved in the development of rites and symbols, including fertility rites and agricultural symbology meant to guarantee abundant harvests (Rybakov 1981).

As the society was composed of *family* clans united by blood relationships, it had some hierarchy (usually based on the natural leadership of the eldest or the most able), but apparently no "government" based on subordination and compulsion, nor the concept of superiority of some people over the rest merely as function of their "noble descent." It must be noted that the social order varied from tribe to tribe and evolved over time; besides, the information on social relations is very incomplete. As Smith (1959:139) observes, "a considerable proportion of the population of the forests of European Russia before the Mongol invasion [13th century] spent their lives unobserved by the [Christian] chroniclers and left no trace for archaeologists."

Providing for one's family and clan's needs was the primary aim of agricultural production, gathering, fishing, and hunting. Exchanges among tribes or even among clans within a tribe were limited.

The enslavement of Slavs: 10th to 19th century

When foreign warriors, calling themselves "princes," arrived with their armed retinues of foreign mercenaries in the 9th century, they were faced with the formidable task of subduing the vast expanses of pagan Rus', a land that had known neither authority nor authority-imposed religion ever before.

The path to successful colonization that the princes followed was strikingly similar to the approach that would be advocated by Albert Schweitzer for Africa almost a millennium later:

- impose taxes and promote trade — so as to augment the rulers' wealth and power and to compel the natives to work more than they normally would;
- destroy family ties and subvert subsistence economies — to break down natives' social cohesion, to compel them to produce beyond their subsistence needs a surplus

that can be extracted through taxation or trade, and to turn them into a labor force available for use outside their households; and

- impose a new religion and eradicate old customs, traditions, beliefs, and world-views — so as to make the natives unfree, even in their minds, and ready to accept the new order and their new status of slaves rather than free men.

Thus, the most immediate task at hand was to impose taxes on the population, so as to provide the princes and their entourages — who obviously grew no food of their own — with a means of livelihood. While this was feasible in the towns, which were claimed prince's "property" and where social stratification had already existed for some time, towns were few and far apart. This was by no means easy in a subsistence economy with relatively low farming productivity and great reliance on the natural ecosystem for food and other needs, in a country where waterways often represented the only available transportation network and where the population was not accustomed to paying any tribute to outsiders.

It is therefore not surprising that the attempts to levy tribute from the Slavic tribes were met with resistance and required constant increase in the princes' armed force, which in turn required increased tributes to feed the mercenaries and support the princes' ever growing vanity needs. As reported by a chronicler, in the 10th century prince "Igor... went to the Drevlyane for tribute and added a new tribute to the former one; and his men used force against them" (chronicle *Povest' vremennykh let*, cited in Smith 1959:158).

Tribute was not limited to food, but also included objects of wealth (e.g., pelts and cattle). Apart from providing for princes' subsistence needs, goods obtained from the population were used for trade to provide the ruling household with luxury items (such as gold, jewelry, etc.) that was not readily obtainable from the local population, but could only be acquired abroad.

As we see, subsistence growing stood in the way of production for exchange. The relationship is purely arithmetical: every household has a limited amount of time to devote to productive activity and leisure, and the greater the part devoted to subsistence production and leisure, the less time remains for "commercial" production. Subsistence growers, gatherers and hunters with a traditional mindset had little incentive to produce extensive surpluses and resisted their extraction by force. For this reason, the production of extractable surplus could most rapidly be achieved by the coercion of man and the exploitation of nature.

As Henry Thoreau (1951) observed in his *Economy*, on the basis of his experiences and calculations, forest ecosystems provide for all man's needs so amply that farming, by comparison, looks like a very inefficient and labor- and resource-consuming way of obtaining food. It was undoubtedly the case in Ancient Rus' as well. Subsistence gathering, fishing, and hunting settlements existed on this territory for at least 20,000 years before the princes arose to power, yet their subsistence demands were so fully within the carrying capacity of nature that in most cases no traces of human settlement even remained.

The situation radically changed when gathering, hunting, and other economic activities started to be carried out not to satisfy population's needs, but also to pay heavy and ever increasing tributes to princes — the tributes that were originally levied not in cultivated crop, but in the products of the natural ecosystem. The increased demands on the ecosystem led to the exhaustion of wildlife and other resources, which engendered a greater reliance on farming, which is a far more labor intensive way to feed oneself.

It is therefore not surprising that, describing the food system of the 13th century, Smith (1959:121) states: "In this period it is probable that food getting and its associated activities occupied most of the working time of the majority of the population. Many of the town dwellers in the 13th century continued to have plots of land they tilled or livestock they

kept for food; trade in foodstuffs remained restricted within relatively small areas, except for items of luxury and, most important, salt." (Note that this description of the *urban* agriculture of the 13th century bears striking similarities to the practice of dacha gardening in the 20th century and to the present.)

Imposition of tribute marked the beginning of a gradual transition from freedom to serfdom. Levying of dues went hand-in-hand with the introduction of the concept of *property* in land (a concept that previously had not existed) as a right to exact tribute from cultivators in some area. As claim to land ownership by the princes meant an encroachment on the freedom the population had formerly enjoyed, it was met with resistance, which necessitated the creations of forts (later to grow into towns) — points from which the concept of landed property and the tribute system started, spread, and was enforced throughout the surrounding countryside. Thus, another pillar of contemporary agrarian beliefs — the idea that city life is evil and is detrimental to rurality — is based on collective memory of the origin and purpose of cities, which have not lost their exploitative function (feeding the army and princes who derive their livelihood not from cultivation, but from collecting tribute) to the present day. Smith (1959:188) concludes that "the extension of this concept [of private property] to the land was the essential step that led to feudalism" and to the corresponding tributary and serf relationships backed up by coercion.

At the same time, military power alone did not suffice for the purposes of establishing a lasting control over the lands and the people inhabiting them. Popular uprisings started to happen as early as the 10th century and continued (often taking form of veritable peasant wars) to the 20th century. The rulers therefore needed to complement physical coercion with an *ideological* weapon to destroy old traditions, erase collective memory, and control the minds of the populace. Such a tested weapon was found in Christianity.

While the princes themselves could hardly be considered as practicing Christian virtues (e.g., the "saint" prince Vladimir killed his brothers to gain power), they saw in it a promising tool for controlling the population, which led to the adoption of Christianity as an official religion and Prince Vladimir's staging a compulsory "baptism of Rus'" in 988 (Rybakov 1987). Vladimir ordered every citizen of Kiev to come to be baptized in the waters of the Dniepr river, threatening with persecution those who chose to disobey. Christian chroniclers themselves remark that Vladimir's betrayal of and onslaught on the old religion was met with public grief (Galkovskii 1916). Moreover, a dissenting part of Kiev's pagan population, to escape annihilation, was forced to flee Kiev and hide in the vast expanses of forests and marshes (Galkovskii 1916).

The new religion was foreign, brought from Byzantium, and was headed — all through mid-15th century — by Greek metropolitans (Galkovskii 1916). It is therefore not surprising that this new ideology, introduced by the state authorities, was not readily accepted by the population, and the baptism had to be effected "by sword and fire."

Galkovskii, a student of the struggle of Christianity with the pagan religion, writes in his book put out by the printshop of Kharkov Diocese (1916:iii): "Christianity was striving to dominate all aspects of human consciousness," for which it needed to wipe out the old worldview and value system including old faith, rites, etc. To effect the systematic eradication of the old tradition, the state joined forces with the church (Galkovskii, 1916) and granted the latter wide court jurisdiction over the populace, including the right to levy fines, as well as use incarceration and carnal punishment (esp. for "witchcraft" and other heretical offenses).

Part of the drive to bring down the traditional faith naturally came to involve the killing off of pagan leaders, *volkhvy* ("wizards" or "wisemen"). Chronicles are interspersed with

references to wizards "perishing" as soon as they "appeared in sight" — *poiavliavshiesia volkhvy pogibosha* (Galkovskii 1916:115,133). In many instances it is explicitly stated that *volkhvs* were killed by the state authorities, while even in the instances where they are said to "disappear" for an unknown reason, the involvement of the same authorities can be inferred. Thus, in 1024 in Suzdal, prince Iaroslav put on an anti-*volkhv* raid, as a result of which some of the *volkhvs* were executed, while others were "incarcerated" and never seen again. In another instance a popular rebellion of 300 people led by *volkhvs* was recorded in 1071. It was suppressed by authorities, and the *volkhvs* were executed.

It should be noted that while the executions were carried out by the state authorities, they were based on charges of *religious* nature, since the *volkhvs* were declared by the church to be "servants of demonic forces." The state, seeing in the leadership of *volkhvs* a threat to the princely authority, was as diligent as the church in its endeavors to put a universal end to *volkhvs'* activity (Galkovskii 1916).

Fleeing inevitable death, the *volkhvs* headed North, East or into the depths of forests. Those who were spotted continued to be executed (often by being burnt alive) for many centuries thereafter (Grekulov 1964).

It is crucial to emphasize that the *volkhvs* were not merely spiritual or community leaders. Their special status stemmed from their profound understanding of the workings of nature, including its application to agriculture and herbal medicine. As the *volkhvs* — the guardians of the ancient agricultural wisdom — disappeared, with them went a part of the understanding of the agricultural cycles, practices, and fertility rites. And while many of these practices, rites, and symbols persisted, their inner meaning started to be lost. The result was a chain of famines — the first recorded famines in Russian history.

Since pagan lifestyle and beliefs persisted, the departure of the *volkhvs* was not seen by the church as any definitive victory. What exactly was it about the pagan way of life that the Christian ideologists found so distasteful? The following extract from a chronicle may offer a few glimpses as for the answer to the question:

> And the [Slavic tribes of] Radimichi, Vyatichi and Sever had a common custom; they lived in the forest like any beast, eating everything unclean and they used shameful words before their fathers and before the wives of their sons. And they had no marriages, but festivities between villages; and they would gather at the festivities for dancing and for all sorts of devilish songs, and here they took themselves wives, after agreement with them; for they had two or three wives each. And when anyone died they would arrange a wake for him, and then they made a great board and, placing him on the board, burnt the dead man... Such, then, were the customs of the Krivichi and other pagans ignorant of God's law, but making a law for themselves.
> (*Povest' vremennykh let*, cited in Smith 1959:137).

That these tribes "lived in the forest" was correct, yet their comparison with "any beast" is an emotional exaggeration (archeological evidence proves that these tribes had a developed civilization which included smithery and jewelry making long before Christian invaders came along). That they ate "everything unclean" only means that they did not conform to Christian dietary laws. The "shameful words" are probably a reference to male genitals — the pagans had no concept of "shamefulness" or "sinfulness" of pro-creation, and held both masculine virility and feminine fertility in high esteem as manifestations of the power of life.

Then, in the above description, we come to the key accusation of the pagans by Christian ideologists: that they did not recognize the Christian rites of passage (including marriages and funerals) and, in general, lived by their own laws, rather than obeying the laws imposed by the church and the state. Noteworthy, for the Russian peasant household *custom*

continued to represent a much more significant source of law than state laws as late as at the time of Stalin's collectivization (Shinn 1987). Even today Russian courts of law continue to prosecute pagan communities for placing the law of (pagan) gods above the laws imposed by the state, and for using their ancient sacred symbols (Omskii oblastnoi sud 2004).

The Christian church and state authorities could not fail to recognize that pagan tribes had strong families, and the tradition of strong family unions predated the imposition of Christianity. In fact, as we have seen, family and family line, along with reverence to the miracle of the power of feminine and earthly fertility were central in the culture of Slavs. Therefore, their conquest could not be complete until the core of their customs and beliefs — the family — was destroyed or perverted.

The church obtained from the state authorities the concession to manage marital matters (Galkovskii 1916). This was an important instrument of physical control (including the keeping of records for fiscal purposes and the imposition of additional dues for the administration of church marriages). This is how Smith (1959:138) describes the link between the control over marriages and control over extraction of agricultural surplus (emphasis mine):

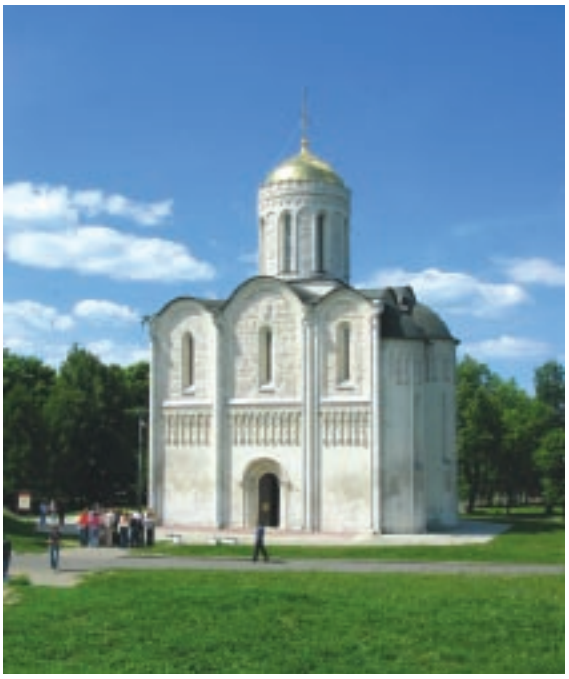
> The church, drawing income from tithes, was in favour of the monogamous family not merely because it was sanctified, but also because it meant that tithes and other exactions could then be extended to what had formerly been almost self-sufficient and shifting groups with no conception of property except in chattels, but which now came within the church's jurisdiction. *This struggle has lasted almost to the present century*.

Besides, the church's control over marital life attacked one of the central tenets of the pagan worldview. In particular, the woman, her fertility and sexuality, as well as the "mother earth" they related to (all deemed sacred in pagan culture) were all "unclean"

and "sinful" for Christians — and required elaborate church rituals of purification. Besides, family unions (free from any formal regulation in the pagan tribes) were now to be sanctioned and approved by the church establishment. Since pagan "weddings" were woven into the yearly cycle of fertility rites and celebrations, prosecution for games, dances, songs, folk comedy (*skomorokhi*), wizardry (*volshebstvo*), and astrology (which was also key to agricultural planning) became routine (Galkovskii 1916).

Due to the "natural meekness of the Slavs" who preferred adaptation to new conditions to bloodshed and warfare, Christianity was gradually spreading all over Rus' (Galkovskii 1916:122). Nevertheless, for centuries after the formal adoption of the new faith as an official religion of the state, the pagan worldview and pagan values persisted, especially in *agriculture*, *family life*, rites, beliefs, songs and games (Galkovskii 1916). In fact, even 2 to 4 centuries later, old beliefs were alive and well and included routine veneration of the pagan gods Perun, Hors, Makosh, Rod, fire-Svarozhich, and others. According to a written document *Slovo Khristoliubtsa* (Word of a Christ-Lover) in the 12th century, not only ordinary folk, but representatives of all social strata, including even the clergy, were sharing many of the pagan views and beliefs (Galkovskii 1916). Since an all-out eradication of the pagan spirit did not succeed, the church started to absorb pagan symbols and beliefs (Figures 12 and 13), and even included pagan fertility festivals in the church's calendar of Christian holidays, where they are to be found to the present day.

While Slavic gods were formally declared "devils" and "demons" (Galkovskii 1916), the church continued to venerate them under the guise of Christian saints (Rybakov 1987). Thus, the pagan *rozhanitsy* (spirits protecting birthing women and fertility in general) were transformed into the Virgin Mary (Galkovskii 1916), the god Perun became St. Ilia, etc. In fact, even the appellation of Russia's official church — Orthodox (*Pravoslavnaya*) was



Figures 12 and 13. The facade of the St. Dmitrii Church (12th century) in the city of Vladimir, covered in pagan symbols of fertility. Meanwhile, just a few hundred meters away, residents of downtown Vladimir continue to engage today in subsistence growing and have households similar to the pre-Christian period of over 1000 years ago.

adopted from the pagan religion and literally means "praising the Rightness" (the latter — understood as the universal order or law — was one of the central concepts of paganism, while "praising" (*slavit'*) was so characteristic of the Slavs that, as was already mentioned, it gave the name to this ethnos).

According to *Slovo sv. Grigoriia Bogoslova* (13th century), the populace was still worshiping the old gods in secret, yet the *meaning* of old rites was gradually getting forgotten. Even though this indeed was the case, the "heresies" were so widespread that persecutions (routinely involving the burning alive of heretics, witches, and other opponents of the Orthodox faith, as well as deadly prosecutions of vast numbers of ordinary people refusing to accept Christianity, to get baptized, to attend church services, and to pay church's dues) continued to the 20th century (Grekolov 1964) and in many respects have not ceased even in the present day.

While the church was not fully successful in eradicating ancestral beliefs, it enjoyed a much greater and lasting success in appropriating Slavs' ancestral *lands*. In fact, the church and princes depended on the same source of income — tribute from the peasantry. Therefore, "apart from the princes and the members of their retinues, the church also was deeply concerned with land ownership from the time of its arrival in Rus'" (Smith 1959:174). Over time, church landholdings and wealth grew to eclipse that of princes, hence "the struggle of church and state [continued] over the whole history of ancient Rus... and *still goes on*" (Galkovskii 1916:115, emphasis added).

As the state's and the church's landholdings, wealth, and power grew from one century to the next, the freedom and self-reliance of peasantry kept declining. The peasants were indeed being reduced to slave status, while the secular and church elite were being transformed into omnipotent lords.

The exploitation of peasantry was especially severe on church lands, since peasants were required to pay not only all dues mandated by the stated authorities, but also, *in addition*, all the dues imposed by the church as their landlord. The levies were often so high that they reduced peasant families to *below* subsistence level, which routinely resulted either in peasant mass escapes, rebellions, or in group suicides — all so characteristic of Russian history (Grekulov 1964). As Paxson (2005:6–7) aptly remarked, "although the Russian imperial court was as lavish as Versailles, the north of Russia is certainly not the center of France; because of differences in soil and climate, the force required to extract a Versailles from the Russian population was exponentially greater. ... Taxes... were exorbitant. Battery and sexual license were common." (See Figures 14, 15 and 16.)

Figure 14. *A deserted village in the 17th century*, painting by academician K.V. Lebedev. Due to oppression by the state and the church, populations of entire villages would escape en masse to the Far North or to Siberia, beyond the reach of the authorities. The arriving fiscal clerks would find empty villages with no one but oldsters left behind.

Figure 15. A peasant being whipped, while red-hot iron forceps are being prepared for subsequent torture (drawing by P.V. Kurdiumov).

Figure 16. A landlord's harem made up of young peasant women (drawing by Hamplen). Images in Figures 14–16 are from Dzhivelegov, Melgunov, and Pichet 1911.

By 1761–1767, 13.8% of the rural population, almost 1 mln "souls," were owned by the church. And even though the peasant did not lose his last "freedom" — that of migrating from one landlord to another — until 1649 (Dzhivelegov, Melgunov, and Pichet 1911), in reality, peasants became de facto slaves of their landlords much earlier, with the ever-increasing tributes, corvée (unpaid work for the landlord) and other dues. Besides, already shortly after Christianization, the local population was used as a commodity and became an object of the international slave trade — something unthinkable in pagan Rus' (Smith 1959).

The peasant economy and the agrarian question in the 19th – early 20th centuries

Serfdom was not officially abolished until 1861. But even when the decree on the "emancipation of serfs" was made public, the provision that the peasants were supposed to pay and buy out their land from their landlords (the same ancestral land that had belonged to peasantry and which the landlords then appropriated) was vehemently opposed by peasantry. In many instances, military troops had to be used to compel the peasants to sign the new land charters. Those who were not able to pay their landlord (and most peasants had no resources to) continued to be "attached" to the same for as long as their "debt" was not paid in full. Therefore, for many decades after the "emancipation," little changed for the vast majority of peasants. The old corvée (*barshchina*) and in-kind tribute (*obrok*) were replaced by heavy monetary payments.

It is recognized that as late as the first half of the 19th century, serfdom was essential for compelling the peasants to produce an agricultural surplus (especially grain) that could then become object of commerce (Pavlovskii 1930). Without this compulsion, many households and entire communities tended to revert to subsistence production.

However, the emancipation of serfs had two important consequences: it made it easier for peasants (given the difficult conditions in the countryside) to migrate to the cities and add to the urban workforce, as well as, on the other hand, allowed many entrepreneurial peasants to purchase their land and increase their landholdings. Still, even despite Stolypin's land reforms of the early 20th century (which promoted the creation of independent family farms), 90% of all agricultural producers were considered "traditional," and only 10% "modern" (i.e., used hired labor, mechanical implements, and were geared towards producing for the market) (Pavlovskii 1930).

Thus, by the second decade of the twentieth century the majority of Russia's agricultural producers were characterized by wage-free family labor, family (or community) land ownership of the fields outside the village, family ownership of subsistence plots attached to peasant dwellings, predominantly non-capitalist motivation of peasants and subsistence orientation in the majority of crops, and prominence of agrarian values shared by the peasantry. The vast majority of households employed no machinery and used exclusively organic growing methods. But despite the "backwardness" of the countryside of the period, it still managed to produce the vast surpluses used in trade and attained an output level that the collectivized Soviet agriculture could not match until the 1950s.

By 1916, of 112 million hectares sown by 21 million peasant households (5.3 ha per household), 100 million ha were owned by peasant families who worked the land (Chaianov 1917). Even though some crops — notably flax and wheat — were grown specifically for the market, over 90% of harvest of products important for subsistence (including potatoes, vegetables, rye, oats, milk, and meat) were produced for families' personal consumption (in the regions studied by Chaianov 1925). On the basis of analysis of budgets of peasant households, Chaianov was also able to demonstrate that the primary motivating force

for peasant households' production was not the capitalistic principle of profit-maximization nor maximization of personal consumption, but attaining a balance between the basic subsistence needs of the family and the irksomeness of labor. Indeed, Chaianov himself considered it empirical evidence that the peasant household still retained the key characteristics of the pre-Christian period.

The agrarian question: Marxists vs. Chaianov

The "agrarian question," initially raised by Marx, refers to the laws governing the evolution of agriculture under capitalism and the place of agriculture, as well as the role of the peasantry, in the transition from capitalism to communism. Marx himself — on the basis of his observations of Western societies, notably the England and Germany of his time — postulated that the rural proletariat is no different from the urban industrial proletariat, and that the same basic laws apply to the evolution of agriculture as to the development of industry.

Since Russian society of the late 19th – early 20th centuries was radically different from that of Western Europe, Lenin felt the need to elaborate Marx's argument and apply it to the case of Russia. In his work (Lenin 1967), *Development of capitalism in Russia*, he observed that the agrarian question was complicated by the fact that Russian agriculture and the peasant economy still had a largely *feudal* rather than capitalistic organization, and that the transition to communism would essentially involve bypassing the capitalistic phase. Indeed, at that time, the majority of the Russian population was rural, and their agriculture was predominantly *subsistence-oriented* and *hired-labor free*. Still, Lenin, and other Marxists after him, concluded that the development of the peasant economy in Russia after the revolution should involve — in terms of land ownership, the nature of labor relations, scale of operations and purpose of production:

- nationalization of land ownership;
- transition to hired labor in agriculture: turning independent peasants into wage workers on state-owned industrial farms (on the assumption that larger-scale operations would be more efficient and would free up the agricultural labor needed for industrialization and urbanization);
- transition from small-scale to large-scale agricultural operations through development of cooperatives (this idea later gave way to the concept of "voluntary" collectivization);
- the state-run farms would produce for the socialist market (under the socialist *plan*) rather than for household consumption.

This vision was in drastic contrast with Alexander Chaianov's theory of the peasant economy and views on the agrarian question. The difference between Marxists' and Chaianov's views are summarized in Table 14.

Table 14: Views of Marxists and Chaianov on the agrarian question.

	Marxism	**Chaianov**
Source of labor	Hired labor (rural proletariat)	Family
Most efficient scale	Large-scale	Small-scale
Integration of peasant households into the economy	Forced collectivization	Voluntary cooperation
Purpose of production	Surplus	Subsistence
Land ownership	State	Family
Economic nature of agriculture	Similar to industry (including the law of the economies of scale)	Radically different from industry (efficiency decreasing as scale increases)
Transition to the new state	Revolution	Evolution
Source of doctrine	Theoretical	Empirical

As far as the peasant household and agriculture are concerned, it is striking, from Table 14, how similar Marxist views are in their essence to those of Christianity and feudalism of 900 years earlier (Figure 17); while how similar Chaianov's vision is to that of Slavic tribes before the arrival of princes. For instance, the concept of land ownership — notion of land as "property" that can belong to someone other than the family cultivating it — did not exist in pre-Christian Rus'. It was *de facto* "owned" by families and family clans. The same was advocated by Chaianov, while Marxists (like the princes and clergy) insisted on the alienation of land from those who cultivated it. Chaianov saw the *family* (peasant household) as central to agriculture and living with the land in a symbiotic relationship, while both Marxists and feudalists were keen to subvert the traditional family and espoused the idea of "agriculture without peasants." The primary driving force of farming — for Chaianov and ancient Slavs alike — was *subsistence*, while for Marxists and the church — it was producing the surplus to feed the ones who grow no food of their own. It must be noted that Chaianov's views were based not on some ideological construct, but on empirical observations made over more than two decades, which serve as a standard of peasant studies to the present day.

In his *Chto takoe agrarnyi vopros?* ("What is the agrarian question?", 1917) and other works, Chaianov, from his extensive knowledge and understanding of the Russian peasantry, proposed an agrarian reform that would preserve the peasant household with its family-based labor as the primary unit of agricultural production. Previously, Chaianov had been able to demonstrate that small-scale agricultural operations are more efficient than large-scale, and thus the transition to a large-scale industrial agriculture made no economic sense in Russia. At the same time, recognizing the need for the modernization of the Russian village, Chaianov saw the voluntary agricultural cooperation as a practice-tested

Figure 17. "October 25 [date of the Bolshevik revolution]." A Soviet propaganda poster from the early 1920s. A peasant, oppressed by priests and the wealthy, is "liberated" by proletarians, only to see himself under similar oppression, as he is instructed to "work hard" and is forced to surrender his grain to feed the revolutionary forces.

means of gradually integrating the peasant household into the national economy. As for the land ownership question, Chaianov held that land should be allocated purely on the basis of usage (i.e., that it should be owned by the peasant household that cultivates it, and for as long as it is being cultivated). Besides, Chaianov emphasized the cultural and spiritual significance of the peasant way of life in Russia. Again, the strength of Chaianov's argument was that — unlike the Marxists — he based his views on the *empirical* evidence from extensive studies of Russia's agricultural statistics and on sound economic calculations.

Agrarian values — the cultural dimension of peasantry

In addition to the paramount economic significance of family agriculture, it was widely recognized that food growing is *culturally* important to Russian peasantry as a traditional way of life. In this Russian peasants are not unique. In fact, this cultural aspect offers glimpses of interesting parallels with the American farming tradition as well.

Alexander Chaianov emphasized this cultural aspect. American rural sociologists have observed that a set of agrarian values has been important to American farmers and society in general and have persisted even when the focus of farming shifted from traditional subsistence orientation to producing for the market (Dalecki and Coughenour 1992; Buttel and Flinn 1975; Flinn and Johnson 1974; Rohrer 1970). Likewise, the ethical values shared by Russian peasantry in relation to the land and agriculture (some of which bear similarities to the agrarian values of American farmers) have persisted to the present day.

Chaianov observed that "the foundation of our [Russian] economic regime — just as in the times of Ancient Russia — is an individual peasant household" (Kremnev 1920:29). This statement is similar to what American rural sociologists have been referring to as the Jeffersonian idea of the primacy of agriculture over all other economic activities (Rohrer 1970).

But, in addition to agriculture being the basic industry, for Russian peasants, farming was important as a continuation of a long-standing *tradition* of peasant living. Flinn and Johnson (1974) observed that reliance on religion and tradition was at the core of American agrarian values, and in that agrarianism differed from Jeffersonian ideology.

Chaianov emphasized that "country living and labor are the healthiest, and the life of a peasant is most diverse" (Kremnev 1920:29). Similarly, American agrarianism has been viewing agricultural life as natural and good, and city life as evil (Rohrer 1970). At the same time, Chaianov, while acknowledging the economic, social and environmental costs of urbanization, was far from stating that *any* city life is unnatural and bad. Instead, he saw in decentralized urbanization and the development of small cities a way to boost rural development and offer the peasants some of the advantages of the cities (access to the markets, cultural opportunities, etc.) without destroying their traditional lifestyle.

Economic self-sufficiency and a high degree of independence was a common trait of the peasantry in pre-revolutionary Russia. Chaianov (1925) described and analyzed the functioning of the economics of self-sufficiency and the non-capitalistic interaction between the peasant household and the market in his classical *Organizatsiia krest'ianskogo khoziaistva* (in English translation: *Theory of Peasant Economy*). American sociologists observed that economic independence and self-sufficiency have remained an important agrarian value even after the majority of farmers have lost both their self-sufficiency and economic independence (Flinn and Johnson 1974).

While another tenet of American agrarianism is that "the farmer should work hard to demonstrate his virtue" and "hard work became an end instead of a means" (Flinn and Johnson 1974:193), Chaianov argued that while work on the land was viewed as an important virtue by Russian peasants, it is not the hardness of the work, but its diversity and the

creativity of agricultural labour that made it virtuous. While it was recognized that work is a necessity of life and idle life perverts, hard work all by itself was viewed by Russian peasants as drudgery and misfortune, not conducive to virtue. Numerous folk tales suggest that all the necessities of life should be supplied without an excessive effort. (Interestingly, present-day permaculture practitioners also view labor intensity in agriculture as an expression of the degree of misunderstanding of how agroecosystems function.) Also, given the long centuries of serfdom, peasants were blamed for laziness while working their landlords' lands, while the same peasants were diligently working on their own plots (a trend that would re-emerge in the Soviet collective agriculture). Chaianov (1925) cites results of numerous surveys showing that in the surveyed districts working members of peasant households were spending only 118 work-days per year on agriculture. Peasants engaged in a variety of trades (clothes-making, woodcarving, and other crafts), and as for the peasant household, their agricultural activity was rarely viewed as an occupation to be pursued beyond the satisfaction of the family's subsistence needs. The variety and artistry of peasant crafts and the variety of tasks involved in managing a peasant household led Chaianov to the conclusion that "in manual-labour agriculture, labour is inseparable from creativity" (Kremnev 1920:23).

For Jefferson, family farms were the backbone of American democracy (Flinn and Johnson 1974). For Chaianov, even prior to the urbanization efforts of the Soviet state, it was obvious that a highly urbanized industrialized society with the corresponding concentration of power is much more subject to brutal totalitarian rule than a highly decentralized peasant economy (Kremnev 1920).

Finally, like numerous thinkers and religious leaders throughout the history, Chaianov saw in the peasant lifestyle a path to spiritual fulfillment. He wrote (Kremnev 1920:29):

> Peasant economy is the most perfect form of economic organization. In it man is immersed in nature and through his labour comes into contact with all the forces of the Universe, creating new forms of being. Every labourer is a creator capable to manifest his inner self through the art of labour.

Therefore, we see that the ancient tradition for the Russian people to view land as their mother (*zemlia-matushka*) and the key elements of the "pagan" worldview were all alive in Chaianov's time, as was the language. After all, to the present day the Russian word for *nature* (*priroda*) literally means "attached to the Birth-Giver (= the Creator)."

Soviet period: collectivization and persistence of small-scale private gardens

Just as in the time of the princes' Rus', the first task at hand for the Bolshevik government was to provide for its subsistence needs — and those of the army and the "working class" (industrial proletariat). The foodstuffs could be coming from none other but the peasant. For this reason, gaining control over the "bread" (i.e., grain) supply became a top priority. The Bolsheviks imposed a heavy in-kind tax on grain harvests and extracted it with the use of armed force (*prodrazverstka*). This went hand-in-hand with the nationalization of the land that was declared to belong to the "people."

Thus, the Bolshevik reforms of agriculture were aimed at converting land ownership from individual peasant landowners to the state, supplanting free family labor in peasant households with de-facto compulsory labor on collectivized farms, and modernization of agricultural production. As a result, the policies of detachment of people from the land, proletarianization, disruption of social and family ties, and uprooting of traditional values were all deliberate measures of the Communist government. Their aim was to secure human and other resources for industrialization and urbanization while making the village dependent

on the city, assuring ease of control over the rural population, and — importantly — exterminating private ("bourgeois") interests, including any kind of private ownership of land.

As previously mentioned, even prior to the revolution, Lenin authored a number of works on the "agrarian question," trying to determine whether the Russian peasantry would be a force supportive of or opposed to the revolution and the building of a communist state. For Lenin, the mentality and the economic make-up of peasantry (the majority of which were petty landowners) were closer to that of the bourgeoisie than to proletariat, and these tendencies required suppression. Lenin was making an exception for the rural poor who owned no land or worked for hire in wealthier villagers' households.

Besides, the new leaders of the state clearly saw that the economic and social revolution in the village required an ideological, cultural revolution and the destruction of many of the traditional values inherent in subsistence agriculture — the same values that had persisted throughout the feudal millennium. For this reason, measures were taken to limit possibilities for subsistence growing and the promotion, among other things, of *obshchepit* — eating in canteens rather than at home in a family circle (especially in cities). Even prior to the massive collectivization of the 1930s, Chaianov (Kremnev 1920:2) clearly saw the intent of these policies and cited three slogans of the time:

> "By destroying the family hearth we are throwing the last spade of earth on the grave of the bourgeois regime."
>
> "By renouncing taking meals at home we are uprooting the seductive poisonous joy of the bourgeois family and are strengthening socialism for ever and ever."
>
> "The warmth and coziness of home bring forth the desire to own things. And by becoming a petty owner, we sow the seeds of capitalism."

This is again reminiscent of Schweitzer's recipe for successful colonization and subversion of the traditional subsistence economy. The self-reliant peasantry was once again standing in

the way of the builders of a new society, this time — of "communism." The new regime got down to the task of overcoming peasants' resistance with the relentlessness characteristic of Stalin's rule: the nationalization of land was followed by the confiscation of middle- to upper-class peasants' private property (*raskulachivanie*), the physical displacement of the most able peasant families (mass expulsion of *kulaks* to Siberia), and finally the collectivization.

What prompted the collectivization drive? Grain was needed to support industrialization. Yet it was common, during the late 1920s, for the wealthier peasants (*kulaks*) to refrain from marketing their grain surplus, waiting for the prices to go up. The Soviet government could not afford to be at the mercy of the peasant. It is recognized that collectivization was undertaken mostly for political rather than for economic reasons — to gain control over the countryside. This is how it is summarized by Viola (1996:vii):

> Collectivization destroyed the peasant commune and left in its place a coercive enterprise, socialist in name only, that the Communist party would use to try to transform the peasantry into a cultural and economic colony. The collective farm was to be an instrument of control: it would enable the state to exact a tribute from the peasantry in the form of grain and other produce and extend political and administrative domination to the countryside. To accomplish its goal of colonization, the party aimed at nothing less than the eradication of peasant culture and independence.

Chaianov's utopia

In the first years after the Bolshevik revolution of 1917, at the very outset of the new government's agricultural policies that ultimately lead to the collectivization of the 1930s, Chaianov already saw the tragedy of the forced nationalization of land in a peasant economy, and of the application of industrial ideologies and methods to agriculture. Seeing a capitalist or communist system as equally alien to the traditions of Russian peasantry, he believed that after a period of ravages under communist rule, the country would return to

a peasant land-based society. In his *Voyage of my brother Alexey to the land of peasant utopia* (Kremnev 1920), Chaianov paints a radiant picture of his vision of Russia's future after the country returns to "the original source of the tradition."

As can be gleaned from the foreword to his book, Chaianov had probably chosen to call his work a "utopia" only to enable its publication in the Soviet Russia. Conceivably, it is only under the guise of a "utopia" and fiction that a work that predicted the fall of the communist system, the end of collectivized agriculture, and the fiasco of strict urbanization policies could have been published only three years after the Bolshevik revolution. Also, the views Chaianov expressed in his scholarly works, as well as the pen-name he published his "utopia" under (Ivan — the most common peasant name, Kremnev — derived from the Russian word for "flint" — hinting at the "explosive" nature of the book), suggest that he was far more serious about its contents than might be apparent from its name and its form of a novel.

"Even though," as the author of the preface to Chaianov's "utopia" put it, the image Chaianov painted was obviously "an improbable future," Chaianov was actually surprisingly close to foreseeing in detail the evolution of the Soviet agriculture. Based on his profound understanding of the peasant tradition, in 1920 he was able to predict the re-emergence of subsistence agriculture in the form of subsidiary plot cultivation along with a massive dacha movement, and — much later — the birth of Russia's back-to-the-land movement after the fall of communism.

Subsidiary plot and dacha cultivation (1920s to present)

With the advancement of collectivisation in the late 1920s and beyond, the institution of subsistence growing persisted and assumed a different form — subsidiary plots of rural and dachas, gardens, and allotments of urban residents (Figure 18).

Figure 18. “Raise vegetables!” A Soviet propaganda poster from the early 1930s. As inefficiency of state-controlled agriculture became apparent, workers in factories were encouraged to grow vegetables on surrounding lands to supplement their ratios. Publisher: AChR, Moscow; artists: A. Kuznetsova and A. Magitson.

In the 1930s, as the forced collectivisation swiftly progressed in the village, the peasants, while losing their arable lands, were clinging to their backyard gardens, a "personal" head of cattle, and a few hens, which they were allowed to keep at Stalin's personal indication (Stalin 1949). In extreme cases when even the personal cattle and products of backyard gardening were confiscated, it inevitably led to covert "personal appropriation" of collective farm animals and to famine on the collective farms (Fitzpatrick 1994). Stalin himself was obliged to admit that it was "too early" to collectivize household garden-plots.

According to Matskevich (1967), who cites the official statistics, the number of collectivized households increased from 4% in 1929 to 53% in 1931 and then gradually to over 99% in 1955. In reality, already in the second half of the 1930s, it had become evident that collective farms were failing to provide for food requirements of the nation, and re-authorization of subsistence growing became an issue of national food security (Wadekin 1973). To camouflage the existence of an agriculture outside the collectivized sector, peasants' private household plots were dubbed *subsidiary plots*, to highlight the primacy of collective farming.

At the same time, the food shortages of WWII forced the Soviet government to re-authorize and even encourage subsistence growing by urbanites, and allotment and garden-plots sprang up in and around cities throughout the country. Indeed, shortly after Germany's assault on the USSR in June 1941, some of the most productive agricultural areas were occupied by German troops (including the "bread basket" of the Soviet Union — the "black soil" regions of Ukraine). This meant the mounting exploitation of peasants remaining under Soviet control: the minimum per person workload on collective farms was raised from 254 labor-days per year in 1940 to 352 labor-days per year in 1942. As the grain-producing regions were occupied, potatoes and vegetables became the most important items in the food balance of the country. Production of potatoes and vegetables increased, especially

in areas around major cities and industrial centers (Shigalin 1960). Urbanites were allotted plots on the lands of periurbal collective and state farms, lands along highways and railroads, as well as within city limits. Between 1942 and 1945, the number of private vegetable gardens (*ogorody*) increased almost four fold (Shigalin 1960).

During the post-war years and especially after Stalin's death in 1953, subsistence growing received further development and could already hardly be viewed as "subsidiary" agriculture. In the 1950s, millions of subsidiary plot owners in rural areas and urban gardeners were already producing over 25% of the total agricultural output of the USSR (Wadekin 1973), and even selling their surplus on the market through a network of "collective farm markets" that has been constantly growing (Kerblay 1968).

In the decades from WWII to the second half of the 1980s the Soviet government continued to have an ambivalent attitude towards self-provisioning (especially towards dacha gardening): it was indispensable for the national food security, yet it also represented a potentially dangerous seedbed for sprouting bourgeois tendencies (such as the desire for land ownership and having a secondary residence, being able to sell surplus products, gaining greater economic independence and consequently losing interest in "the building of communism"). The government feared that a new, uncontrolled social force could be unleashed, and was holding subsistence growing in check by imposing rigid limits on the size of plots, their use, and the kind of structures that could be erected thereon.

The self-provisioning under the Soviet regime retained the most essential traits of the peasant economy: wage-free family labor; de facto personal ownership of garden-plots; simple, mostly organic and machinery-free growing techniques; subsistence-oriented production; and valuing gardening experience for the reconnection with the earth that it was bringing with it.

Under Brezhnev's more conservative rule, the "dacha movement" received little, if any, support. And the withdrawal of support by the leaders of the Communist party meant great obstacles in obtaining new plots for gardening. But even under these unfavorable conditions, the self-provisioning practice was expanding and citizens managed to obtain land for gardens and dachas. This is how one citizen describes receiving a dacha plot in 1978 in Kamchatka, a region in the Northern part of the Russian Far East, with a climate hardly favorable to gardening (Pogozheva 2000):

> We were the first to approach the local authorities with a request for a dacha. They ridiculed us. We spent two years in various apparatchiks' waiting rooms, but ended up receiving land for a gardening cooperative — 46 km from the city along a gravel road. It was sheer luck: the head of the local Committee of the Communist party was retiring, so he did not particularly care...
>
> One hundred people joined the cooperative. We were doing everything ourselves: from planning [the grounds] to running electricity and water lines. We were rediscovering how to grow crops in our harsh climate and on the poor soil we had. It was our first experience of planting potatoes without fertilizer: after planting five buckets, we harvested only two!
>
> But this was nothing compared to being constantly hammered by the authorities: the KGB's Department of Fighting against Pillage of Socialist Property, the People's Control Committee, Communist Party executive committees — from local to regional, even the regional prosecutor's office... I personally became the subject of a criminal investigation. My case was handled by a senior investigator specializing in top-priority cases, who wanted to charge us with theft, bribery, and God knows what else.
>
> KGB agents paid us visits, went over our summer houses with a measuring tape, counted nails in the walls. All in vain — I had receipts for all materials used in the construction. I was repeatedly interrogated at prosecutor's office. We were "enemies of the people" for having built ourselves a dacha...
>
> The big bosses did have their own recreation estates, well equipped and maintained. But the bureaucrats and Communist Party apparatchiks were receiving food supplies through special distribution channels. So for them there could be no issue of not having enough food to eat, and they could not care less about gardening and people's food supply. One of the bosses demanded that I make a choice: my membership in the Communist party or my dacha...
>
> I maintained that not only do I not steal from "socialized property," but I should also receive payment for saving the country's agriculture the need to provision me with potatoes, carrots, and cabbage. The apparatchik was outraged at my boldness and burst out with new threats...

> But times have changed: the new leader of the Communist Party, Iuri Andropov, ordered the party bosses to *lead* the dacha movement, so that the people can become self-sufficient in food.

Indeed, the hostility of the authorities subsided in the early 1980s with the end of Brezhnev's rule and the new Communist party leader Iuri Andropov. Mikhail Gorbachev (with his extensive background in the administration of agriculture) and later Russia's first president, Boris Yeltsin, also furthered the dacha movement.

Yeltsin himself — even while holding the presidential office — was boasting of planting carrots, beets, onions, and other crops at his dacha and harvesting enough potatoes to feed his family over the year (*Argumenty i Fakty*, #20, 1996). This striving for subsistence growing is by no means an idiosyncratic trait of Boris Yeltsin's. The president of Ukraine, Leonid Kuchma, was reported saying: "I love digging in the soil. I almost live at my dacha and even inspired all my neighbors to work harder and grow even more crops" (*Argumenty i Fakty Ukraina*, #31, 1999). Moscow's mayor Iuri Luzhkov, another influential figure on the political landscape, boasts of his dacha: "Not only do I have two cows, but also a hog. Even the president [Yeltsin] drinks my cow's milk, and I am proud of it" (*Itogi*, #1, 1996).

Post-Soviet period and to the present

As was noted earlier, the remarkable productivity of household gardens obfuscates the fact that production of foodstuffs is not the only — and often not even the primary — purpose of subsistence growing. For urban households, food gardening is rarely a foundation of livelihood. Products of subsistence growing in 2003 represented only 4% (in-kind) in the income of urban households, and Clarke et. al (1999), drawing on the results of official statistics, all-Russia representative surveys, and their own extensive survey (n=4,000) in

four different regions of Russia, found that urban households that produced their own food spent the same share of their budget on buying food as the households that were not producing their own food. Furthermore, Clarke et al. (1999) found that individuals who described their food growing as a "hobby" and a leisure activity produced as much foodstuffs as the ones who saw the purpose of their activity as production of food. Significantly, individuals were investing, on average, 1,000 dollars worth of their work time to produce only 140 dollars worth of agricultural output; and the poorest 10% of the population were *less* likely to grow their own food than the middle class.

These observations indicate that subsistence growing is not necessarily driven by the need to assure a steady food supply, but by the irresistible urge to grow one's own food. Growers seem to share the view that food grown on one's plot is superior to any that can be bought on the market, and the ability to grow one's own food is viewed as a measure of a person's worthiness (Lovell 2003).

Dachniks are known for perseverance in overcoming any obstacles in their way (the *years* of paperwork required to receive a plot, the universal unchecked robbery of plots, etc.). Again, this perseverance cannot be explained merely in the terms of striving for a reliable food supply, since the dacha movement involves all classes of society — from factory workers up to the president. In a typical dacha community 35 km east of Moscow, a banker — the owner of a large, three-story brick mansion built on his 600 m^2 dacha plot — drives his high-end car from Moscow every Friday night throughout the growing season to spend his week-end diligently cultivating potatoes and vegetables, with the market value of the entire crop being between $100 to $200 (Sharashkin, field notes, 2003). A 75-year old villager in a Central Russian village, only 220 km east of Moscow, locally known for exceptional masonry skills, when offered $1,200 for three days of his work on a

building project explained that he had no free time and was busy harvesting hay. The market value of the hay he would harvest in the same three days was under $100 (Sharashkin, field notes, 2003). These and other examples indicate that the food system of self-reliance in modern Russia does not lend itself to the standard economic analysis applied to capitalist food systems, since wages, interest, capital, and often even money are absent in the system. This points to the essential similarity between today's self-provisioning and the peasant economy of both the pre-revolutionary period and the very distant past. (For an insightful discussion of the limited role of money as a means of exchange in the modern Russian countryside, see Paxson 2005).

In addition to food, dachas provide a multitude of other social benefits: decreasing the burden on the cities and city infrastructure ("empty cities" in the summer months); decreasing the pressure on lands under commercial agriculture; and better health (as dachniks escape urban pollution and spend weekends in the physical activities of gardening, rather than watching TV) (Lovell 2003). When the surplus product is sold, it provides people with healthy, locally produced food, and the buyers, in their turn, support small, or rather micro-scale local producers.

Self-provisioning culture permeates all aspects of contemporary Russian life. Even the official schedule of national holidays was progressively modified to meet the needs of the household growers. At the beginning of the growing season, when the country is planting potatoes, there is an extended holiday season: 1–3 May (Labor Day, merged with the nearest weekend) and 9 May (Victory Day, merged with the nearest weekend) amount to 8 days off work that urbanites may spend at dachas planting their crops. Many regions have instituted official "Gardener Days" to celebrate the contribution of urban growers to the economy and society.

The fact that self-provisioning is so universal, involves both rural people and urbanites, and plays a leading role in Russia's agriculture, shows that the social institution of subsistence growing with its economic, social, and cultural characteristics has persisted from the time of the peasant economy to the present day.

Conclusion

Household food production plays a central role in Russia's contemporary agriculture. We have seen that not only is it more productive than the commercial producers of the "official" agricultural sector, but also helps realize the multiple benefits inherent in small-scale agricultural production. Besides, family gardening is rooted in the long-standing traditions of self-reliance and living on the land, and has survived despite a millennium of attempts to suppress subsistence agriculture for the sake of boosting the production of extractable agricultural surplus.

Because of the emphasis authorities have always put on *non*-subsistence farming, household gardening has been under-researched. To help fill this gap, the next chapter will offer a detailed examination of the present status of family agriculture in one selected region of central European Russia — the Vladimir oblast.

CHAPTER 2

HOUSEHOLD GARDENING IN THE VLADIMIR REGION

Research purpose and objectives

In the first chapter we explored the economic, social, and cultural significance of family agriculture in Russia as a whole, on the basis of available statistics and household food production research from various disciplines — economics, social sciences, ethnography, and history. We traced the history of the self-provisioning tradition from deep antiquity to the peasant economy of the 19th century and to the present.

As we have seen, the available data allow us to draw a general picture, but without fine detail. For example, we know the figure for the aggregate output of certain crops from household plots, but the information on *how exactly* these products are grown is missing: *What growing techniques do households use? How do they control pests and weeds? How do they maintain soil fertility? Do they save their seeds or buy them on the market?* — all these important questions require additional study.

We know the total number of households owning a garden-plot, but there is little data on growers' motivations: *Why do families choose to start and maintain a garden (or not to have a garden)? What uses other than food growing do they put their gardens to?*

We know the proportion of subsidiary plot cultivators who sell their produce. But more questions beg answers: *What share of these households' output is sold? How exactly do they market their produce — travel to a market, have customers come to pick up the produce, sell through intermediaries or wholesalers, have a roadside stand?*

Besides, the quantitative studies that *are* available usually focus on the economic dimension, and often include either urban or rural gardeners, but not both. The economic dimension has been studied the most, and it also has the greatest amount of quantitative data available (primarily on the national level; with some studies on the local level). The social dimension has been studied much less (only several studies are available), and there are fewer quantitative studies or statistics available; while the *cultural* issues (e.g., adherence of growers to certain values and ideologies) have remained almost completely unexplored since the time of Chaianov, and there have been no quantitative studies.

Research purpose

The purpose of this study is to describe the economic, agricultural, and sociocultural characteristics of food gardening in the Vladimir region of Russia.

Research objectives

Research objectives for this study include:

- We have observed (see previous chapter) that on the national level household gardening plays a leading role in the country's agriculture, economy, and culture. Is gardening an important part of agriculture, economy, and social life on the regional level, in the Vladimir oblast?
- National-level data suggest that household gardening is a highly diverse and sustainable means of food production. Is this observation confirmed by the data from the Vladimir region?
- Can food gardening in the Vladimir region be viewed as a temporal response to poverty, economic hardships, and food insecurity?

- What cultural values do gardeners attach to their interaction with the land? Can gardening be viewed as a continuation of the long-standing tradition of peasant living?
- What differences can be observed between gardening households and households without a garden?
- What differences can be observed between urban and rural gardeners?

Research questions

In order to meet the above objectives, we will answer the following questions about the food gardening practice in the Vladimir oblast:

Participation in food gardening

What share of households use a garden? Is the gardening participation rate higher in rural areas than in cities? Does income level and household size affect the participation rate? What are the primary reasons for using (or not using) a garden?

Economic dimension

- *Land characteristics:* What is the size of garden-plots? What share of the plot's area is used for crop and animal raising? How did the size of the cultivation area change over the past five years, and what is the households' projection for the next five years? How many plots does each household use? What is the ownership status of the plots? How did the household acquire the plot, and how many years ago? How far are the plots located from the family's primary residence? Is the household satisfied with the size of the plot?

- *Labor characteristics:* How often do households visit their plots? How many hours per week and per growing season are devoted to tending the plot? Is hired labor used to cultivate the plot, and if so, what proportion of labor is hired?
- *Capital characteristics:* What kind of improvements are there on the garden-plot (wells, fencing, barns, etc.)? Is machinery used on the garden-plot?
- *Costs:* How much do households spend on the upkeep of their plots and what are the major expense categories?
- *Functions:* What uses do households put their garden-plots to? How important are food production, recreation and other functions of garden-plots for the households?
- *Output utilization:* What shares of the harvest are consumed by the household itself, shared and sold? How is the harvest stored or processed? For the households that sell part of their output, what revenue does it generate, and from what product categories? How do they market their products? What part of the households' monetary income is derived from the sale of the products? How did the volume of products sold change over the past five years? What is the sellers' outlook for the next five years?
- *Household food economy:* What share of food consumed is produced by the gardening households themselves? How much do households spend on food, what share of household's budget does it represent, and is this share affected by garden-plot usage?

Agricultural dimension

- *Crops and crop diversity:* What crops are cultivated, what animal products are produced? How many annual and perennial crops, on average, does each household

cultivate? How did the volume of production change over the past five years and what is the households' outlook for the next five years?

- *Soil fertility maintenance:* What methods and fertilizers are used to maintain soil fertility?
- *Weed and pest control:* How do gardeners control pests and weeds?
- *Seed sources:* Do households save their own seeds or purchase them? Do they share seeds with other gardeners?
- *Wildlife:* What is the gardeners' attitude towards the presence of wildlife on their plots?

Socio-cultural dimension

- *Agrarian values:* To what ideas connected with agriculture do households adhere?
- *Social interaction:* What relationships do gardeners have with their neighbors?
- *Information and skills:* How well informed are gardeners on gardening issues? From what sources do they obtain their information and gardening skills?
- *Problems:* What problems do gardeners face in relation to their gardening plots?

Research approaches

Quantitative vs. qualitative

This study uses the quantitative, rather than the qualitative approach, primarily because many aspects of contemporary food gardening have not been studied with quantitative methods. Therefore, quantitative data are likely to make a greater contribution to the body of knowledge on gardening practices.

With a few exceptions (notably Clarke et al. 1999), quantitative studies available on the topic (e.g., O'Brien et al. 1996; O'Brien, Patsorkovski, and Dershem 2000; Southworth 2006; Seeth et al. 1998; etc.) focus primarily on the economic, and to a lesser extent on the social aspects of food gardening. No quantitative studies of the *agricultural* characteristics of family gardens (crop diversity, growing methods, soil fertility maintenance, weed and pest control, etc.) have been conducted.

Besides, the quantitative research carried out to date is usually limited to *either* urban dacha gardeners *or* rural subsidiary plot cultivators, and therefore focuses on one aspect of the practice, and not on the practice as a whole.

A number of *qualitative* studies have been made that explore the cultural dimension of food gardening in Russia (e.g., Lovell 2003), plus there are extensive anecdotal accounts. However, most cultural aspects of the practice have remained unexplored quantitatively. Results of qualitative studies have been taken into account in building the survey instrument for this study, which will contribute quantitative data to the field of knowledge.

Descriptive vs. correlational research

This study is predominantly descriptive in nature, i.e., the primary aim is to describe the important economic, agricultural, social, and cultural characteristics of family gardening, rather than determine interrelationships between different characteristics.

Part of the reason for giving greater attention to descriptive statistics is the general lack of detailed descriptive data on the gardening practice and high relevance of these data to real-life decision making.

Once a large body of knowledge is accumulated, correlational and causal research would then become of greater interest, but it is largely beyond the scope of the present study.

Value and limitations of the regional approach

This study is limited to one particular *oblast* (region) of Russia — the Vladimir region. Limiting the scope of inquiry to one particular region has important advantages, as well as limitations.

Feasibility and meaningfulness

The greatest advantage of limiting the survey to one *oblast* is its *feasibility*. It would certainly be tempting to explore the gardening practice in the whole of Russia or in a sample of its regions, but — given the limited resources available for the study — this would require drastically reducing the number of characteristics explored in the survey.

Under our time and budget constraints, we had a choice of *breadth* or *depth* of the survey: we could obtain data on only a small number of characteristics from a sample of a national population, or we could explore a large number of characteristics by sampling a regional population. The latter presented a preferred alternative, for two reasons.

First, data on some general macro-characteristics (size and number of garden-plots, volume of output, etc.) are already available on the national (and often regional) level. On the other hand, *detailed* data on the practice are lacking, and could be obtained, with the resources at our disposal, on the regional level only.

Second, given the very high heterogeneity of the economic, social, climatic, etc. conditions in Russia, having a few national-level aggregate statistics would not be as meaningful as having a larger number of statistics for one particular region.

Relevance to decision-making

Many land-use decisions and regulations concerning agriculture and land-use in general and household food gardening in particular are the prerogative of *regional*, rather than national, governments. While the overall legal and institutional frameworks are determined on the national level, there are significant regional variations in both regional laws and how even federal-level laws are applied in practice.

Important decisions such as allocation of land for gardening and imposing limits on the maximum size of plots are made by regional and local authorities. Therefore, household gardening survey results from a *regional* survey such as ours will be the most relevant to public authorities' decisions in this region.

Generalizability

The greatest disadvantage of the regional approach is lack of generalizability. Survey results from the Vladimir region are not generalizable to the whole of Russia.

Any extrapolation of the survey results beyond the study oblast will be a speculation, and such extrapolation will be ever more difficult the further we move beyond the survey oblast. I would cautiously suggest that the study results would be highly applicable to the oblasts of the Central European Federal District of Russia, with the exception of the city of Moscow and the Moscow oblast. The oblasts of this Federal District (of which the survey oblast constitutes a part) share many of the climatic, soil, economic, and socio-demographic characteristics, as well as history, and I would hypothesize that most characteristics of the gardening practice in the District as a whole are similar to those in the Vladimir region surveyed. But verifying that, as well as the applicability of findings to other regions of Russia, will require further research which is beyond the scope of the present study.

Methodology

Research Design

This is a *survey research* study. It is predominantly *descriptive* survey research, with elements of *correlational* survey research. I seek to describe the characteristics of the target population — households of the Vladimir region — and then determine the relationship between some of those characteristics. I will not try to establish causality between the characteristics. I used a survey as an instrument for data collection.

The survey was conducted in the Vladimir oblast — one of the oldest regions of the central European part of Russia, with a population of just under 1.5 million people.

Details of the research design (study region, population, sample, etc.) are discussed in the following sections.

Study region

As discussed earlier, feasibility considerations required that this study should focus on one particular oblast (region) of Russia. The selected region was the Vladimir oblast in central European part of Russia, east of the Moscow oblast. (*Oblast* is an administrative territorial body within the Russian Federation, somewhat similar in status to a *state* in the U.S. or a *province* in Canada. *Oblast* is often translatable as "region." Note that the term "region" may also refer, in certain contexts, to a geographic region composed of several oblasts, so wherever clarity is required, the term *oblast* will be used to avoid confusion. For the most part, however, both "region" and "oblast" will be used interchangeably, and the English plural ending — oblasts — will be used as necessary.)

The Vladimir oblast has been selected for this study for the following primary reasons:

1) Vladimir oblast's natural, socio-demographic, and economic conditions are characteristic of central Russia at large (with the exception of Moscow and the Moscow oblast, which are set apart from the surrounding oblasts by their significantly larger population and income levels).
2) The Vladimir oblast is one of the oldest provinces of central Russia, and therefore shares in the region's history and culture: from the family clan-based society of the Slavic tribes in the first millennium CE, to the forced imposition of princely rule and Christianity after the 10th century, throughout the period of serfdom lasting till late 19th century, through the Soviet era, and right up to the present time. Given this continuity, the Vladimir oblast is an attractive choice for studying the peasant culture still preserved through food gardening by villagers and urbanites alike.
3) Unlike several other oblasts of central Russia, the Vladimir oblast was not affected by the radioactive fall-out from the 1986 Chernobyl nuclear power plant accident. Therefore, gardening and agricultural practices and attitudes are not distorted by the presence of high levels of radiation.
4) I have strong family ties to this region and thus have had an opportunity of familiarizing myself with it (in both urban and rural settings) for the past 25 years. I am a resident of this oblast, which made it organizationally easier to prepare and conduct the survey in this particular region. Besides, this makes the survey results more relevant to my future professional activity.

Figure 19 shows the Vladimir oblast on the map of Russia, while Figure 20 shows its topography and Figure 21 — its administrative divisions.

Land. The region occupies a land area of 29,100 km^2, extending 170 km in the North-South, and 280 km in the East-West direction. The city of Vladimir (the oblast's capital) is

190 km east of Moscow. Fifteen thousand (15,000) km^2 (= 1.5 million hectares), representing 52% of the region's area, is forested (Scotch pine, white birch, European spruce).

Climate. The region has cool temperate, continental climate with a growing season of 115 days. Average January temperature is -8ºC, average temperature in July is +20ºC.

Population. The region's population (2007) is 1.46 million people, down from 1.69 million in 1989, and has been declining since 1991. Seventy-eight percent (77.7%) of the population (1.13 million) is urban, and 22.3% (0.33 million) is rural. Population density is 50.2 people per km^2. Largest cities are Vladimir (340,000), Kovrov (151,000), and Murom (121,000).

Administrative division. The Vladimir region (2007) has 23 cities, 9 towns (*poselok gorodskogo tipa*), and 2,475 villages (of which 227 villages, or 9.2%, are "dead," i.e., have no living population). The oblast is divided into 16 rural *raions* (districts).

Figure 19. Vladimir oblast (red) on the map of Russia

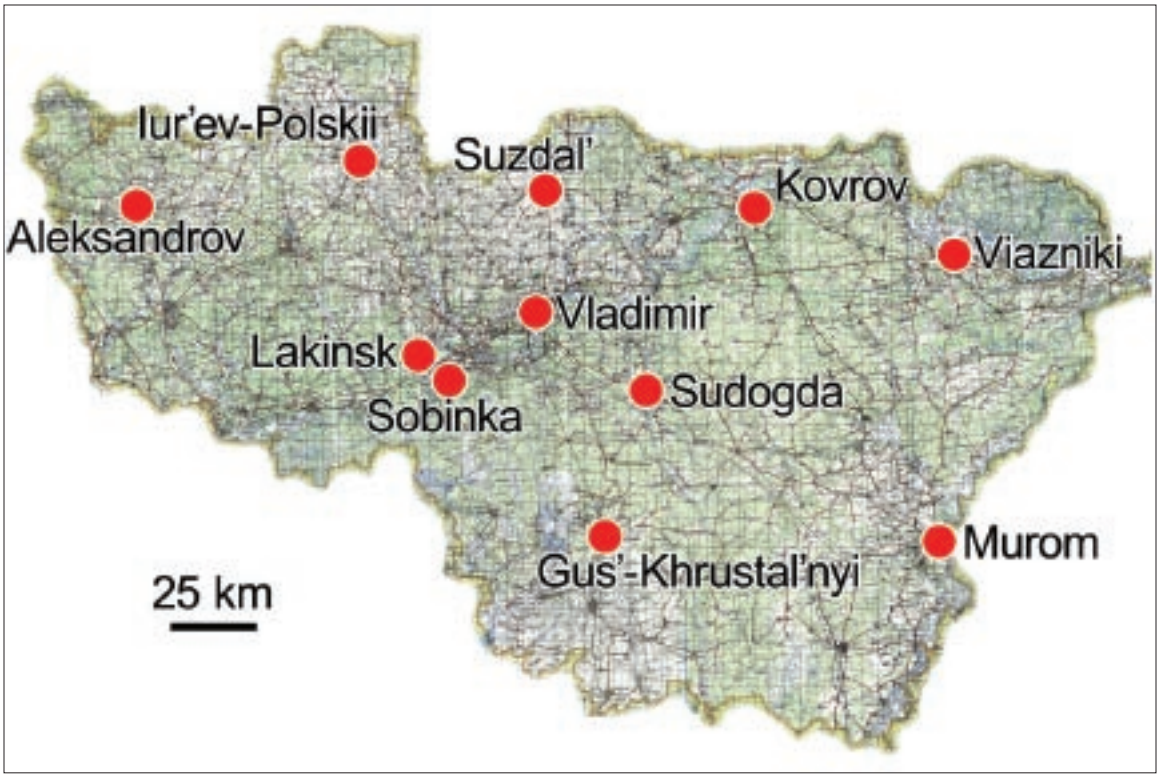


Figure 20. Topographic map of the Vladimir oblast.

Figure 21. Map of the administrative divisions (raions) of the Vladimir oblast.

Economy. In 2005, the Gross Regional Product of the Vladimir oblast amounted to 187.7 billion rubles (approx. equal to US$2.2 bn). The largest contributions to the GRP are made by manufacturing (34.1%), agriculture and forestry (11.8%), trade (10.6%), and transportation and telecommunications (10.2%).

Population

Unit of observation: family (household)

In the early 20th century, Chaianov (1925) demonstrated that agricultural activity was closely linked to the peasant household: the size of the family, as well as the ratio of workers to non-working dependents, seemed to influence a household's important decisions such as the amount of labor to expend on food production or quantity of food to produce. As we saw in Chapter 1, *family* was indeed the basic constituent of the land-based lifestyle prevalent in Russia from ancient times right up to the 20th century (Shinn 1987).

Indeed, even today gardening involves collective work on the part of several members of the household. There are certain types of work (such as construction of shelter or other physically strenuous tasks) that have traditionally been carried out by male members of the family, while others (such as weeding of the garden-beds or making preserves for the winter) have been viewed as the women's domain. Even family members who may not be directly involved in garden upkeep usually benefit from garden's output or these members' very existence may influence garden-related decisions made by other, gardening, family members.

That *families* (or *households*), rather than individuals, are the main food gardening actors in today's Russia is widely recognized. Even the government statistics agencies which collect and report data on food gardening invariably refer to the number of *households* (rather than individuals) owning a garden-plot.

For the above reasons the natural choice of the unit of observation for this study is not an individual, but a *family* (household), including families consisting of one individual.

Target population

The *target population* for this study is therefore the *private households* of the Vladimir oblast. Private households (in accord with the terminology adopted by Russia's statistical agencies) are individuals living alone, or a group of people (usually a family) living in the same dwelling (most often a house, an apartment, or a room in an apartment), sharing income and managing their household together. While a private household may consist of individuals that are not related by blood, marriage, or a marriage-like relationship, in the majority of cases these households *are* what we would call a "family" (including families consisting of just one individual). For this reason I will often use the term "family" and "household" interchangeably.

The so-called "collective households" (as opposed to the *private* households which constitute the target population for this study) include orphanages, asylums, hospitals for chronic inpatients, monasteries, army barracks, prisons, and other similar institutions. Because of the specificity of the regime in these collective households, members of these households usually cannot make independent decisions in regard to gardening activity (or abstaining from it). For this reason collective households are expressly excluded from this study and do not constitute part of the target population. According to the 2002 population census, 1.8% of the population of the Vladimir oblast live in such "collective households," while the remaining 98.2% live in private households, which comprise the target population of this study.

Another group that is excluded from the target population is households of the homeless. According to the 2002 Census, the Vladimir oblast had only 109 homeless households, or less than 0.02% of all non-collective households.

As of January 1, 2006, the Vladimir oblast had 580,710 private households, of which 438,831 (75.6%) were urban and 141,879 (24.4%) were rural. For detailed data on the geographic distribution of these households, see "Sampling design" section below.

Accessible population

Because, as will be discussed below, the survey frame is based on *dwellings* (since those are the physical locations with which households are the most closely and permanently linked), not all households of the target population are accessible. The *accessible population* for this study is the private households of Vladimir region residing in dwellings that are recognized by public authorities (including statistical agencies) as dwellings intended for year-round habitation.

Because of decades of centralized control over settlement patterns, and because of the land-use laws now in effect, construction of recognized year-round dwellings has been confined almost exclusively to the boundaries of urban and rural settlements. Under the Russian Land Code, each plot of land has a specific "designation" (e.g., agriculture, industrial use, settlement), and lands where construction of year-round dwellings is allowed fall almost exclusively under the designation "settlement lands." What it means, in practice, is that legal construction of permanent year-round dwellings can usually occur only within boundaries of "settlements" (i.e., cities, towns, and villages).

There is a sizeable group of dwellings, however, that are built on lands with a designation other than "settlement" and outside the boundaries of urban or rural "settlements."

These dwellings are the summerhouses on dacha- or garden-plots (*sady*). Dacha and gardening settlements have usually been constructed on *agricultural* lands. During the Soviet period, there were stringent restrictions imposed on the size, type, and function of habitable structures that were allowed on the garden-plot. Houses erected on garden-plots were not allowed to have insulation or heating system sufficient to turn them into a year-round dwelling.

In the 1980s and 1990s most of these restrictions were lifted. As a result, dachniks received an opportunity to build a dacha house that is habitable year-round.

Today, some households live in their dacha house year-round. However, such dacha houses continue to be outside any recognized settlement, on a land-plot still designated "agriculture" (which includes gardening but not year-round residential use).

Therefore, the households that inhabit a structure not recognized as intended for year-round human occupancy will not be part of our accessible population. There is no data available on the number of households that use their garden-plot house in such a manner. However, this number is probably not very high, as using a dacha/garden house for year-round habitation *without* at the same time maintaining a city residence is still fairly uncommon and difficult. For one thing, it would place the household outside the law: according to Russian laws, each individual must notify the local police department of their place of residence (*propiska*), and this residence can only be within recognized settlement boundaries.

Another part of the target population which is not accessible are the households away from their permanent residence in the Vladimir region for the duration of the survey. To minimize the number of households that would be away and thus inaccessible, we selected the period of the year (from the last week of November to the last week of December) when it is very uncommon for households to travel (especially for the *entire* household). This

period lies outside both the traditional summer vacation travel and even the less common winter holiday travel in January.

Finally, a potentially inaccessible part of the target population are residents of remote villages inaccessible during winter time because of snow. However, the majority of inhabited villages have roads serviced and accessible by a vehicle in winter. In our particular case, November and December 2006 (the field phase of the survey) witnessed relatively high temperatures and little snow, and all rural survey sites could be successfully accessed.

Overall, the vast majority of the target population is likely to be accessible for this study.

Sampling design

Sample size

As of January 1, 2006, there were an estimated 580,710 private households in the Vladimir region. According to Krejcie and Morgan (1970), with this size population a sample size of 383 would be sufficient to yield statistics within a confidence interval of 95%. However, to further increase precision and reliability of results, as well as to enable reliable comparisons between groups, I selected the maximum sample size within the fieldwork budget available — 1,500 households, or 0.26% of all households in the region.

According to the formula for random samples:

$$ss = (Z^2 * p * (1-p)) / c^2$$

where

ss is the sample size,

Z is Z value (e.g., 1.96 for 95% confidence level),

p is percentage of respondents picking a choice, expressed as a decimal (0.5 yields the maximum sample size), and

c is the confidence interval, expressed as a decimal (e.g., 0.04).

With ss=1,500 and p=0.5, the confidence interval equals 0.0253 at the 95% confidence level and 0.0333 at the 99% confidence level (note that for large populations such as ours the size of the population produces only negligible influence on the sample size). Therefore, the sample size of 1,500 selected for this study is sufficient to produce reasonably accurate statistics. The above formula applies to samples using simple random selection rather than multi-stage sampling. However, even with some loss of precision and larger variances resulting from the use of a multi-stage sampling technique, given the large sample size, the results are likely to be sufficiently accurate to meet my research objectives.

Sampling technique

I used a *multi-stage sampling* technique, which yields a random sample representative of the population. In developing a sampling design, I relied on the recommendations of Kish (1965).

The sampling involved four stages:

- Stage 1 — *proportionate stratified sampling*: dividing the population into five large strata (groups of cities or rural districts);
- Stage 2 — *cluster sampling* using *probabilities proportional to size (PPS)*, to select, within each stratum, clusters (cities or rural districts) for further sub-sampling;
- Stage 3 — *cluster sampling* using *probabilities proportional to size (PPS)*, to select, from each cluster, elements (streets in cities or villages in rural districts) for further sub-sampling;

- Stage 4 — *systematic sampling* of elements to select households for interviewing.

In Stage 1, the population was divided into five large strata, and the 1,500-household sample was divided among these five clusters proportionately to their size (see Table 15).

Table 15. Stage 1 of sampling: proportionate stratification.

Stratum	**Households in this stratum**	**Share of all households**	**Share of sample, households**
1. Largest cities (over 100,000 households each)	127,098	21.9%	328
2. Large cities (30,001 to 100,000 households each)	104,462	18.0%	276
3. Mid-size cities (10,001 to 30,000 households each)	97,534	16.8%	252
4. Small towns (10,000 households each and under)	109,736	18.9%	288
5. Rural *raions* (villages and rural settlements)	141,879	24.4%	360
Total	**580,710**	**100.0%**	**1,500**

This initial stratification was necessitated by the greatly varying size of clusters (cities and rural districts). Grouping similarly sized clusters into strata offered the potential benefit of greater homogeneity within the strata, which could result in smaller variances and greater precision of measurement. Another important benefit of stratification is that each stratum can then be treated as a separate sample for further sub-sampling, which allows for the use of different sampling techniques in each stratum. Finally, the use of *proportionate* stratification offered the important benefit of *self-weighting* measures which require no application of weights to the statistics.

In Stage 2, clusters were selected within each stratum, using the *probabilities proportional to size (PPS)* technique. The results of Stage 2 are presented in Table 16. Note that since stratum 1 includes only one city (the region's capital, Vladimir), the probability of it being selected equaled 1, and this cluster is self-representing. The number of clusters selected in each stratum was determined by the size of the stratum as well as the practicability

Table 16. Stage 2 of sampling: cluster sampling using probabilities proportional to size measures.

(1) Stratum or cluster	(2) Pop. in private hhds	(3) Private hhds	(4) Sample, hhds	(5) Elements	(6) Size of element, hhds	(7) Interviews	(8) Response rate
1st STRATUM (21.9%)	**332,189**	**127,098**	**324**	**27**	**12**	**277**	**85.5%**
Vladimir	332,189	127,098	324	27	12	277	85.5%
2nd STRATUM (18.0%)	**266,839**	**104,462**	**276**	**23**	**12**	**215**	**77.9%**
Kovrov	145,617	58,129	276	23	12	215	77.9%
Murom	121,222	46,333					
3rd STRATUM (16.8%)	**245,599**	**97,534**	**252**	**18**	**14**	**203**	**80.6%**
Aleksandrov	63,548	25,301	126	9	14	100	79.4%
Gus'-Khrustal'nyi	63,731	24,249					
Kol'chugino	45,977	19,087					
Viazniki	41,982	16,594	126	9	14	103	81.7%
Kirzhach	30,362	12,303					
4th STRARUM (18.9%)	**277,077**	**109,736**	**288**	**24**	**12**	**241**	**83.7%**
Iur'ev-Pol'skii	19,376	7,984	72	6	12	61	84.7%
Sobinka	19,761	7,931	72	6	12	61	84.7%
Strunino	15,471	6,316					
Lakinsk	16,209	6,311	72	6	12	62	86.1%
Karabanovo	15,601	6,267					
Raduzhnyi	17,664	6,199					
Pokrov	15,362	6,088					
Petushki	15,302	5,997					
Melenki	15,661	5,976					
Gorokhovets	13,723	5,779					
Kameshkovo	13,807	5,486					
Sudogda	12,709	4,810	72	6	12	57	79.2%
Suzdal'	10,974	4,356					
Krasnaia Gorbatka pgt.	8,990	3,768					
Kosteriovo	9,020	3,757					
Balakirevo pgt.	9,212	3,611					
Stavrovo pgt.	7,724	3,007					
Kurlovo	7,056	2,776					
Melekhovo pgt.	6,614	2,638					
Nikologory pgt.	6,273	2,494					
Vol'ginskii pgt.	6,226	2,371					
Gorodishchi pgt.	5,890	2,344					
Mstera pgt.	5,172	2,116					
Gusevskii pgt.	3,280	1,354					

[Table 16 continued.]

(1) Stratum or cluster	(2) Pop. in private hhds	(3) Private hhds	(4) Sample, hhds	(5) Elements	(6) Size of element, hhds	(7) Interviews	(8) Response rate
5th STRATUM (24.4%)	**347,966**	**141,879**	**360**	**24**	**15**	**255**	**70.8%**
Gus'-Khrustal'nyi raion	44,036	17,173	90	6	15	62	68.9%
Viaznikovskii raion	33,269	14,028					
Sudogodskii raion	30,397	12,485					
Suzdal'skii raion	34,661	12,082	90	6	15	64	71.1%
Muromskii raion	26,556	11,719					
Melenkovskii raion	24,038	10,093					
Kovrovskii raion	22,803	9,302					
Kameshkovskii raion	19,484	8,602	90	6	15	65	72.2%
Iur'ev-Polskii raion	18,664	7,491					
Sobinskii	18,170	6,767					
Petushinskii raion	15,377	6,612	90	6	15	64	71.1%
Aleksandrovskii raion	14,132	5,860					
Kolchuginskii raion	12,368	5,399					
Selivanovskii raion	12,132	5,055					
Gorokhovetskii raion	11,040	4,863					
Kirzhachskii raion	10,839	4,348					
Urban total (str 1,2,3,4)	1,121,704	438,831	1,140	92	12–14	936	82.1%
Rural total (str 5)	347,966	141,879	360	24	15	255	70.8%
TOTAL	**1,469,670**	**580,710**	**1,500**	**116**	**12–15**	**1,191**	**79.4%**

Note: selected clusters marked in *italics*. *Pgt.* stands for *poselok gorodskogo tipa*, or "small town" (literally, a "settlement of [the] urban kind").

of interviewing (which discouraged the selection of too many clusters). Overall, I aimed at the largest number of clusters within my field work budget constraints. A total of 12 clusters were selected.

The application of the stratification and PPS techniques used in Stages 1 and 2 required the information on the number of households in each cluster (city and rural district). For rural districts, these data were available in the ready-made form from a publication of the Vladimirstat (2006a), the regional branch of Russia's Federal Statistics Agency. This

source provides the number of permanent households for each of the 2,475 rural settlements of the Vladimir oblast as of January 1, 2006.

Information on the number of *urban* households, however, is not updated or published on a regular basis — Vladimirstat only publishes data on the size of the *population* of each urban settlement, as of January 1 of each year. The most recent comprehensive statistics on the number of urban *households* in each city comes from the results of the 2002 Census (which counted *both* the number of private households and the number of members of these households, as well as the total population including all private households, collective households and the homeless). I used the data from the 2002 Census (Vladimirstat 2005), as well as the data on the size of *population* for each city as of January 1, 2006, to estimate the number of urban *households* as of January 1, 2006, under the assumptions that between 2002 and January 1, 2006, a) the proportion of population residing in private households in the total population remained constant and b) the average size of private households remained constant. For example: according to the results of the 2002 Census, the population of the city of Kovrov in 2002 is known to be 155,499 people, of which 145,617 people (96.0% of the total population) lived in 59,620 private households. Thus, the average size of the household in 2002 was 2.51 people. We also know that as of January 1, 2006, Kovrov's population was 151,610 people. Assuming that 96.0% of it still resided in private households, the population of private households is estimated at 145,617 people (96.0% of 151,610). Next, assuming that the average size of private households remained the same as in 2002 (2.51), we divide 145,617 by 2.51 to obtain the estimate of the number of private households in 2006 — 58,129. Applying this procedure to all urban settlements, we obtained the data presented in columns 2 and 3 in Table 16. Given that only four years separate the 2002 Census and our survey in 2006, as well as the fact that both the share of private households' population in the total population and the

average size of households evolve slowly, I deem the estimates calculated to be highly reliable (assuming, of course, the reliability of the state-reported statistics they are based on!).

Stage 3 of the sampling process involved selecting *elements* (city streets for urban settlements and villages for rural districts) from which households were then to be selected for interviewing. In accordance with the PPS procedures, the number of elements and their size was constant for clusters within each stratum. This assured that each element and each household in the population had an equal chance to be selected, i.e., that the sampling was random. The size of the elements was determined based on field work feasibility considerations (the smaller the number of elements, the easier it is for interviewers) as well as the need to have a sufficiently large number of elements for greater precision of measurement. The largest element size (15 households) was for rural clusters — this allowed a limit on the number of elements (villages) of 6 per each of the 4 rural districts, which made rural travel easier and less expensive.

Applying PPS selection in Stage 3 required the data on the number of households for each street (cities) or village (rural districts). For rural districts, these data were obtained from the same Vladimirstat (2006a) publication referenced above. For urban clusters, the directory of streets and the number of dwellings (which were used for approximating the number of households) for each street was obtained from Vladimirstat and other regional and municipal authorities.

The use of PPS in Stages 2 and 3 had the benefit of assuring *self-weighting* measures, as well as controlling the sample size.

In Stage 4, households were *systematically* selected within each element chosen in Stage 3, and interviewing schedules were compiled. The number of completed interviews and response rates achieved are presented in Table 16 above.

Addressing errors

Sampling error. To minimize the risk of the sample being non-representative of the target population, a *probabilistic* sampling technique was used — multi-stage sampling involving proportionate stratification, PPS; and systematic selection.

Selection error. Highly reliable statistical and other sources were used to generate the sample. The use of directories (which may have omissions, duplicate records, etc.) was avoided.

Frame error. I used the most up-to-date and the most complete frames available. This minimized frame error to the greatest possible extent.

Non-response error. I used personal interviews to maximize the response rate. The overall response rate achieved was 79.4%, which is high for comparable kinds of research in the Vladimir oblast. For a more detailed discussion of the steps taken to maximize the response rate, see section on *Data collection* below. The response rate was relatively uniform within strata. Since the response rate achieved differs somewhat between the rural stratum #5 (70.8%) and the average for urban strata ##1, 2, 3 and 4 (82.1%), ideally the weights should be applied to the survey results to compensate for the differences in the response rates. However, given the very large number of characteristics measured in this survey that need to be discussed, the differences in response rates between strata are ignored in the present analysis. In the future, publications that may stem from the results of this survey will concentrate on just a few characteristics, and the differences in response rates may then be taken into account to further increase the precision of results.

Instrumentation

Description of instrument

The survey instrument used in this study is presented (in English translation) in the Appendix.

Even though several researchers have collected quantitative data on *some* aspects of food gardening and its role for households (see especially Clarke et al. 1999), there have been no comprehensive efforts to look at the economic, agricultural, social, and cultural dimensions of food gardening in a context of a single quantitative study. Therefore, given the absence of ready-made instruments, a questionnaire was specifically developed for this study.

In compiling the questionnaire, I took into account the questionnaire used by Clarke et al. (1999) and also the one used in the Russian Longitudinal Monitoring Survey of households, but both were only tangentially relevant to my research objectives. Therefore, my questionnaire was mostly created from scratch, based on the research objectives and the corresponding data requirements.

The most common type of question used was one requiring the respondent to select either one or more (all the applicable) answers to a specific question. In one question the respondent was asked to select and *rank* up to three answers according to their perceived importance. In several questions the respondent was asked for a number to quantify some aspect of gardening (e.g., distance to the garden-plot, or a ruble amount derived from the sale of a particular product, etc.). Finally, in a number of questions a Likert scale was used, and respondents were asked to assign the level of importance to a number of factors (from "very important" to "unimportant") or to express their agreement or disagreement with a certain statement (from "strongly agree" to "strongly disagree").

Since the unit of observation in this survey is a household, most of the questions related to the household as a whole, and not to the member of the household that was answering the survey questions.

While most of the questions and answers are fairly straightforward, the questions which required a substantial effort were the ones dealing with the cultural characteristics. I will now discuss the development of these questions in greater detail.

Measuring cultural characteristics

An important aspect of this survey is to determine adherence to certain cultural values. Since a large number of characteristics are measured, certain cultural values can be measured indirectly, inasmuch as they are evident in households' behavior, decisions, and choice of *lifestyle*. For example, if a household which is financially wealthy engages, at the same time, in cultivating potatoes, it is unlikely that for this household gardening represents a "survival strategy" or is dictated by food security concerns (since potatoes are one of the least expensive and most readily available food commodities). Such household's *behavior* suggests that the significance they attach to food growing goes well beyond the task of self-provisioning alone, and can be seen as a reflection of their values.

Such *values expressed in behavior* represent, to me, a much more reliable means of exploring the invisible realm of values, since actions usually convey better than words the core of one's innermost convictions and views on life. All the more so given common discrepancies between declared values and actual behavior, especially in the field of environmental attitudes (e.g., Pardo 2002; Diekmann and Preisendorfer 1998). Likewise, Buttel and Flinn (1975) showed that many American urbanites continue to adhere to agrarian

values (including the notion that rural life is better and more virtuous than city life) even when their actual lifestyle no longer corresponds with the ideals of simplicity, humble rural labor, and closeness to nature.

Thus, my primary approach is to allow gardeners' and non-gardeners' *actions*, at it were, to "speak for themselves." However, recognizing a possibility for different interpretations of and views on the underlying causes of the observable behavior, I felt a need to include specific questions in the survey instrument, designed to measure adherence to cultural values associated with gardening. But, again, to avoid misinterpretation, these measures should be used in conjunction with the measured behavioral characteristics.

In operationalizing the concepts of culture and values for my research, I drew upon the experience of American rural sociologists in defining and measuring some of the values germane to human-land relationship — values known as *agrarian*. Researchers have observed that a set of values has been shared by American farmers and society in general and that these values persist to the present day, even though actual farming practices or lifestyle in general no longer accord with these values (Dalecki and Coughenour 1992; Buttel and Flinn 1975; Flinn and Johnson 1974).

In their influential article Flinn and Johnson (1974) grouped the range of agrarian values in five categories: primacy of agriculture (farming as the basic economic activity upon all other activities are dependent), the virtue of rural life as opposed to city life, the economic independence of farmers, hard work as a way to demonstrate one's virtue, and family farms as a backbone of democracy. This list was widely accepted by sociologists as expressing the "agrarian creed" and numerous studies on this subject were subsequently conducted and have provided empirical evidence for agrarian ideology being widely accepted by both farmers and non-farmers.

Another measurement framework relevant to this study is that of adherence to alternative vs. conventional agricultural paradigms (Beus and Dunlap 1991; Beus and Dunlap 1994; Dunlap et al. 2000). In these studies, respondents were asked to express their attitude to a set of statements such as "Agriculture is the most basic occupation in our society and almost all other occupations depend on it," on a Likert scale.

This experience in conceptualizing and operationalizing the agrarian creed is of high relevance to my research, especially since several of the agrarian values shared by Americans are equally relevant to Russian society, where the tradition of peasant living has very deep roots.

Since contemporary gardeners also seem to have strong environmental ethics, another relevant area of social sciences research is that of environmental values. For example, the theoretical framework for understanding how values, beliefs and norms are translated into environment-related action have been elaborated by Stern and Dietz (1994) and Stern et al. (1999). Analyzing the ethical claims made by a wide array of environmental groups, Stern et al. formulated a "value-belief-norm theory of support for environmental social movements." The framework they suggested is striving for synthesis of previously proposed theories to explain environment-conscious behavior (consumer behavior, willingness to sacrifice, environmental citizenship, demonstration, personal norms, awareness of consequences, and the new ecological paradigm) and is built around 13 values commonly finding expression in statements made by environmental groups. The value-belief-norm theory was applied by Jones (2002) to the study of social responsibility activism in an attempt to explain "why people change their lifestyles to change the world" (title). However, the framework proposed by Stern et al. is used to measure the degree to which individuals share certain values and not necessarily the extent to which these values guide their actions

in everyday life. Also, Stern et al. developed and applied their theory to the *support for* environmental movements, and not necessarily to personal participation in these movements. These are two essential limitations, since numerous studies have demonstrated discrepancies between values and behavior (Pardo 2002) and significant differences in behavior between *participants* of environmental movements and supporters who do not personally participate (Jacob and Brinkerhoff 1999; Fotopoulos 2000). These discrepancies between shared values and actual behavior may be relevant in our case of studying gardeners and non-gardeners, as noted above.

Not all values or items constituting the above-mentioned scales were relevant to my study, while some of the values were missing. The final 22-item scale can be found in question No. 54 of the questionnaire.

Sharashkin and Barham (2005a, 2005b) traced the persistence of a number of cultural/spiritual values from the peasant economy to dacha and subsidiary plot cultivation in the Soviet Union and up to the present day. Drawing on Chaianov's insights into the values shared by Russian peasantry in the early 20th century (Kremnev 1920), as well as other researches (notably Lovell 2003 and Paxson 2005) and sources such as the Ringing Cedars Series by contemporary Russian author Vladimir Megré (a series of books on spirituality and nature, which spells out the ideology of Russia's emerging eco-village movement and has striking parallels with Chaianov), we presented a list of values that may be shared by gardeners — and those were used to construct the items operationalizing the concept of culture and cultural values pertaining to gardening. These items, with corresponding survey questions, are summarized in Table 17 below.

Table 17. Items for measuring cultural values in the survey of food gardening in the Vladimir region.

	Values	Example of survey items	Survey item no.
A	**Primacy of agriculture:** Viewing agriculture (incl. gardening) as the foundation of all other economic activity	Strong agriculture is the foundation for a strong national economy.	1, 9, **12**
B	**Land-based households make a strong state:** Prominently discussed by Chaianov, Megré, and students of American agrarianism	Many problems of today's Russia result from cities being overpopulated while rural areas are dying out.	**18**
C	**Agricultural life is natural and good, city life is evil:** Based in the traditional religion and the history of subversion of rurality by the city	Life in the city is better than life in the country. (negative formulation)	-3, **18**
D	**Gardening contributes to well-being:** Plentiful anecdotal evidence and research on gardening in Russia and America	Gardening improves one's physical and mental health.	17, 24
E	**Food quality:** Seeing food grown on one's own plot of land by one's own hands as superior to any food that can be bought on the market	Produce grown on one's own garden-plot is more environmentally safe, healthier, and tastier than what can be bought in a store.	6
F	**Complete economic independence:** Prominent agrarian value in both Russia and America	It is more important for our household to have a garden and be self-sufficient than try to increase our monetary income.	4, **15,** 20
G	**Creativity of labor:** Gardening and agriculture seen as a way to creatively express oneself (discussed by both Chaianov and Megré)	Working with plants and the soil allows one to demonstrate one's creativity.	19, 21
H	**Peasant lifestyle as a millennia-long tradition:** Gardening as a way to maintain rootedness in tradition (Chaianov, Megré, anthropologists)	The centuries-old tradition of land-based living in our country is still of great relevance today.	5, **7,** 23
I	**Uniqueness of Russia's path:** The country's history and culture are unique, and it has its own way and destiny, including in agriculture and gardening	Russia needs to follow its own path of development and not try to imitate that of Western nations.	**7, 15**
J	**"Small is beautiful":** Preference for small and diversified agricultural producers	Small to mid-size farms should become the backbone of Russia's agriculture.	9, 11, -14
K	**Agriculture's spiritual function of maintaining contact with the earth:** Based on traditional lifestyle and ancient beliefs	It is essential for each person to maintain a direct link to living nature and gardening provides such a link.	**13,** 16, -22
L	**Agriculture should receive support from higher powers:** Be it a universal life-force, a deity patronizing agriculture, a tsar, or a president	The government should provide more support for the development of the country's agriculture.	-8, **12**
M	**Intergenerational importance of gardening:** Humanity included in the same cycle of birth-death-rebirth as is evident in nature	Every person must plant at least one tree in his/her lifetime.	**13**

Notes to Table 17: 1) Items 2 and 10 in Question 54 do *not* constitute part of the cultural scale. 2) A minus sign in front of a question indicates that a *disagreement* with the statement means endorsement of the given cultural value. 3) Some statements relate to more than one category of values and have their number marked in bold.

It should be noted that the line between some items is blurred. Likewise, some survey items are relevant to more than one value.

A limitation of the application of the scale in this particular study should also be noticed. Our unit of analysis is a household, not an individual. Ideally, therefore, we would want to have each adult member of each household answer the questions on their adherence to the cultural values. However, this was not feasible in this study, given the finite resources available for it. Therefore the responses to Question 54 can be interpreted in two possible ways.

First, we can view them as responses of *individual* respondents, rather than households. However, since our sample was constructed to randomly select *households* rather than individuals, the selection of the individual respondents is not perfectly random (as individuals in smaller households had a greater chance of being selected). Therefore, the results refer to the sample of individuals only, and are not representative of the population's characteristics.

The second approach is to use responses from the individual member of a household as a proxy for the overall position of the household as a whole. Of course, adherence of a particular household *member* to certain values does not necessarily mean that the remaining members of the household hold exactly the same views. However, since gardening is essentially a *family* undertaking (of which the interviewed member of the household is a part), the values of one family member may tend to be representative of the values shared by other members of the household as well. The degree to which members of the same

household differ in respect to the gardening-related values they share requires additional investigation. So, for the purposes of this study, we need to recognize that the responses reflect the position of the individual respondents and not the whole household, *but* can be cautiously used as a proxy.

The items in Question 54 provide important data even when examined one by one. Additionally, to present the results in a more concise manner and allow easier comparison between groups, a scale was constructed. For positively-formulated statements (the ones agreement with which indicates adherence to the value the item represents), each answer "strongly agree" is assigned the numeric value of 3.0, "agree"=2.5, "do not know"=1.5; "disagree"=0.5 and "strongly disagree"=0.0. For negatively-formulated statements (items 3, 8, 14 and 22), the order is reversed ("strongly agree"=0.0, "agree"=0.5, "do not know"=1.5; "disagree"=2.5 and "strongly disagree"=3.0). The sum of resulting scores for all 22 questions (max 66, min 0) is then multiplied by 100/66. The resulting final score therefore lies between 0 (total lack of adherence to the "agri-cultural" values) and 100 (strongest adherence to these values). 50 represents the neutrality point or lack of overall opinion; a score over 50 represents the overall adherence to the values and a score under 50 — an overall lack of adherence.

Note that for brevity, and to differentiate the values discussed above from the ones known by the term "agrarian" to American rural sociology, I will refer to the values studied herein as "agri-cultural."

Validity procedures

To insure validity of the survey instrument, it was reviewed by a panel of experts composed of members of my Dissertation Committee and outside experts — including those who

have experience in conducting rural sociology research in Russia. The experts inspected the instrument for *face validity* and *content validity* and provided their comments. Changes to the instrument were made as appropriate.

Reliability procedures

Prior to the actual survey, a pilot test was conducted with 10 subjects from the target population, not included in the sample. It helped to determine whether all the questions were formulated in a manner easily understandable to the respondents and were unambiguous. Small modifications to the wording of several questions were made as a result of the pilot test, and the instrument was then finalized for the actual survey.

Data Collection

Survey type selection

Early in the survey design process, the possibility of a *telephone* survey or *mail* survey was ruled out. Both these survey types have serious limitations in provincial Russia, including our survey region, the Vladimir oblast.

The phone survey was deemed unfeasible for three major reasons. First, a relatively low rate of private phone ownership in the region, especially in rural areas: while approx. 60% of urban households in the Vladimir oblast have a home telephone, only approx. 24% rural households have the same. Second, incomplete frames: phone companies do *not* publish phone directories for households, and obtaining one for the whole region is virtually impossible. Finally, because of the length of the survey (approx. 45 minutes), complexity of some questions and personal nature of questions asked, administering the survey over the phone would be complicated.

The mail survey was not practicable for two major reasons: as a rule, mail surveys in Russia get a *very* low response rate; besides, there are significant difficulties with obtaining complete frames.

Therefore, *personal interviews* were selected as the best alternative for conducting the survey.

Interviewers' selection and training

For implementing the field phase of the survey, I partnered with the Vladimir-based non-profit Independent Agency for Regional Research (*Nezavisimoe agentstvo regional'nykh issledovanii*, NARI). The Vladimir Chamber of Commerce as well as several Vladimir sociologists referred me to this organization as a leader in sociological field research, and one with the largest interviewers' network in the region.

NARI has an extensive network of experienced and well-trained interviewers and field work supervisors and since 2000 has been conducting social sciences and marketing field survey projects for academic researchers, commercial enterprises, mass media, and political candidates.

Partnering with NARI and gaining access to their experienced interviewers' network had obvious advantages over recruiting and training interviewers from scratch. Besides, NARI has extensive knowledge of the region and high-quality frames for all major urban centers, which helped with increasing the quality of the sampling design.

A total of 22 interviewers were employed, including 12 in Vladimir; 6 in Kovrov; 5 in Aleksandrov; 3 in Iur'ev-Pol'skii; 2 in Viazniki and 1 in Lakinsk (some interviewers worked in more than one city). Other urban centers as well as rural raions were covered by 8 interviewers from Vladimir.

All interviewers without exception are experienced in field survey research. Many had worked for NARI for over 4 years, participated in over 50 field projects and were considered by NARI management as highly reliable. Unlike one-time interviewers that could have been recruited for the survey, NARI interviewers have a long-term relationship with their employer and therefore are likely to be significantly more conscientious and accurate, as errors or cheating on their behalf would have inevitably affected NARI's decision to use them on future projects and thus would have a significant impact on these interviewers' income.

The majority of interviewers were women. In NARI's experience, this increases the response rate (as households have fewer security concerns about letting a female they do not know into their home, as opposed to unfamiliar males). Both male and female respondents are equally comfortable with having a female enumerator.

In the second half of November 2006, before the field phase of the survey began, I, together with NARI's management, conducted training sessions for all interviewers. The sessions included a detailed discussion of each question of the questionnaire, possible questions from the respondents, possible interviewers' mistakes to be avoided, a review of schedules, procedures for addressing the potential respondent and conducting the interview, as well as informed consent process. Each training session also included a test filling out of the survey instrument.

Interviews: the field phase

The field phase of the survey took place from November 25, 2006 to January 8, 2007. During this period the interviewers conducted 1,215 interviews, of which — after quality control procedures were implemented — 1,191 questionnaires were admitted as valid responses.

Questionnaires were administered to selected households at their homes. Interviewers received schedules of 10 to 30 selected dwellings per schedule. They then proceeded to pay visits to the selected addresses. If an adult member of the household was present at the time of the visit, the interviewer introduced herself, presented an Interviewer's ID Card issued by NARI, explained the purpose of her visit, and inquired whether the respondent would potentially be interested in participation. If the answer was affirmative, the interviewer then read the informed consent statement (including a brief description of the research), emphasized its importance and voluntary nature, offered the potential respondent a small gift for his/her participation (a bar of high-quality chocolate, specially procured for this purpose), and asked about his/her willingness to participate. If the answer was affirmative, the interviewers entered the premises and proceeded to the interview.

If the potential respondent was willing to participate but neither he/she nor other adult member of the household knowledgeable about the households' gardening practices were available at that particular moment, then a convenient time was agreed upon and the visit was repeated.

If the invitation to participate in the survey was met with a definite refusal, the interviewer thanked the non-respondent and withdrew. No further attempts to secure such households' participation were made.

If no adult members of the household were present at the time of a visit, the visit was repeated up to 2 more times.

All interviews were conducted from 4 pm to 9 pm on weekdays and from 11 am to 8 pm on weekends and holidays — during the time when working household members were most likely to be home and available for an interview.

Once a schedule was completed (including the non-responses), the interviewer turned it in (with filled questionnaires) to NARI, either in person or by courier service, for quality control and subsequent data entry.

All incoming questionnaires were visually controlled for completeness and accuracy by myself and NARI's supervisors. Given interviewers' previous experience, as well as appropriate training conducted before the survey, only 9 questionnaires (0.7% of submitted questionnaires) were rejected at this stage as incomplete or otherwise invalid.

Thirty percent of respondents from each schedule were randomly selected for quality control, which was carried out by phone (when phone number was available and noted on the schedule) or by paying another brief visit to household's dwelling. During this brief contact a NARI supervisor verified whether the interview indeed had taken place; the household's address; the interview time-length; the age of family members as well as a small sample from survey's questions to verify whether the respondent's answers to certain key questions coincided with what was recorded in the questionnaire. If at least one questionnaire thus controlled was found to have serious flaws, or at least two questionnaires had minor flaws, the schedule was flagged for additional control (including contact with additional respondents from the schedule, up to 100% of the respondents). If very serious flaws were found in 5% or more of the questionnaires from the schedule (i.e., 1 or 2 respondents, depending on schedule size), or serious flaws were found in 15% or more (1–5 respondents, depending on schedule size), the whole schedule was rejected as invalid.

Quality control was ongoing during the whole field phase of the survey, and for most schedules was completed within 2–3 business days after the schedule and the accompanying questionnaires were turned in, which allowed us to quickly monitor for quality problems.

Application of this rigorous quality control procedure resulted in rejection of 1 full schedule (15 respondents) from the city of Vladimir. It was discovered that while interviewer's visits did indeed take place, they lasted no more than 10 minutes each (for a roughly 45-minute survey), which meant that the interviewer inserted many answers on her own after the interview. The schedule was deemed invalid, and the interviewer was removed from any further participation in the survey.

No other serious violations of interviewing procedures were detected.

The survey of the major urban areas was completed by December 25, 2006. The interviewers from the city of Vladimir were then grouped into teams and sent on missions to smaller towns and rural districts. On average, two teams of interviewers (4 interviewers per team) plus a supervisor were dispatched each day. The supervisor provided transportation as well as controlled interviewers' activity and addressed any problems that may arise.

The field part of the survey was completed on January 8, 2007.

Addressing the non-response

To maximize the response rate, questionnaires were administered through personal interviews, by specially trained experienced interviewers. Each respondent was offered a small gift for her/his participation in the survey. The interviewers were compensated on the basis of the number of interviews conducted, and were motivated to pay repeat visits to households that were not available on the first or second attempt. A combination of these measures allowed us to attain the high response rate of slightly below 80%.

News from the field

Accustomed to conducting surveys predominantly on consumer preferences, political opinions, and household budgets, the interviewers found the topic of this survey refreshing. After the field phase started, a number of interviewers specifically requested to be assigned *several* schedules for this project, as they met with a favorable reception on the part of the respondents.

Interviewers reported the attitude of respondents to the survey as "very loyal" and "kindly disposed." In contrast to most of the surveys the interviewers had conducted before, the respondents were fairly enthusiastic about their participation in this one, showed interest in the topic, as well as appreciated the gifts offered them for their time and effort in answering the questions. According to the interviewers, some respondents were "outright excited" about the interview, endeavored to provide as best answers they could and even offered additional information that was not solicited in the survey. Interviewers explained such behavior by the great relevance of gardening and agricultural issues to many residents of the region, even the ones who do not tend their own garden.

Interviewers noticed that the attitude of urbanites to the survey was even more kindly than that of the rural residents. The latter are cautious of outsiders and "city folk," and treat with suspicion any request for information about the real size of their land holdings or the monetary value of the produce they sell. This attitude was so consistent that the interviewers remarked about it in all the rural districts where the survey was conducted.

This feedback is hardly surprising: even the all-Russia Census of Agriculture conducted earlier in 2006 had the same challenge to overcome. Many villagers were referring to the Census as "inventory" and were so concerned about a possible use of the data collected for taxation purposes that even President Putin felt a need to make a statement to the effect that Census was not related to personal taxation. However, villagers may know better: they still

remember the "censuses" of the Stalin era, which resulted in the heavy taxation of personal garden-plots. Besides, the long centuries of oppression suffered by the Russian peasantry have not been erased from the people's collective memory.

Foreseeing this attitude, we endeavored to keep the number of "sticky" questions to a minimum, as well as conducted additional training sessions with the interviewers who were later to collect data in the rural areas. Interviewers were also provided with additional gifts (photograph albums, appreciated by rural people) to use when they sensed that the level of trust and openness on the part of the respondent was not sufficiently high. Finally, the psychological factor of having a "girl" from the oblast capital come all the way through the snow, during the holiday season, to talk *specifically* to them seemed to appease the concerns of most of the villagers. According to interviewers' reports, they feel that for the most part they succeeded in establishing a rapport with the villagers, which was necessary for obtaining undistorted data.

According to Andrei Kuzmin, director of NARI (personal communication):

> This kind of wariness is part of rural custom and the prevailing attitude among the villagers. It's extremely difficult to overcome this mindset. The tendency to hide the real state of affairs in one's household is characteristic for residents of almost all villages in our region. I would even dare say it is characteristic of the rural population of the whole country. As for respondents from towns and the oblast capital, their attitude to this survey can be seen as very well-disposed and constructive. We are usually faced with the opposite situation: for the most part it is much harder to interview and obtain a high response rate from urbanites than respondents living in rural areas. Nevertheless, we handled it as best we could and I do not believe the cautiousness of rural residents had a negative effect on the validity of results, especially seeing that we managed to achieve only a slightly lower response rate in villages than in the cities.

No emergencies or serious incidents took place during the field work in either the urban centers or in the villages, and the survey was completed on time.

Data entry

After each schedule passed through the quality control procedure, the questionnaires were handed over to data entry specialists. A total of 10 people were employed on the task, all employees of NARI with experience in this specific function. Data entry specialists had access to questionnaires and not the schedules, to protect respondents' identity.

Before data entry began, an SPSS template was developed, training was administered to the data entry specialists, and they received written instructions with entry procedures for each field.

All the data from the questionnaires was entered by January 15, 2007.

Ten percent of the questionnaires were randomly selected for quality control, and the electronic data were compared against the original questionnaires. If more than one data entry error was detected in a questionnaire, an additional 10% of this data entry specialist's work was checked and if multiple mistakes were detected, the entire range of this specialist's entries was deleted and re-entered by another staff member. In reality, however, this did *not* happen with this project.

Completion of data entry marked the end of NARI's involvement with this project. All subsequent data quality checks and analysis were performed by myself only.

Once all data were entered and quality checked as described above, *all* fields in the SPSS data set were checked for invalid or missing entries. These entries were detected and corrected. For the most part the invalid entries were easily identifiable and usually involved a digit key pressed twice, rather than once, by the data entry specialist (e.g., "11" instead of intended "1," in a field that could only have values of "1" thru "4"). In case of missing entries, the original hard copy of the questionnaire was checked; and in a few instances

where the data were missing in the questionnaire as well, a corresponding "no response" code was recorded in the field.

In the next step, the consistency of data was checked by using automated *logical* procedures and logic formulas. This involved comparison of values of a large number of linked characteristics. For example, the occupation of an 11-year-old boy could not be "retired" or "worker"; nor could that of a 69-old woman be "school pupil." A household reporting *not* having a garden could not have answers to questions relevant only to gardeners. A household which reported not planting any potatoes could not at the same time report an income from selling part of their potato harvest, etc. Application of these logical procedures allowed me to correct a number of data entry mistakes and even detect and correct a number of recording errors in the questionnaires themselves. This guaranteed a very high logic consistency of the final data set.

Data analysis

I used SPSS v. 11 statistical analysis software for analyzing survey results. The functions used the most often include frequency tables for one or more variables, correlations ("cross-tabulations"), averages, means, and ranges, as well as variables derived from the original survey variables (e.g., counting the number of members of the household or calculating a score by applying a formula to individual items constituting a scale).

Demographics of responding households

A total of 1,191 households (out of the sample of 1,500) responded to the survey, which represents a response rate of 79.4%. The response rate was lower in the rural areas — 70.8%, compared to 82.1% for the cities.

Thirty-seven percent (36.9%) of the respondents live in individual 1-story houses, and the balance of 63.1% — in apartments (typically in 5-story or 9-story apartment blocks). This is close to the official statistics on the number of dwellings of both types (32% and 68% respectively).

The size of the households who responded to the survey ranged from 1 to 8 members, with an average of 2.75 members per household. According to the 2002 Census, the average household size in the Vladimir region was 2.53. As we can see from Figure 22, households consisting of just one individual seem to be under-represented, while households of all other sizes are slightly over-represented. There are several plausible explanations for this discrepancy: a) one-individual households are easier to miss during the interviewers' visits (as opposed to larger households where at least one member may be home at the time of the visit), b) from general observation, households consisting of just one individual, especially a young adult or a single male, are less likely to engage in food growing than larger households and thus may have been less inclined to accept participation in the survey, seeing the subject as uninteresting to them, and c) some groups of individuals that were classified as two separate households in the 2002 Census (e.g., a young single adult living in the same dwelling with his parents), may have been classified as one household in this survey. So, one-individual households may have formed a larger portion of the non-responding

households. However, since, for the most part, the household sizes observed in the survey seem to be fairly close to the parameters of the population, these differences were ignored in the analysis of the results.

The age of household members in the responding sample varied from 0 to 94 full years, with an average age of 44.5 years. The average age of the population of the Vladimir oblast as per the 2002 Census was 40.1 years. Once again the statistics of our sample seem to be fairly close to the population's parameters, but also confirm the supposition that it was the households consisting of one young adult that were underrepresented in our sample, for the reasons mentioned above.

Fifty-five percent (54.6%) of the members of the responding households were female, closely matching the results of the 2002 Census (54.7%).

Within households, the selection of the responding individual was not random (random selection at this level was not required by the sampling design, since the unit of observation

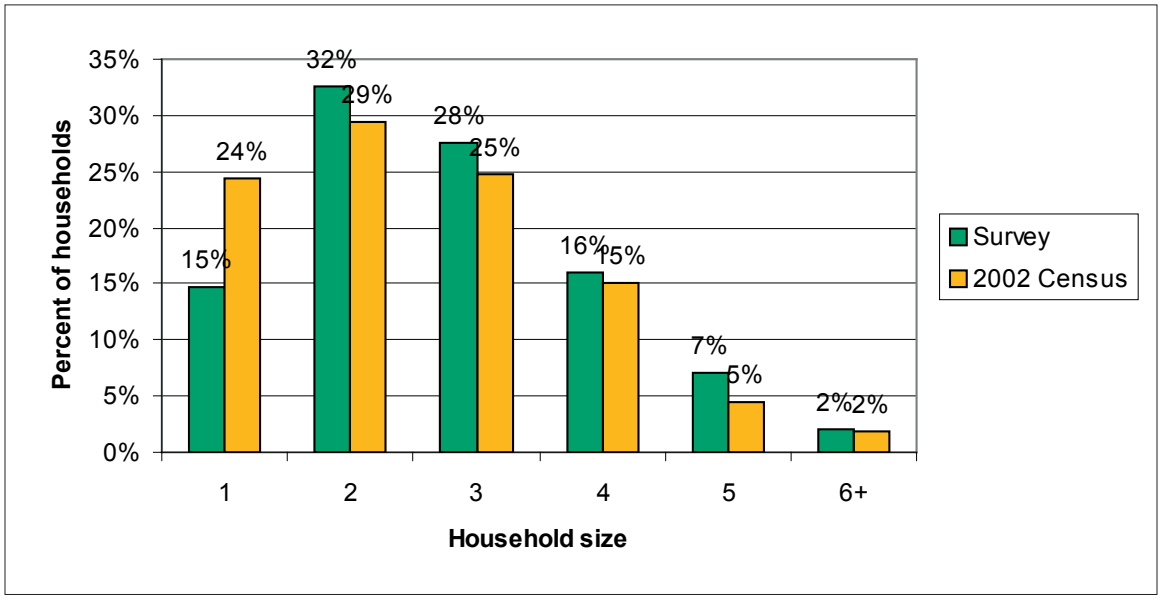


Figure 22. The distribution of the households according to size: participants of this survey and the 2002 Census.

is a household, not an individual). Preference was given to the household member with best knowledge of the household's gardening matters, or to another "responsible adult" with good knowledge of the household's garden-plot. Sixty-nine percent (69%) of interviewees were female. Interviewees' ages ranged from 16 to 89 years, with the average at 50 years.

During the preparation of the survey instrument, drawing from NARI's experience in previous studies, it was decided not to ask the respondents to specify their household's monetary income. Between 25% and 50% of Russia's GDP is produced in the "shadow" economy (Sedik, Sotnikov, and Wiesmann 2003). Therefore, a significant proportion of income goes undeclared to fiscal authorities, so households are generally distrustful of anybody seeking this information, and even if they provide an answer, it is usually an understatement. Instead, the households were asked to describe their income level in broad terms, as presented in Table 18. The first two categories would indicate poverty level and below. According to the official statistics (Vladimirstat 2007), 29.6% of the region's population live *below* the poverty level.

Table 18. Respondents' description of their income level.

	Households	**Percent**
Our income is barely sufficient to buy food and very basic non-food items	166	14%
Our income is sufficient to buy food and basic non-food items; yet we need to save for over 1 month to buy clothing items	396	33%
Our income is sufficient to buy food, basic non-food items and clothing; yet we need to save for over 1 month to buy long-lasting goods such as household appliances, furniture, etc.	457	38%
Our income is sufficient to buy even long-lasting goods such as household appliances, furniture, etc. without the need to save	118	10%
Do not know	54	5%
Total	1,191	100%

Participation in gardening

According to the official statistics for 2005 (Vladimirstat 2006b), 85.8% of all families in the Vladimir region had a garden-plot. Very similar results were obtained in this survey: 84.3 garden-plots per 100 households. Note that the official statistics, while referring to the number of *households* with a garden-plot, actually counts the *plots* themselves, and a household with two plots would be counted twice, with three plots — thrice, etc. The vast majority of households (93% in this survey) have only one garden-plot. Therefore, the number of plots serves as a good approximation of the number of households involved in gardening. This survey, however, allowed us to separate the two measures and to obtain a better measurement of the number of *households* involved in gardening.

Seventy-eight percent (78.1%) of households responding to this survey had a garden-plot (1 or more) in 2006, while 21.9% of households did not have one. The gardening participation rate was even higher in rural areas: 91.4%, compared to 74.5% for urbanites.

When asked about the reasons for not having a garden-plot, the "non-gardeners" provided the answers summarized in Table 19.

Table 19. Reasons given by non-gardeners for not having a garden.

	Households	**Percent of non-gardeners**	**Percent of all households**
Cannot do it due to health constraints	76	29%	6%
Have no interest in it	75	29%	6%
Have no time to do it	71	27%	6%
Cannot afford to establish and maintain it	40	15%	3%
Do not need it	36	14%	3%
Cannot obtain land for it	27	10%	2%
Other	4	2%	0%
Do not know	10	4%	1%

Note: of those who answered "Other," the following reasons were given: "have no transportation [to get to the plot]," "[it is] not efficient," "[family circumstances] — divorce," "have relatives who do it."

The reasons for not participating in gardening can be grouped into two categories: *subjective* (lack of participation reflecting household's true preferences — "have no interest," "no time," "do not need it") and *objective* (i.e., causes beyond the household's control, at least in the short term — poor health, lack of money, inability to obtain land). It is to be noted that 50% of non-gardening households gave only subjective reasons, while another 39% gave only objective reasons. The latter figure suggests that participation in gardening could be even higher if help was provided to this category of non-gardeners to overcome the obstacles in their way.

The extremely high gardening participation rates cited above paint only part of the picture of the true significance of gardens, since even those who do *not* have a garden-plot still benefit from the garden-plots of others, for example by purchasing or receiving for free (from family and friends) produce grown on these garden-plots, or by using other households' plots. Tables 20, 21 and 22 present information on the number of non-gardening households using the gardens (or harvests) of others.

As we can see from Tables 20, 21 and 22, a large number of households without a garden of their own benefit from the gardens of others: 58% procure foodstuffs, 43% help work somebody else's garden, and 50% spend time thereon. In fact, 76% of non-gardening households use somebody else's garden-plot in at least one of these ways. These households represent 16.7% of all households.

Thus, 78.1% of households have a garden of their own. An additional 16.7% of households use somebody else's gardens or garden output. *Therefore, a total of 94.8% of households of the Vladimir region either have their own garden or contribute to/benefit in some way from the gardens of others.* This figure attests to the remarkable degree of connectedness to the local soil and local food still maintained by families of this highly urbanized and industrialized region.

Table 20. Procurement of foodstuffs from garden-plots of other households in 2006.

	All households		Gardeners		Non-gardeners	
	Percent	**Cumulative percent**	**Percent**	**Cumulative percent**	**Percent**	**Cumulative percent**
Received for free	27%	27%	28%	28%	23%	23%
Purchased	21%	48%	21%	49%	23%	46%
Received for free AND purchased	12%	60%	12%	61%	12%	58%
Did NOT receive	38%	99%	38%	98%	41%	99%
Do not know	1%	100%	2%	100%	1%	100%
Total	100%		100%		100%	

Table 21. Households without a garden of their own helping to tend other households' garden-plots in 2006.

	Percent	**Cumulative percent**
Occasionally (2–3 times per year max)	24%	24%
Regularly (approx. once per month)	19%	43%
Never	56%	99%
Do not know	1%	100%
Total	100%	

Note: only households without a garden of their own were asked this question. Those who helped tend somebody else's garden "frequently", i.e., more that once per month, were considered "gardeners", even though they may not be the owners of the garden they help tend.

Table 22. Households without a garden of their own spending time (visiting, on vacation, etc.) on other household's garden-plot in 2006.

	Percent	**Cumulative percent**
Occasionally (2–3 times per year max)	30%	30%
Regularly (approx. once per month)	20%	50%
Never	49%	99%
Do not know	1%	100%
Total	100%	

Note: only households without a garden of their own were asked this question. Those who spent time at somebody else's garden "frequently", i.e., more that once per month, were considered "gardeners", even though they may not be the owners of the plot they spend time at.

A number of studies (notably Clarke et al. 1999) suggest that having a "family memory" of rural life may be an important factor in an urban household's decision to start and maintain a garden. In other words, households that include members who have lived for extended periods of time in rural areas may be more likely to tend a garden. Our survey shows that this is indeed the case: urban households that have a member who has lived in a rural area for at least 5 years are more likely to have a garden. Of the households that had such a member, 19% did not tend a garden; while for the households that do *not* have such a family experience of rural life, the share of non-gardeners was 30%. This difference is statistically significant at the .999 level of confidence (Pearson's Chi-Square = 11.583 with one degree of freedom).

A number of researchers observed that *income level* affects the rate of participation in gardening. Clarke et al. (1999) found that urban households with the lowest income were *less* likely to have a garden, due to the lack of the financial resources that would have to be devoted to it. My study shows that the lowest-income households do indeed have a lower gardening participation rate (see Figure 23). This difference is statistically significant at the .999 level of confidence (Phi = .135). For a description of how income levels were measured, see Table 18 above.

Economic dimension

Land

According to the statistics published by Vladimirstat (2006c), households used only 16.2% (142,900 ha) of the agricultural land used for production in the region in 2005, while

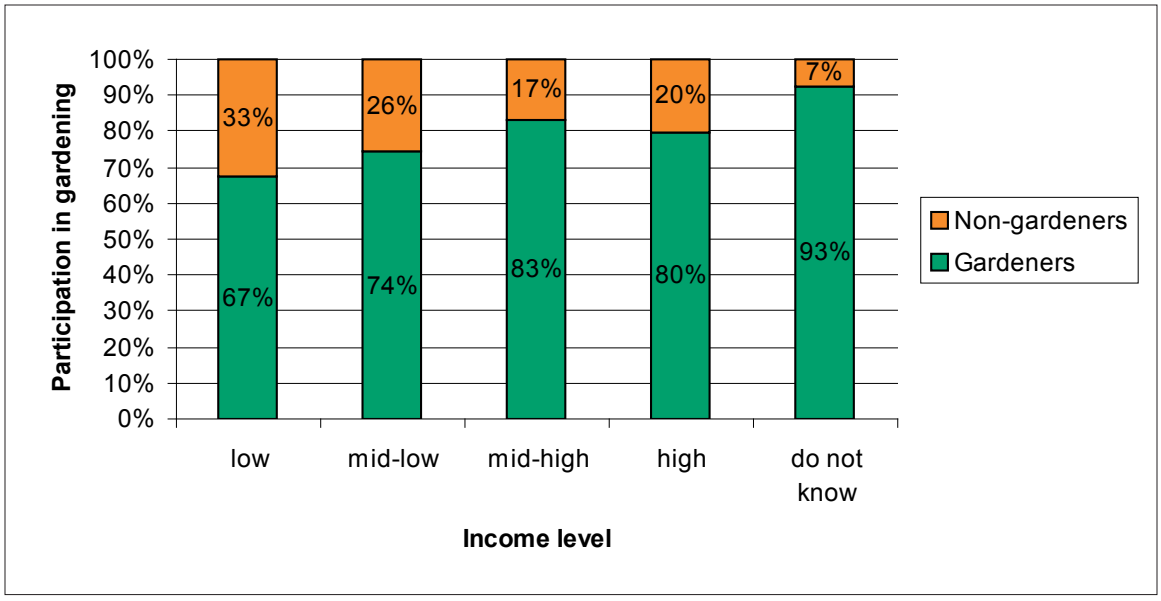


Figure 23. Gardening participation rates per income group.

producing over 55% of the region's agricultural output (by value). In other words, to produce 1 ruble worth of product, households require only 16% of the land needed by agricultural enterprises or family farmers. On average, gardening families have 0.16 ha each (Vladimirstat 2006b).

Our survey confirms that the landholdings of gardening families are indeed very small compared to industrial farms. The average size of holdings is 0.12 ha per household, and it is slightly higher for rural residents (0.17 ha compared to 0.10 ha for urbanites). The distribution of landholding sizes, as well as of the amount of land put to agricultural uses, is shown in Figure 24.

As we can see from Figure 24, landholdings of 77% of the gardening households are no greater than 0.15 ha in size (a rectangle 30 x 60 yards), and 75% of gardening households put 0.1 ha or less to agricultural use. The average size of the area used for agriculture is 0.09 ha per household.

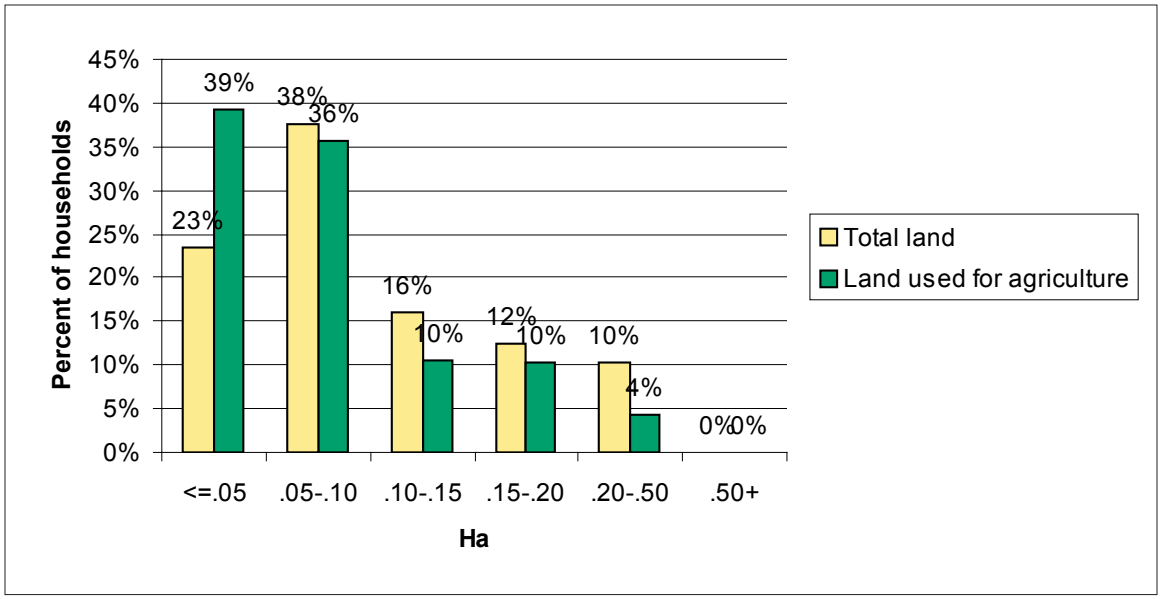


Figure 24. Distribution of landholding sizes and amounts of land put to agricultural uses (interval boundaries are included in the lower interval).

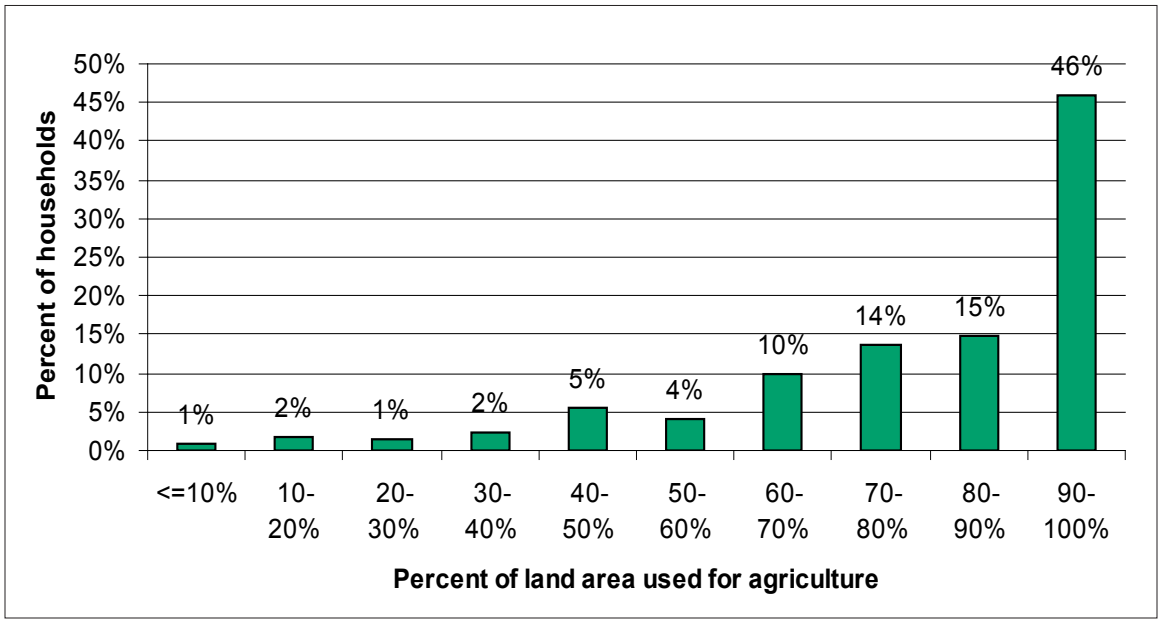


Figure 25. Proportion of households' land used for agriculture in 2006 (interval boundaries included in the lower interval).

The high level of household productivity on such small plots of ground is achieved, among other things, by the thorough use of the available land resource. Almost half of all gardening households put over 90% of their plots' area to agricultural uses (Figure 25).

As we can see from Figure 25, for some gardeners agriculture represents only a marginal land use. However, households that put their land to predominantly non-agricultural uses (such as recreational or ornamental, including lawns) are relatively few, with 89% of gardening households devoting over half of their land to agriculture.

As mentioned in the *Participation in gardening* section above, the majority of gardening households (93%) have only one plot; 6% of households have two, and 1% — three plots. This results in an average of 1.08 plots per gardening household. None of the households used more than three plots.

We have previously observed that the rate of participation in gardening varies with income level and that the lowest-income households have a lower rate of participation in gardening. Likewise, the size of landholdings per household varies with income, and as household income increases, so does the average land area of their gardens. The average size of landholdings of the wealthiest group is more than twice that of the lowest-income group (Figure 26). That said, it should be remembered that even the wealthiest households have, on average, less than half an acre of land each — so, while differences in the size of plots do exist, the size of plots still remains very small.

Establishing and maintaining a garden is a long-term venture. The majority of households had had their garden for over 15 years at the time of the interview (late in 2006), which means that their plot had been acquired *before* the difficult period of neo-liberal market reforms of the early 1990s (Table 23), and therefore could *not* have served as the household's response to the economic hardships and uncertainty of this period (as is claimed by a

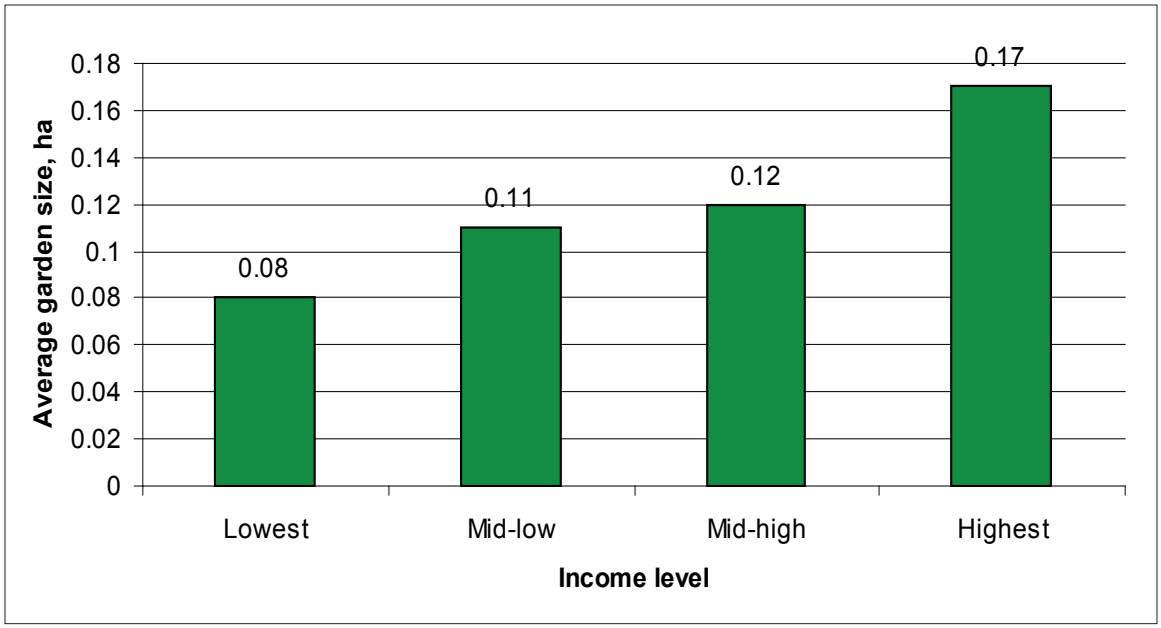


Figure 26. The average size of landholdings for households in different income groups.

number of authors, e.g., Seeth et al. 1998). This is consistent with the national-level statistics from the 2006 Census of Agriculture (see Chapter 1), which also shows that the majority of gardens had been acquired long before they could be viewed as a "survival strategy."

That gardening is a long-term undertaking, rather than a short-term response to poverty and food insecurity, can also be seen from the amount of resources gardeners invest in the setting up of their plot (see the section on *Capital* below). It is therefore not surprising that gardens become an important part of family's inter-generational equity: 28% of current gardeners have *inherited* the plots they use today (Table 24).

Once a garden is established, gardening becomes a very stable activity. As we can see from Table 25, for 93% of households the area under cultivation remained the same over the previous 5 years, and 96% of households expect that the cultivated area will remain constant for the following 5 years. Also, 88% of gardeners are satisfied with the size of their plot, 7% would like to have more land, and 3% find they have too much land as it is.

Table 23. Number of years households have been using their garden-plots, as of December 2006, percent of gardening households.

Time	**Percent**	**Cumulative Percent**
> 15 yrs	52%	52%
10–15 yrs	20%	72%
5–9 yrs	15%	88%
< 5 yrs	8%	95%
Do not know	5%	100%
Total	100%	

Table 24. Mode of acquisition of garden-plots, percent of gardening households.

Mode of acquisition	**Percent of households**
Inherited it	28%
Obtained a plot from an enterprise or from a local administration	26%
Bought unimproved land	19%
We use a plot belonging to someone else	13%
Bought an existing garden	13%
Other	1%
Total	100%

Table 25. Changes in area under cultivation over the previous 5 years, and the outlook for the following 5 years, percent of households.

	Over the *previous* 5 years	**Prospect for the *following* 5 years**
Remained or will remain constant	93%	96%
Increased or will increase	2%	2%
Decreased or will decrease	4%	2%
Total	100%	100%

Gardeners use a variety of legal forms available for their garden (Figure 27). Note that in addition to the two forms most commonly available for urbanites: "allotment" (*ogorod*) or "garden" (*sad*) on the one hand, and "dacha" on the other — urbanites also own rural plots in villages ("subsidiary plots" — *lichnoe podsobnoe khoziaistvo*). Most of the "Other" responses referred to plots adjacent to private homes in urban areas.

The majority of plots are owned (*de jure* or *de facto*) by the gardening families who tend them. Sixty-eight percent (68%) of households have their plots in private property, and another 12% in "personal inheritable ownership" (the Soviet-era equivalent to private property). Ten percent (10%) of households use garden-plots belonging to others (e.g.,

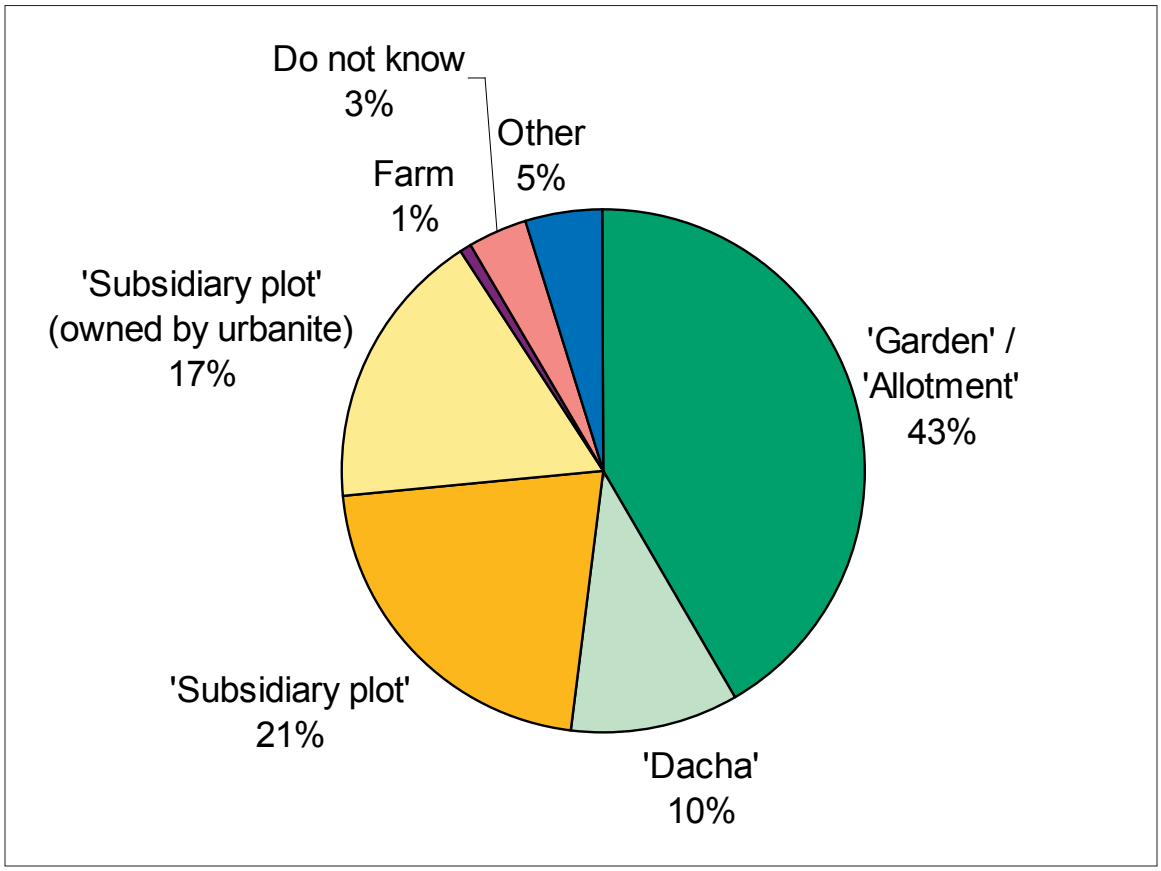


Figure 27. Legal forms of garden-plots, percent of plots.

family or friends), while 7% have not privatized their plots and these plots continue to be state's or municipal property. Leasing a plot for a garden is very uncommon (1% of households). It should be noted that Figure 28 presents the *households'* view of the ownership status of their plot. Due to drastic changes in legislation over the past two decades, many ownership documents that were legitimate in the early 1990s now fall short of today's legal requirements. Therefore, the number of households that have all their property title paperwork in order may be lower than *de facto* ownership.

Thirty-three percent (33%) of gardeners have their garden-plot adjacent to their home, and an additional 22% — within walking distance (2 km or less in most cases). The

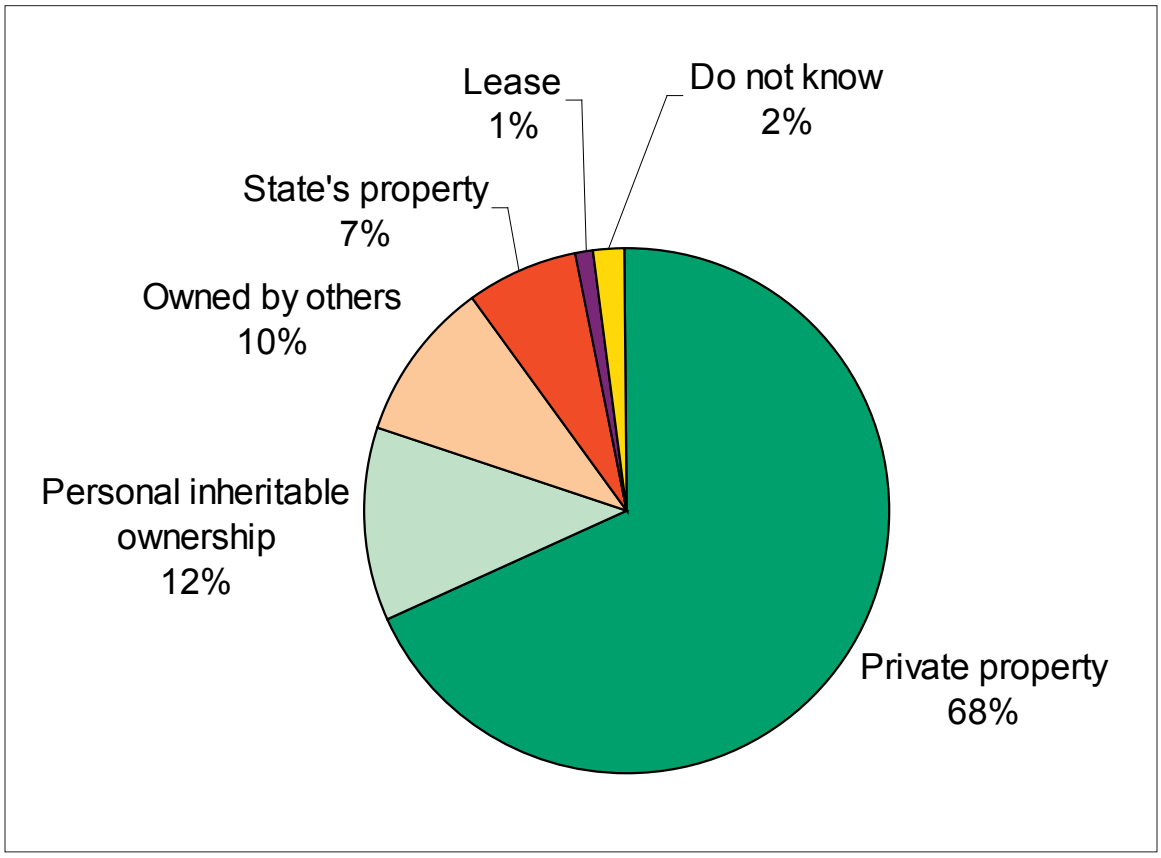


Figure 28. Form of plot ownership, percent of households.

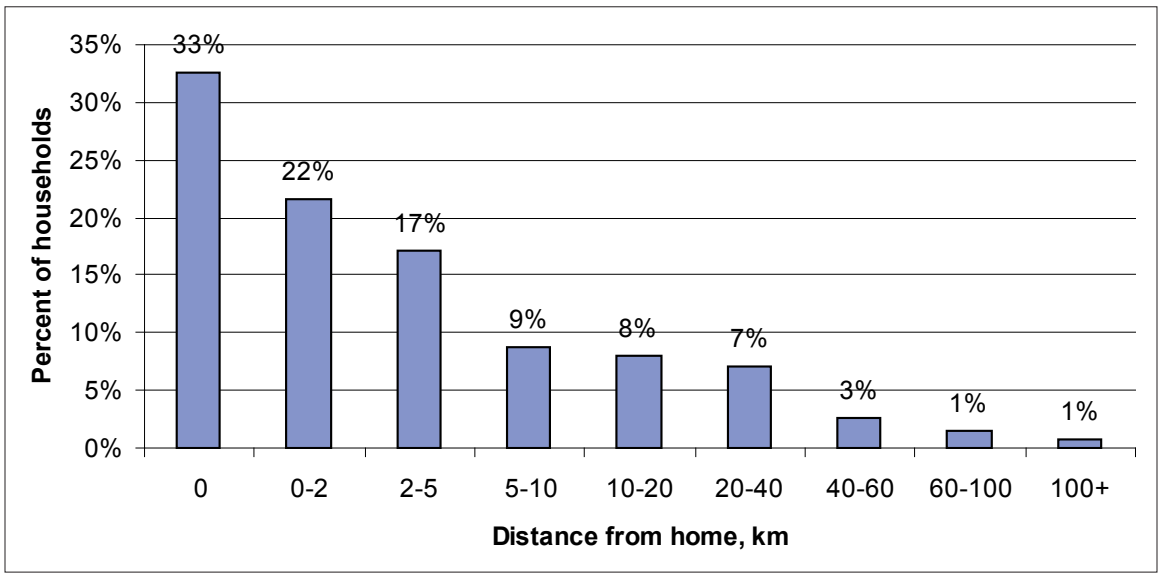


Figure 29. Distance to the garden-plot, percent of households (interval boundaries included with the lower interval).

remaining 46% require some sort of transportation to get to the plots, with the average distance to the plot being 19 km. As can be seen from Figure 29, 95% of households have their plots within 40 km of their primary residence.

Labor

Just as in the era of the peasant economy, today's gardeners rely on family labor in cultivating their plots. According to this survey, 95% of gardeners do not use any hired help. Only 1% of gardeners use hired labor "regularly," and 4% — "from time to time."

Of the 45 households that use hired labor, 18 households (40%) could not provide an estimate of the proportion of labor hired. The remaining 27 households' responses ranged from 3% to 60%, with an average of 17%. Thus, the use and importance of hired labor in household gardening is very small, and families on the whole rely on their own labor.

During the warm season the vast majority of gardeners (94%) visit their garden-plots at least once a week (Table 26). For households that have several plots, one plot usually serves as its "primary" plot, while the others are visited less frequently. As can be seen from Table 26, the "primary" plots are visited predominantly on a daily or weekly basis; "secondary" plots are visited weekly or monthly; and two thirds of "tertiary" plots are attended to on a monthly basis.

So, as we can see, for the majority of gardening households their garden-plots become the focus of their attention and activity on at least a weekly basis for the duration of the growing season. It should be expected that during their frequent visits and prolonged stays on the plot, gardeners spend a significant amount of time engaged in food-growing activities. This is indeed the case.

Of the 930 gardening households, 899 (96.7%) provided estimates of the amount of time their members spend on plot cultivation. An average (mean) of 2.4 members per household participate in garden-plot cultivation, and each member spends an average of 16.9 hours per week at it during the growing season, for an average of 40.7 hours per week per household. This is equivalent to an average of 697 hrs per growing season per household; or 290 hrs per growing season per gardener (assuming a 120-day growing season).

Table 26. Visitation of garden-plots by gardening households during the warm season of 2006.

	1st plot "PRIMARY"		**2nd plot**		**3rd plot**	
	Households	**Percent**	**Hhds**	**Percent**	**Hhds**	**Percent**
Daily or permanently live on the plot	434	47%	4	6%	0	0%
Weekly (1–2 times per week or more)	436	47%	34	52%	2	25%
Monthly (1–2 times per month)	46	5%	19	29%	5	63%
Less than once per month	14	2%	9	14%	1	13%
Total	930	100%	66	100%	8	100%

It should be noted that the amount of labor varies through the growing season. The amount of work contributed varies from one family member to the next. The length of the growing season itself varies from one household to the other (for example, some use greenhouses to extend it). Finally, households do not keep any written record of the hours spent on cultivation. For these reasons, the above statistics should be viewed as a rough estimate, and any greater precision would require additional study. However, it is clear that during the growing season the vast majority of gardening households attend to their plots at least on a weekly basis and devote a significant amount of time to cultivation and/or animal husbandry.

It should also be noted that the statistics above refer only to plot cultivation per se. As we have seen in the section on "Land" above, 46% of gardeners live far enough from their plots to require some kind of transportation to get to them, which also means time spent on travel. Nor do the above figures include the building or repair of houses and other structures and infrastructure on the plot, or the processing of the harvest and its preservation for the winter, or recreation. If these activities were factored in, the resulting amount of time related to gardening in the broad sense would be substantially higher.

Finally, the term "labor" should be used with caution even when referring to "working" the garden. As we discussed in Chapter 1, the cultivation of a garden is substantially different from work for hire, and has a significantly broader meaning than just the production of foodstuffs. For a more detailed discussion of gardening's broader significance, please see the section on the *Sociocultural dimension* below.

Capital: tools and improvements

Today, after a decade of neglect of national agriculture, the Russian government is once again proclaiming its intent to reverse the decline of industrial farming. In 2006, *industrial* agriculture was included in the list of top national economic development priorities (the so-called *National Projects*). The main foci of this program include subsidies and attracting investment to the agricultural sector — both deemed essential for a strong agriculture.

At the same time it is conveniently overlooked that side by side with the "official" agriculture (the reanimation of which requires multi-billion-dollar injections) there exist tens of millions of household gardens, which — without any government support (actually, *despite* government policies) or the need for vast ministerial bureaucracies or external investment — have been consistently producing the greater part of the nation's agricultural output.

Part of the reason why household agriculture has been so successful lies in its modest capital needs: it requires no heavy machinery, no extensive infrastructure, no sophisticated inputs nor expensive processing of outputs. Table 27 shows that 73% of gardening households of the Vladimir region do not use *any* machinery in cultivation of their garden-plot, and continue to rely exclusively on manual labor.

Table 27. Use of machinery by gardening households (respondents could give several answers).

	Households	**Percent**
No machines used — hand tools only	678	73%
Hand-held roto-tiller	125	13%
Electric water pump	113	12%
Tractor	80	9%
Grass mower	43	5%
Mini-tractor	37	4%
Hand-driven water pump	33	4%
Grass trimmer	19	2%
Other	15	2%
Do not know	7	1%

Note that even the machinery *used* on a garden-plot is not necessarily owned by the gardening household. The modest size of the plot can rarely justify private ownership or frequent use of anything larger than a hand-held roto-tiller or grass trimmer. The use of larger machinery such as tractors is usually outsourced: in rural areas, for example, it is not uncommon to invite a local tractor owner to come and plough up a potato patch prior to sowing.

At the same time, with their own resources gardeners have been able to put in improvements and create infrastructure on their plots (Table 28).

Table 28. Improvements made on the garden-plots.

Improvements	**Households**	**Percent of households**
Tool shed	629	68%
Electricity	578	62%
Fence	535	58%
Greenhouse or cold-frame	522	56%
Winter house (habitable year-round; with a heating system or stove)	436	47%
Cellar (on the plot itself or in the proximity of the primary residence in the city)	374	40%
Summer house (without heating)	361	39%
Dug well	314	34%
Natural gas (pipeline)	256	28%
Bath-house	216	23%
Garage	183	20%
Wild bird houses	171	18%
Turf grass	146	16%
Animal shed	117	13%
Drilled well	80	9%
Pond	57	6%
Hammock	57	6%
Swimming pool	12	1%
None of the above	34	4%
Do not know	27	3%

Expenses

As was mentioned in the section on *Gardening participation* above, households with the lowest income have a lower rate of participation in gardening than wealthier households. This may be largely due to the expenses required for starting and maintaining a garden. This is corroborated by the fact that 15% of non-gardeners said they had no financial resources to tend a garden.

The cost of setting up and maintaining a garden varies greatly depending on the size and location of the plot, intended use, and many other factors. A small plot for a potato patch can often be obtained for a small fee from a local administration (if one is patient and determined enough to go through all the bureaucratic procedures involved). Alternatively, some gardeners just plant on an unused plot of land, or — in villages — by annexing part of the field to one's house, without any formal authorization.

However, even when land can be obtained inexpensively or for free, making necessary improvements (be it just a simple shed to keep gardening tools) requires expenditures.

In 2006, the garden-related expenditures of gardening households in the Vladimir region ranged from 31 to 280,000 rubles over the 12-month period (approx. US$1 to $10,000), with an average of 7,223 rubles per household (approx. US$270), based on the responses of 667 households (72% of all gardening households surveyed) who could provide an estimate of expenses.

Forty-four percent (44%) of gardening households could also estimate their expenses over the past *three* years. These ranged from 100 to 400,000 rubles, with an average of 15,186 rubles (approx. $550) over the three-year period.

These expenses, of course, are not limited to gardening per se (seed, fertilizer, etc.) and include improvements, construction of buildings and infrastructure. These figures should

be regarded as rough approximations only, since a) many households may not keep track of nor accurately record their gardening expenses, especially when these are relatively small, b) respondents may be reluctant to reveal the true scope of their expenditures, and c) the fairly large rate of "do not know" responses to this question.

For the majority of households, the ongoing improvement and maintenance of the garden does not constitute a major expense item in their family budget (Table 29). For 71% of gardening households, it represented not more than 10% of their expenses, and for 90% of households — not more than 20% of their expenses. Note that many of the remaining 9% of households for whom it *was* a major expense item (in excess of 20% of the family budget) were possibly in the process of making costly improvements or construction — something that is not required every year.

Table 29. Part of gardening households' budgets devoted to the improvement and maintenance of the plot in 2006.

	Percent of households	**Cumulative Percent**
Quite unsubstantial (**less than 5%** of all expenses)	29%	29%
Small part (**5–10%** of expenses)	42%	71%
Large part (**11–20%** of expenses)	20%	90%
One of the major expense items (**21–30%** of expenses)	5%	95%
Major expense item (**31–50%** of expenses)	3%	98%
Largest expense item (**51%** and more of expenses)	1%	99%
Do not know	1%	100%
Total	100%	

Table 30 provides a breakdown of gardening costs. Even though more than half of all the money was spent on construction and repair of houses and other structures, only 36% of respondents had this kind of expenditure in 2006. Other prominent expense categories include fertilizer and animal feed, travel to the plot, infrastructure, and planting material.

Table 30. Itemized expenditures on the improvement and maintenance of the plot in 2006.

	Share of total expenditure of all households	Percent of households incurring this cost	Average expenditure (rubles) for all households	Average expenditure (rubles) for households incurring this cost
Construction and repair of structures (houses, bath-houses, sheds, etc.)	53%	36%	4,184	11,660
Fertilizers, animal feeds	11%	74%	852	1,150
Travel to the plot and back	11%	53%	852	1,601
Infrastructure (building of access roads, putting in electricity lines, digging wells, etc.)	6%	9%	503	5,699
Seeds, saplings, other planting materials	6%	85%	453	535
Taxes and fees	3%	65%	257	395
Purchase of animals and birds	3%	15%	236	1,571
Purchase of land or rent	3%	4%	204	4,777
Other expenses	2%	20%	193	946
Hired labor	2%	5%	146	2,760
Leasing mechanical equipment	1%	6%	43	699
Landscaping	0%	3%	39	1,476

Notes: 250 (27%) of the gardeners could not break down their costs. The above data reflect responses of the 680 households that did break down the cost. “Other expenses” included: insurance (13 respondents), water (13), electricity (7), natural gas (2), association fees (5), rat poison (1), plastic for greenhouses and tools (1), pump (1), payment for ploughing and other cultivation (1). One household specified that they were required to work a certain number of hours in the communal garden (as a payment for their participation in the gardening association).

It should be noted that some kinds of expenses (such as land purchase or creation or infrastructure) occur less frequently (only to 4% and 9% of households in 2006, respectively), but when they do, they can be very high compared to other expenses.

Table 31 shows that in the longer term (over a 3-year period) the same expense categories — fertilizer, animal feed, seeds; construction; travel — are the most prominent. It is interesting to note that 44% of respondents listed taxes and fees among their three most significant expenditures, while Table 30 suggests that on average, taxes and fees are far

less important than many other expenses. This may be explained by the fact that interaction with the government bureaucracy is *perceived* as a heavy burden even when the attached monetary expense is not very high. Indeed, 45% of gardeners see the government paperwork involved in obtaining and maintaining a garden-plot as a "major problem" or a "problem" (see more in the *Problems* section below); and 25% see government taxes and fees as too high (here again it may not be "too high" for the household's budget, but perceived as "too high" *for what one gets back* from the authorities).

Table 31. Households' ranking of the three most important expense categories over a 3-year period (percent of gardening households who assigned this rank, 1 being the highest).

Expense item	**Rank 1**	**Rank 2**	**Rank 3**
Fertilizer, feed, seeds	37%	22%	12%
Construction and repair of structures (houses, bathhouses, sheds, etc.)	22%	10%	6%
Travel to and from the plot	12%	16%	15%
Creating infrastructure (building of access roads, putting in electricity lines, digging wells, etc.)	3%	4%	2%
Taxes and fees	3%	17%	24%
Other	2%	2%	5%
Purchase of land or rent	1%	1%	1%
Leasing mechanical equipment	1%	2%	2%
Landscaping	0%	1%	1%
Hired labor	0%	1%	1%
Do not know	19%	24%	30%
Total	100%	100%	100%

Subsistence, sharing, and market

As was discussed in Chapter 1, part of the reason the economic, social, and cultural importance of household gardening is underappreciated by both scholars and the state is the very long history of valuing the production of agricultural *surplus* (extractable through taxes or trade) over the self-sufficiency of individual families.

Today, household production continues to be primarily subsistence oriented. This does not mean, however, that exchanges of produce are lacking. Just as in the era of the peasant economy, the surplus is being redistributed within the network of the extended family and friends, or sold. Table 32 shows that such redistribution is fairly common and 60% of all households obtain food from other households, either for free or for money.

Table 32. Number of households receiving foodstuffs from other households' garden-plots during 2006.

	Percent	**Cumulative Percent**
Received for free	27%	27%
Purchased	21%	48%
Received for free *and* purchased	12%	60%
Did NOT receive	38%	99%
Do not know	1%	100%
Total	100%	

Table 33. Use of gardening households' output in 2006.

	Households that use harvest this way	**Average share of harvest, for each gardening household which uses harvest this way**
Personal consumption	100%	83%
Share with friends or relatives	49%	25%
Sell	15%	28%
Other	2%	16%

Note: most "other" answers were "spoilage."

Table 33 details how the households use their harvest. As we can see, *all* household use at least part of their products for personal consumption, and the average share of harvest used for personal consumption is the highest at 83%.

Sharing with relatives or friends comes next: almost half of all gardening households use part of harvest for sharing, and the households that use their harvest this way redistribute, on average, a quarter of their output.

Only 15% of households sell part of their products. Those that do, sell, on average, 28% of their harvest.

Given that the growing season is so short, a substantial part of the harvest needs to be preserved for the winter. This explains the prominence of potatoes and other crops that can easily be stored till the new harvest. With the exception of salad greens, almost all crops can be preserved in one way or another. Table 34 shows a wide variety of techniques gardeners use to preserve their harvest.

As was mentioned above, 15% of gardeners sell part of their harvest. Let us examine this practice in a greater detail.

Only 9% of urban gardeners sell part of their output, compared to 35% of rural gardeners. Because of the much higher rate of participation in commercializing the products, rural sellers constitute 57% of all sellers.

Table 34. Harvest storage techniques used by gardening households (respondents could provide multiple answers).

	Percent of households
Make thermally-treated preserves (including jams, pickles, etc.)	87%
Put in the cellar	78%
Fermentation	71%
Refrigerate	56%
Freeze	51%
Dry or smoke	35%
Store in my house or apartment without special treatment	26%
Do not store - only eat during the season	2%
Other	1%
Do not know	3%

Table 35 shows the different products sellers are dealing in, and the income they derive from these sales. As previously mentioned, households are generally wary about disclosing their real income to strangers. For this reason, the figures reported by the households may be lower than the actual sales volume. To prevent this possible bias, the question about the volume of sales was asked in two different contexts in the course of the interview, and answers to both questions matched closely, suggesting that the obtained estimates are relatively precise for this sample size.

As we can see, due to the high value of meat, it comes first in terms of the overall value of marketed products, followed closely by potatoes. However, a significantly larger proportion of households sell potatoes and vegetables than animal products. Honey and other

Table 35. Commercialization of garden output by households that sell part of their products.

Products	**Product share in the total revenue of all sellers**	**Percent of sellers selling this product**	**Average income from the sale of this product, rubles, for sellers selling this product**
Red meat	22%	29%	7,630
Potatoes	20%	67%	3,035
Other vegetables	13%	46%	2,808
Honey and other bee products	11%	12%	9,376
Milk and milk products	11%	19%	6,173
Berries and fruit	8%	31%	2,543
Eggs	5%	36%	1,417
Flowers	4%	11%	3,580
Poultry	3%	18%	1,940
Greens	1%	9%	1,052
Preserves	1%	4%	1,800
Seedlings, seeds	0%	2%	1,167
Other	1%	1%	10,500

Note: 3.5% of sellers could not itemize their income. The data in this table are therefore based on the responses of the remaining 96.5% of sellers.

bee products offer the largest average income for the households that sell them. It should be noted that "value added," processed products (preserves) make only 1% (by value) of all sales, and only 4% of households deal in such value added products.

Table 36 shows what marketing channels sellers use for selling their products. As we can see, sellers rely on selling direct to customer (to maximize the profitability of the sales); only 16% of sellers use wholesale channels. While having customers come to pick up their produce is the most popular form of commercialization (49% of sellers), some sellers are prepared to travel to a market or even deliver products to their customers. Those who sell at a market, travel on average 17 km to an official farmers' market, or an average of 6 km to an unofficial farmers' market. (One seller traveled as much as 200 km one way, apparently taking his products to Moscow, where they can fetch a higher price).

Table 36. Marketing channels used by sellers.

	Percent of all sellers
Customers pick up from our home	49%
At an official farmers' market	20%
Roadside stand	19%
Sell wholesale	16%
At an "unofficial" farmers' market	13%
We deliver to our customers	13%
Other	1%
Do not know	5%

Product sales seem to be a dynamically growing practice. Over the previous 5 years, 48% of sellers have increased the volume of products they sell, and for only 11% of sellers the sales volume decreased (Table 37). Fifty-four percent (44%) of sellers plan to increase their sales volume over the next 5 years, and only 9% project that their volume of sales will decrease (Table 38).

Table 37. Changes in the sales volume over the previous 5 years, for the households that sell part of their harvest.

	Percent of households	Cumulative Percent
Increased dramatically (at least doubled)	4%	4%
Increased	44%	47%
Stayed the same	35%	82%
Decreased	11%	93%
Decreased dramatically (at least halved)	0%	93%
Do not know	7%	100%
Total	100%	

Table 38. Projected changes in the sales volume over the following 5 years, for the households that sell part of their harvest.

	Percent of households	Cumulative Percent
Increase dramatically (at least double)	1%	1%
Increase	33%	35%
Stay the same	33%	68%
Decrease	8%	76%
Decrease dramatically (at least halve)	1%	77%
Do not know	23%	100%
Total	100%	

Table 39. Product sales contributions to sellers' monetary income.

	Percent of households	Cumulative Percent
Negligible (less than 10%)	34%	34%
Substantial (11–39%)	36%	70%
Roughly half (40–60%)	15%	85%
Significantly more than half (61–79%)	7%	92%
Almost all (80% and more)	1%	93%
Do not know	7%	100%
Total	100%	

The income sellers derived from the sale of products in 2006 ranged from 200 (approx. US$8) to 100,000 rubles (approx. US$3,700), with an average of 10,723 rubles (US$400) per seller. This income makes an important contribution to the monetary income of households that sell part of the harvest. Thus, for 8% of selling households income from product sales forms the *primary* source of income, for 15% of households — roughly half of their income, and for 36% of households — a substantial part (Table 39).

Place in household's food economy

As we shall see in the section on the *Sociocultural dimension* of gardening below, garden-plots perform multiple functions, of which food production is but one. For this reason the monetary value of the garden's output can serve only as a poor approximation of the plots' real place in the households' economy.

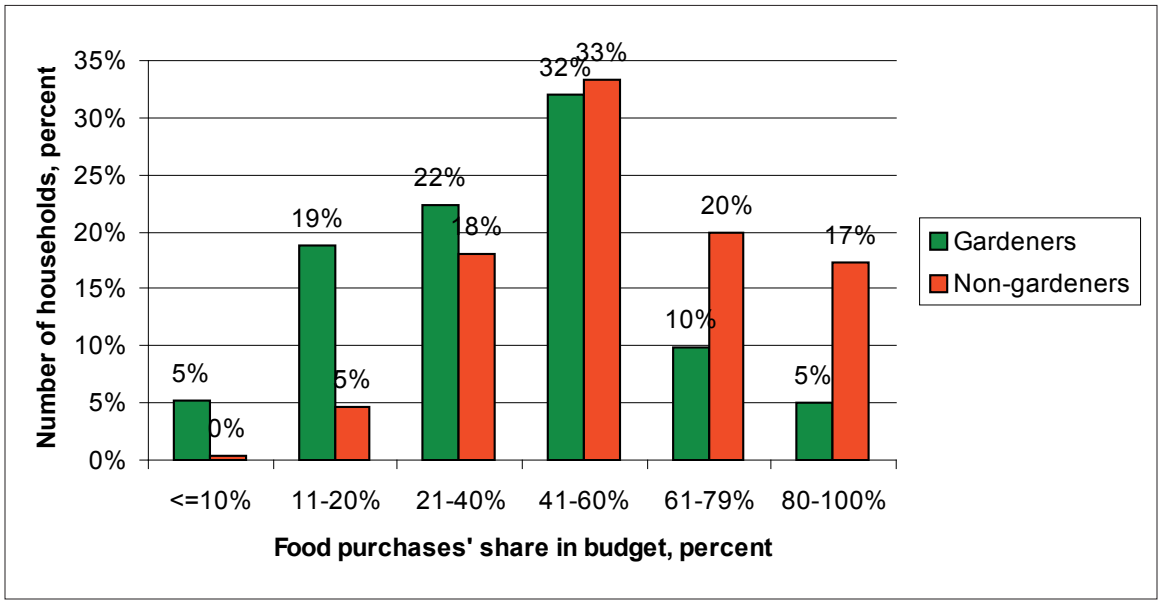


Figure 30. Shares of family budget devoted to food purchases by gardening and non-gardening households.

That said, food gardening does seem to offer monetary savings and lower dependence on food purchases, as can be seen from Figure 30.

Figure 30 shows that gardeners devote a smaller part of their household's budget to buying food, compared to non-gardeners. Thus, 46% of gardening families (and only 23% of non-gardening families) spend no more than 40% their budget on buying food. At the same time, 37% of non-gardening families (compared to only 15% of gardening families) devote over 60% of their budget to food purchases.

These differences may be explained, in part, by the self-provisioning effort on the part of gardeners. As Table 40 shows, 42% of gardeners produce a sizeable share of their food supply (11% to 40%), while another 30% of gardeners produce in excess of 40% of the food they consume. The share of the food produced by the households themselves is even greater in rural areas (Figure 31), e.g., 24% of rural households (compared only 10% of urbanites) satisfy over 60% of their food requirements from their plots.

It should be noted that these high levels of self-provisioning are far from being dictated by the need to grow one's own food "for survival." Figure 32 demonstrates that the highest-income group of households actually satisfy a greater share of their food requirements through self-provisioning than the lowest-income group!

Table 40. Share of self-provisioning in food products consumption, percent of households.

Share self-provisioned	**Percent of households**	**Cumulative Percent**
Not much (10% or less)	22%	22%
Significant share (11–40%)	42%	64%
Roughly half (41–60%)	16%	80%
More than half (61–90%)	8%	88%
Almost all (more than 90%)	6%	94%
Do not know	6%	100%
Total	100%	

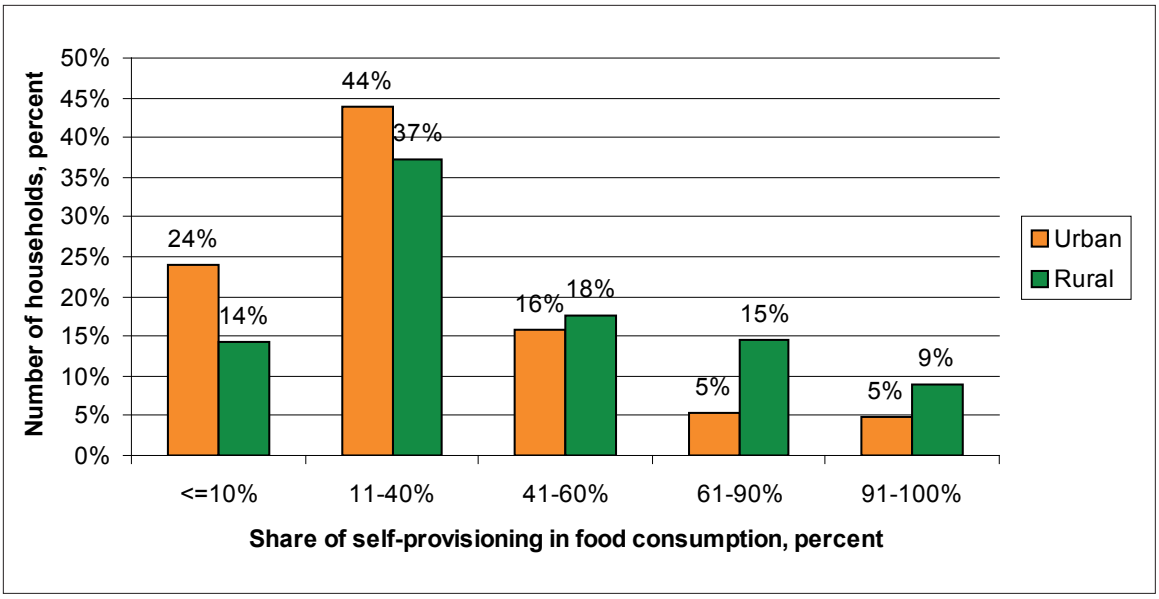


Figure 31. Share of self-provisioning in food consumption for urban and rural gardening households.

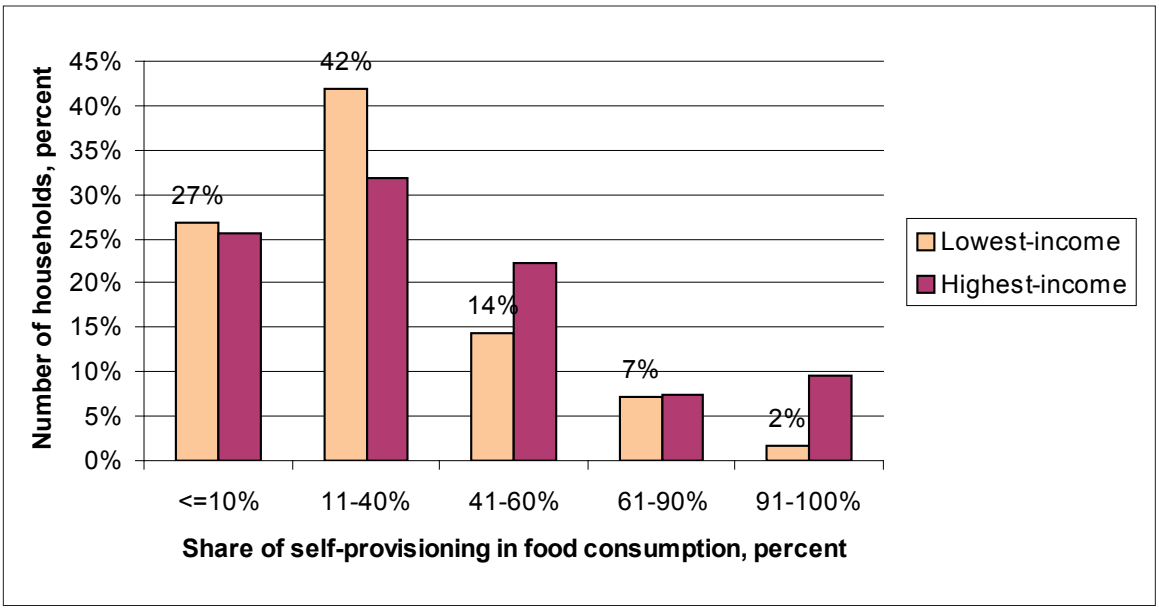


Figure 32. Share of self-provisioning in food consumption for lowest- and highest-income gardening households.

Clarke et al. (1999:44) observed that "there is no evidence that the domestic production of food has been chosen by households as a means of supplying themselves with the necessities of life as an alternative to acquiring those necessities by earning money and then purchasing those necessities." My survey yields a similar result: the average monetary expenses (per person) for buying food are *not* different for gardening households and the non-gardeners who produce no food of their own. This confirms my observations made in Chapter 1: food gardening does not arise out of the economic necessity, but is rather due to a number of economic and sociocultural factors.

In this section we have discussed some of the key economic characteristics of gardening in the Vladimir oblast. We shall now turn to the agricultural and then — to the sociocultural dimension of this practice.

Agricultural dimension

Crops: diversity, annuals and perennials

Gardeners grow a great diversity of crops, both annual and perennial. Table 41 presents detailed data on the variety of crops (and other products) produced on garden-plots.

As we can see from Table 41, the vast majority of gardening households combine annual (vegetables and greens) and perennial crops (trees and shrubs). Only about 2% of households limit their gardening activity to a single agricultural use (such as exclusively vegetable growing). The remaining 98% combine different agricultural uses. On average, each gardening household grows 13 different vegetable crops (including greens), and 7 different fruit, berry, and nut crops *on the same plot*. This confirms our observation made

Table 41. Number of gardening households producing certain crops and other products during the 2006 agricultural season.

	Households	Percent of gardeners
Vegetables (incl. potatoes)		
Carrots	876	94%
Onions	846	91%
Cucumbers	830	89%
Garlic	824	89%
Beets	803	86%
Potatoes	800	86%
Tomatoes	675	73%
Squash	666	72%
Radishes	649	70%
Horseradish	492	53%
Peas	447	48%
Pepper	418	45%
Black radish	381	41%
Pumpkin	359	39%
Red beans	279	30%
Black beans and other beans	223	24%
Turnips (*repa*)	204	22%
Sunflower	187	20%
Eggplant	151	16%
Jerusalem artichokes	64	7%
Rutabaga	63	7%
Turnips	27	3%
Other vegetables	15	2%
Greens		
Dill	768	83%
Parsley	487	52%
Sorrel	426	46%
Coriander	113	12%
Other greens	1	0%
Fruit, berries and nuts		
Currants	766	82%
Apples	726	78%
Raspberries	670	72%
Gooseberries	637	68%
Plums	594	64%

[Table 41 continued.]

Cherries	539	58%
Wild strawberries	516	55%
Strawberries	491	53%
Pears	469	50%
Black rowanberries	294	32%
Rowanberries	229	25%
Sea-buckthorn	215	23%
Guelder rose	189	20%
Blackthorn	99	11%
Honeysuckle	94	10%
Rosehips	93	10%
Blackberries	84	9%
Garden serviceberries	83	9%
Magnolia vine (*Schisandra chinensis*)	38	4%
Currants/gooseberry hybrid	17	2%
Hazelnuts	11	1%
Other berries and fruit trees and shrubs	0	0%
Ornamental and non-food crops		
Flowers	691	74%
Lilac	222	24%
Lawn	135	15%
Hay	10	1%
Other non-food crops, trees, shrubs	26	3%
Cereals (grains)		
Rye	12	1%
Wheat	6	1%
Buckwheat	3	0%
Other cereal crops	3	0%
Animals, birds and bees		
Chickens	137	15%
Pigs	58	6%
Cows	32	3%
Goats	25	3%
Bees	21	2%
Rabbits	19	2%
Ducks	17	2%
Sheep	11	1%
Turkeys	9	1%
Other animals & birds	1	0%

in Chapter 1 on the basis of national-level statistics: family gardens represent small-scale agroforestry systems in which perennial and annual crops are combined to create highly diverse polyculture plantings. This diversification is encouraged by tradition, by the very small size of the garden-plots, and in certain instances by conscious application of agro-ecological knowledge (e.g., as we shall see later, 11% of gardeners deliberately attract wild birds and insects for pest control).

Such a great degree of diversification has important economic, agricultural, and environmental advantages, including the minimization of risk of crop failures through crop diversification, better utilization of nutrients through combining annual crops with perennials, as well as encouraging biodiversity and creating a habitat for wildlife.

Indeed, the following data (Table 42) confirm that food production in garden-plots is a very stable practice.

Table 42. Changes in gardeners' volume of production over the past 5 years.

	Frequency	**Percent**
Increased significantly (more than doubled)	25	3%
Increased	155	17%
Stayed about the same	505	54%
Decreased	171	18%
Decreased sharply (at least halved)	24	3%
Do not know	50	5%
Total	930	100%

For the majority (54%) of gardening households the volume of production stayed approximately the same. Production increased and decreased for approximately the same number of households (17% and 18% respectively). It also sharply increased (more than doubled) and sharply decreased (at least halved) for the same number of households (3% each). We can thus conclude that since the number of households that experienced increase

in production is roughly equal to the number of households that decreased production, the overall output of all gardens has probably remained roughly the same.

The outlook for the next 5 years offers a similarly stable picture: the majority (55%) of households project that their garden's output will stay about the same, and roughly the same number of households project an increase (14%) and decrease (12%) in production (2% and 1% foresee a sharp increase and sharp decrease, respectively) — see Table 43.

Table 43. Projected changes in gardeners' volume of production over the next 5 years.

	Frequency	**Percent**
Increase significantly (more than double)	15	2%
Increase	128	14%
Stay about the same	516	55%
Decrease	107	12%
Decrease sharply (at least halve)	13	1%
Do not know	151	16%
Total	930	100%

Therefore, gardening in the Vladimir oblast presents itself as a highly diversified and stable agroforestry practice combining a large variety of annual and perennial crops.

Soil fertility maintenance

Gardeners rely on a variety of fertilizers and methods to maintain soil fertility. By far the most popular method is application of organic fertilizers, especially manures (used by 86% of households). This is explainable by the long tradition of using manure as the major fertilizer, as well as by the ready availability of manures in both villages (where livestock is kept) and in the dacha garden settlements of the urbanites (where it can be procured from the nearest village). Other organic materials used include compost (used by 63% of gardeners), as well as leaves, sawdust, or straw (50%).

The next common practice is crop rotation (used by 57% of gardeners). Since different annual crops vary in their nutrient requirements, rotating crops has an important benefit of using soil nutrients more fully and mitigating nutrient loss.

Mineral and chemical fertilizers are used by 39% of gardeners. Households give preference to mineral (rock) fertilizers (31%).

The use of these and other methods of maintaining soil fertility is summarized in Table 44.

Table 44. Soil fertility maintenance methods used by gardening households.

	Households	Percent
Apply manures	796	86%
Apply compost	589	63%
Rotate crops planted on a particular spot	531	57%
Apply leaves, sawdust, or other organic material	463	50%
Apply mineral or chemical fertilizers	362	39%
Apply lime	278	30%
Plant legumes and other N-fixing plants	189	20%
No-till	123	13%
Deep tillage (deeper than 20 cm)	85	9%
Let part of the plot lie fallow for several years	70	8%
Plant and turn cover crops under	45	5%
Do not know	61	7%

Weed and pest control

Gardeners rely on mechanical means of controlling weeds. By far the most common method is pulling or cutting weeds back (used by 90% of gardeners). 59% of households use tillage as a control measure. Some households use mulch (15%), while the use of herbicides is relatively uncommon (5%) — see Table 45.

Table 45. Weed control methods used by gardening households.

	Households	Percent
Weeding or cutting	839	90%
Cultivation (tillage) of the soil	545	59%
Apply mulching material	140	15%
Apply herbicides	48	5%
Do not control weeds	21	2%
Do not know	33	4%

While chemicals seem to have fairly limited use for fertilization and weed control, a significantly larger proportion of gardeners make use of chemicals to control pests (52%), while 46% treat plants against pests without the use of poisons (e.g., using soapy sprays against aphids). It is important to note a significant distinction in chemicals use between urban and rural gardeners: 74% of villagers use *no* chemical fertilizers, herbicides, or pesticides in their gardens, while only 37% of urbanites abstain completely from chemical use.

The methods of pest control are summarized in Table 46.

Table 46. Pest control methods used by gardening households (respondents could provide more than one answer).

	Households	Percent of households
Chemicals or poisons	482	52%
Treat without use of poisons (e.g., soapy sprays, etc.)	430	46%
Mechanical means (fencing, traps, etc.)	190	20%
Biological means — attract beneficial birds and other animals or insects	99	11%
Have some pests, but do not use any control measures	50	5%
Have no pests	33	4%
Other	41	4%
Do not know	26	3%

Note: the most popular “Other” answer was “pick [bugs, etc.] by hand.”

Seed sources

Gardeners play an important role in preserving heirloom varieties of agricultural plants through seed saving and exchanging seeds with other gardeners. While one third of gardeners now purchase all or most of their seeds on the market, the remaining two thirds practice seed saving at least to some extent. Eighteen percent (18%) of gardeners rely entirely or to a large extent on their own seeds, while 11% obtain seeds from their friends and neighbors (see Table 47).

Table 47. Sources of gardeners' seeds (respondents could provide more than one answer).

Seed sources	Households	Percent of households	Percent of urban households using this source	Percent of rural households using this source
Save their own seeds	48	5%	3%	11%
Mostly save their own seeds	121	13%	11%	20%
Save some seeds; buy others	460	49%	49%	52%
Buy all (or most of) seed	305	33%	38%	16%
From neighbors or other gardeners	99	11%	13%	5%
Do not know	39	4%	4%	6%

It is important to note a significant distinction between the urban and rural households. The latter are much less dependent on commercial seeds and rely heavily on seed saving. Thus, 11% of villagers (compared to 3% of urbanites) save *all* of their seeds; while only 16% of villagers (compared to 38% of urbanites) purchase all or most of their seeds on the market.

Wildlife

Gardeners have an overall positive attitude to the presence of wildlife in their garden. Forty percent (40%) of gardening households enjoy watching wild animals and birds, or see them as benefiting the garden (e.g., birds controlling pests). Another 38% of households pay no special attention to wildlife, and only 14% have a mostly negative attitude, due to the damage wildlife causes to their plantings or domestic animals and birds. Eighteen percent (18%) of gardeners put up bird houses on their plot in a deliberate attempt to attract wildlife to their plot.

Sociocultural dimension

Multifunctionality

As previously noted, agriculture represents only one dimension of gardening. General observation and previous studies alike show that it is a highly diversified practice involving both agricultural and non-agricultural uses. Results of my survey confirm this multifunctional characteristic of gardens.

Table 48 shows the different uses households put their plots to.

It is clear from Table 48 that garden-plots have many more functions than food production alone. Even rural residents — who are usually portrayed as clinging to their plots "for survival" (e.g., Artemov 2003) — use them for recreation (58%), family gatherings (58%) and even playing sports (13%). There are some differences in usage patterns by urbanites and villagers: a much greater proportion of the latter, for example, use the plot for raising animals and birds (which is explainable by the need for daily care that the seasonally

Table 48. Uses of garden-plots by households with a plot (households could indicate multiple uses).

	TOTAL		URBAN		RURAL	
	House-holds	Percent of house-holds	House-holds	Percent of urban gardeners	House-holds	Percent or rural gar-deners
Grow vegetables	889	96%	669	96%	220	94%
Grow berries and fruit	819	88%	630	90%	189	81%
Grow flowers	714	77%	568	81%	146	63%
Relaxing	566	61%	433	62%	133	57%
Family gatherings, receiving guests	540	58%	405	58%	135	58%
Celebrate special occasions	445	48%	337	48%	108	46%
Permanent residence year-round or part of the year	282	30%	147	21%	135	58%
Spend vacation at	204	22%	186	27%	18	8%
Raise poultry or other birds	149	16%	53	8%	96	41%
Play sports	95	10%	64	9%	31	13%
Raise farm animals	79	8%	29	4%	50	21%
Keep bees	25	3%	12	2%	13	6%
Landscaping	22	2%	21	3%	1	0%
Lease out	0	0%	0	0%	0	0%

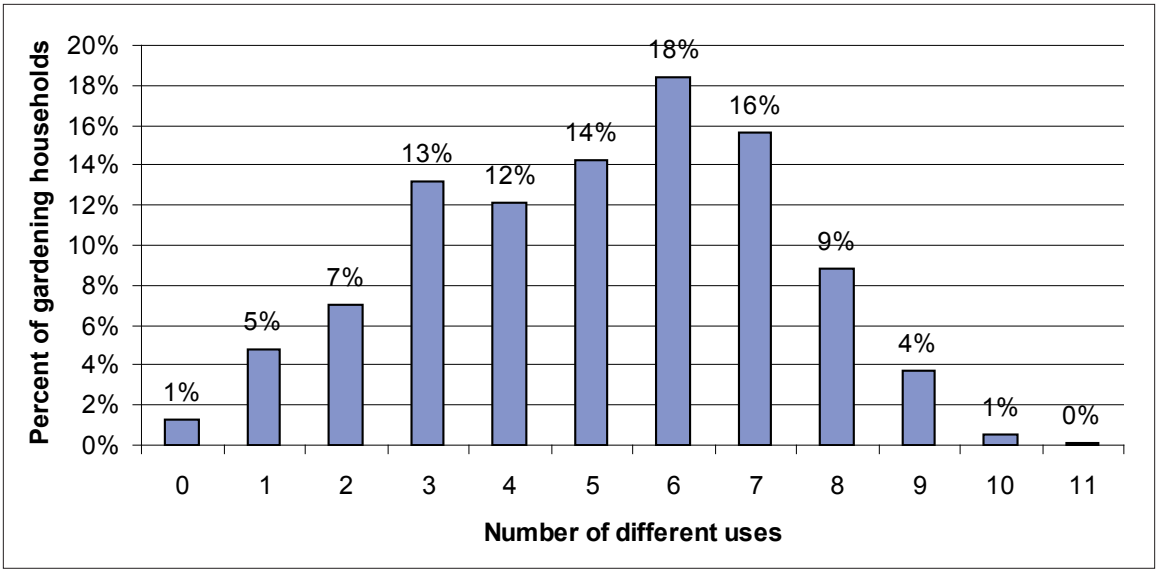


Figure 33. Number of uses of garden-plots for each gardening household.

visiting urbanites often cannot provide), while such activity as landscaping is almost exclusively a domain of urban folk.

The multifunctionality of the garden-plots is also clearly apparent from Figure 33, which shows the number of different uses each household puts their plot to.

Only 1% of households do not use their plot, and only 5% put it to a single use such as vegetable growing. The remaining 94% of households put it to multiple uses, with an average (both median and mean) of 5 different uses per household. Ninety-seven percent (97%) of households put their plot to at least one type of agricultural use, with an average of 2 different agricultural uses per household; and 89% of household put their plot to a least one kind of non-agricultural use, with an average of 3 different non-agricultural uses per household. (Both landscaping and flower-growing were considered "non-agricultural" uses in these groupings.)

It is already clear from the above figures that garden-plots perform a range of economic (e.g., food production) and social (e.g, family gatherings) functions. However, these data do not suffice to determine the relative importance of economic, social, and cultural functions for each household (in some instances "vegetable-growing" may represent an extensive planting to provide a household's food staples for the entire year; in others it may be as little as one bed of greens to add to the table while on visits to the garden). Besides, as was discussed in Chapter 1, given the ancient tradition of self-provisioning and self-reliance, even food-growing itself is not just a "purely economic" activity, but reaches far into social and cultural realms. Table 49 helps us glean additional insight into the motives behind gardening and the relative importance of gardens' different functions.

Table 49. Households' rankings of the importance of the different functions of their garden-plots. (The third line of each item shows combined percentages: "very important"+"important" and "rather unimportant"+"unimportant," respectively.)

Garden function		very important	important	rather un-important	unimpor-tant	do not know
An auxiliary source of food for the family's table	users	265	450	92	57	66
	%	28%	48%	10%	6%	7%
		77%		**16%**		
Maintaining our connection to the earth, to nature	users	216	473	120	41	80
	%	23%	51%	13%	4%	9%
		74%		**17%**		
Hobby, recreation, we enjoy gardening	users	269	410	133	54	64
	%	29%	44%	14%	6%	7%
		73%		**20%**		
Place to spend time in the company of other people (neighbors, guests, family members)	users	194	456	146	50	84
	%	21%	49%	16%	5%	9%
		70%		**21%**		
A major source of food for the family	users	101	312	268	171	78
	%	11%	34%	29%	18%	8%
		44%		**47%**		
Security for a "rainy day"	users	99	287	164	255	125
	%	11%	31%	18%	27%	13%
		42%		**45%**		
Secondary residence	users	91	126	191	395	127
	%	10%	14%	21%	42%	14%
		23%		**63%**		
Source of monetary income	users	47	152	194	430	107
	%	5%	16%	21%	46%	12%
		21%		**67%**		

Table 49 brings forth some very important results.

First, it confirms the multifunctionality. We can see that food growing *is* of great significance: for 77% of gardening households their gardens represent an important or very important *auxiliary* source of food, and for 44% of households — a *major* source of food for the family. Yet at the same time we can see that food production is not the only function of gardening — and for many households not even a major one. Rather, food production is *one of* a whole range of economic (including recreational uses), social, and cultural functions. In fact, the three functions that closely follow gardening as an "auxiliary source of

food" in their importance do not relate to food at all. Rather, they present gardening as culturally (not to say spiritually) important for maintaining contact with the earth and nature (important or very important for 74% of households); as an activity that people perform for its own sake — as recreation or something they just enjoy doing (73% of households); or a family space to spend time with one's kin or friends (70% of households). These data vindicate and offer quantitative support to the views of Schumacher (see Chapter 1 above), who maintained over three decades ago that food production is not the only, and not even the primary function of agriculture.

The second conclusion is that gardening is a very diverse practice with very diverse meanings to different households. There are households for whom it is extremely important as a primary source of subsistence (11%) or monetary income (5%) — and there are households for whom these two functions are totally unimportant (8% and 12%, respectively). Likewise, for 23% of households their gardens are very important as a means of maintaining their link to the natural world, while for some (4%) it is not important at all.

Multifunctionality and diversity of gardening practice has important implications for science, decision-making, and policy. If the food production function of gardening is the only function recognized (as is often the case in both academe and policy), the resulting conclusions and decisions may be as far removed from reality as our appreciation of the value of Da Vinci's *Mona Lisa* would be if we based our conclusions solely on the chemical composition of its canvas. Likewise, if scholars, decision-makers, and legislators insist on treating the multifaceted group of gardeners undifferentiatedly (e.g., championing the commercialization of garden production), the resulting conclusions, recommendations, laws, and regulations will likely be biased, and while they may appeal to certain gardeners, they will continue to ignore the aspirations, needs and values of the rest.

Agri-cultural values

As we have seen, the role of gardening is not limited to food production. As discussed in the Methodology section of this chapter (see *Measuring cultural characteristics*), the *cultural* importance of gardening to the residents of the Vladimir oblast can already be seen from the observation of their *behavior* (e.g., participation in gardening is very widespread and does *not* decrease as income level increases).

We have also seen that the sociocultural functions of gardens are of great importance to the gardeners. Further insights can be gleaned from the examination of the answers to the questions from the "agri-cultural scale."

This scale is based on 22 items (discussed in *Measuring cultural characteristics* above) and has values ranging from 0 (total lack of endorsement of "agri-cultural" values) to 100 (absolute endorsement thereof). The score of 50 is the neutrality point; scores over 50 represent overall adherence to these values and score under 50 — overall lack of adherence thereto (see Table 50).

Table 50. Endorsement of agri-cultural values scale.

Degree of endorsement*	**Score**
All strongly disagree	0.0
All disagree	16.7
Neutral or do not know	50.0
All agree	83.3
All strongly agree	100.0

*For positively-formulated statements.

Answers to the questions of the scale were obtained from *all* respondents (both gardeners and non-gardeners). The scores from the 1,191 respondents ranged from 35.6 to 100.0, with an average score of 73.0 (standard deviation 12.0, standard error of mean 0.35). This

indicates the overall adherence to cultural values on the part of respondents. The distribution of the scores is presented in Figure 34.

As we can see, the vast majority of scores are on the "adherence" side of the scale, 48% of scores fall within the 70–85 score range and 69% of scores fall within the 65–90 score range — all indicative of an overall fairly strong adherence to the cultural values on the part of respondents.

As was earlier noted in the methodological discussion, these responses come from individual respondents and not from *all* the members of their households. Therefore, these scores may or may not be representative of where *households* (which are the unit of observation for this study) stand on this scale. However, the results show that *gender* and *age* — two key demographic characteristics of the *individual* respondent — characteristics which, we would think, could influence the distribution of scores — are of little influence on the average score. Indeed, of the following characteristics:

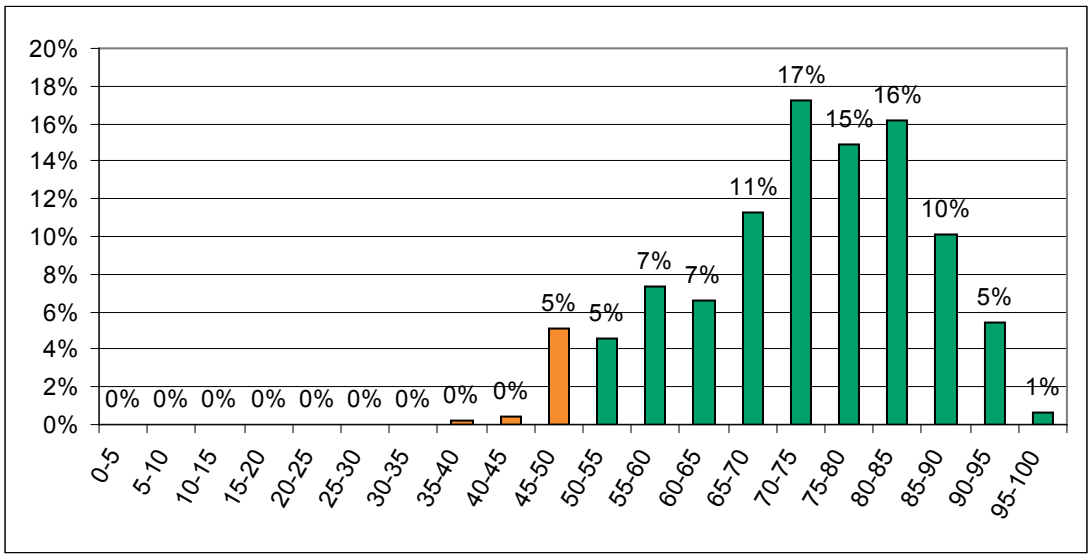


Figure 34. Distribution of scores on the agri-cultural scale. Note: interval boundaries (45, 50, 55, etc. are included in the *lower* interval).

- age of respondent,
- gender of respondent,
- household size,
- household income level,
- household participation in gardening (gardeners/non-gardeners), and
- household place of residence (urban/rural)

not one seems to have any sizeable influence on the average score (Table 51).

Table 51. Cultural scale score distribution for different groups of respondents.

Group	Group size	Mean	Std. Error of Mean	Std. Deviation	Minimum	Maximum	Range
AGE of respondent							
0–25	55	69.1	1.6	11.8	46.2	86.4	40.2
26–35	122	73.5	1.1	12.0	49.2	96.2	47.0
36–45	265	72.3	0.7	12.2	39.4	96.2	56.8
46–55	364	71.3	0.6	11.8	35.6	95.5	59.8
56–65	193	74.8	0.8	11.6	47.7	94.7	47.0
66–75	138	76.5	1.0	11.6	49.2	100.0	50.8
76–100	54	76.2	1.5	11.4	52.3	96.2	43.9
GENDER of respondent							
male	365	71.9	0.6	11.6	39.4	96.2	56.8
female	826	73.5	0.4	12.1	35.6	100.0	64.4
SIZE of household							
1	176	73.3	0.9	12.5	41.7	96.2	54.5
2	387	73.4	0.6	11.9	38.6	96.2	57.6
3	328	71.4	0.7	12.2	35.6	100.0	64.4
4	190	74.6	0.9	11.9	43.2	94.7	51.5
5	85	72.5	1.1	10.5	43.9	94.7	50.8
6	18	74.2	2.4	10.2	54.5	93.9	39.4
7	5	80.8	4.1	9.2	70.5	94.7	24.2
8	2	89.8	0.4	0.5	89.4	90.2	0.8
INCOME of household							
1 (“poorest”)	166	73.0	1.1	13.6	38.6	96.2	57.6
2	396	73.5	0.6	11.6	44.7	100.0	55.3
3	457	74.1	0.5	10.9	39.4	96.2	56.8
4 (“richest”)	118	70.0	1.2	13.2	35.6	96.2	60.6
GARDENER/NON-GARDENER household							
gardeners	930	73.1	0.4	11.7	35.6	100.0	64.4
non-gardeners	261	72.9	0.8	13.0	38.6	95.5	56.8
URBAN/RURAL household							
urban	936	73.8	0.4	12.1	38.6	100.0	61.4
rural	255	70.2	0.7	11.1	35.6	96.2	60.6

As we can see from Table 51, there *is* some variation in the average score of different age groups. Young adults (25 years of age or younger) have a slightly lower score than the rest of the group, while respondents aged 56 or higher have slightly higher scores compared to the younger groups. Nevertheless, the mean score for all age groups lies within 4 points of the sample's mean. Therefore, the age of the respondent does not seem to be a prominent factor in determining adherence or lack of adherence to the cultural values measured by the scale.

The same can be said about gender: female respondents' average score is slightly larger than for male respondents, but since both lie within a 2 point range and have similar standard deviations, gender does not seem to be an important factor.

For the most part, the size of the household does not seem to be an important factor either. For family sizes 1 to 6, the average score lies within 2 points of the sample's mean. Note that in the sample, there were only 18, 5 and 2 households with 6, 7 and 8 members, respectively, therefore the much higher average score (especially for family size 7 and 8) is not statistically reliable.

The "wealthiest" group of respondents has a somewhat lower score than all other income groups. Therefore, it is likely that the wealthier households may have a lower level of adherence to agri-cultural values than those with lower income. Nevertheless, even for this "outlier" group the average score is within 3 points of the sample's mean.

It is noteworthy that the average score is almost the same for both gardeners and non-gardeners. Therefore, adherence to agri-cultural values is not unique to those with a garden but includes non-gardeners in the same measure.

Finally, there is a small difference between urban and rural respondents: the average score for rural respondents is 3.6 points *lower* than for urbanites, but both lie within 3 points of the sample's mean.

Therefore, none of the examined factors seems to have a drastic influence on the score averages, and so we can cautiously assume that this average may be representative of that of the population.

The detailed distribution of the answers to the cultural scale items is presented in Table 52.

As we can see from Table 52, there is a significant variation between the scores of individual items (from 39.0 to 91.7), as well a range of attitudes within the items themselves. The scores represent the *average* level of endorsement, which means that even for items with very high scores there may be a smaller group of individual respondents who do not endorse the value measured by the item. Table 53 presents the five items which received the highest level of endorsement and the five items with the lowest level of endorsement.

It is noteworthy that the highest-scoring item deals with the superior qualitative characteristics of home-grown produce. Such a high level of agreement with this statement has important implications: economic and agricultural research and policy cannot be accurate if they rely exclusively on *quantity* indicators (such as volume of output) without taking *quality* characteristics into account. For example, a drive to boost industrial agriculture output will not result in a corresponding increase in people's level of well-being, since large industrial producers cannot, by definition, produce "home-grown" products which people value the most. This item is corroborated by item 16, which shows that it is in the union of physical (agricultural labor resulting in agricultural product) and metaphysical (meanings attached to the practice) dimensions that the true meaning of agriculture can be appreciated.

Table 52. Distribution of responses to cultural scale questions for all respondents, for urbanites, and villagers.

		Strongly agree	Agree	Disagree	Strongly disagree	Do not know	Score*
[1] **Strong agriculture is the foundation for a strong national economy.**	**all**	**70%**	**22%**	**2%**	**1%**	**6%**	**91.2**
	urban	69%	21%	2%	0%	7%	90.8
	rural	71%	24%	1%	1%	4%	92.9
[3] **Life in the city is better than life in the country** *(negative formulation).*	**all**	**30%**	**23%**	**18%**	**12%**	**17%**	**39.0**
	urban	35%	28%	16%	7%	14%	32.0
	rural	12%	7%	26%	29%	25%	64.5
[4] **Tending a garden makes a person more economically independent.**	**all**	**30%**	**34%**	**17%**	**5%**	**15%**	**68.1**
	urban	30%	35%	18%	5%	13%	68.0
	rural	28%	32%	13%	4%	24%	68.6
[5] **The centuries-old tradition of land-based living in our country is still of great relevance today.**	**all**	**32%**	**31%**	**11%**	**5%**	**21%**	**70.2**
	urban	36%	29%	12%	5%	19%	71.3
	rural	18%	38%	7%	6%	30%	66.1
[6] **Produce grown on one's own garden-plot is more environmentally safe, healthier, and tastier than what can be bought in a store.**	**all**	**74%**	**16%**	**2%**	**0%**	**8%**	**91.7**
	urban	74%	17%	2%	0%	6%	91.9
	rural	76%	10%	1%	0%	13%	91.0
[7] **Russia needs to follow its own path of development and not try to imitate that of Western nations.**	**all**	**48%**	**27%**	**8%**	**2%**	**15%**	**79.0**
	urban	51%	26%	8%	2%	14%	80.3
	rural	36%	32%	11%	2%	20%	74.1
[8] **If an agricultural producer requires government support (credits, subsidies, etc.), the way the producer operates must be fundamentally inefficient** *(negative formulation).*	**all**	**10%**	**15%**	**26%**	**22%**	**27%**	**59.4**
	urban	10%	16%	29%	20%	24%	59.3
	rural	11%	10%	13%	29%	37%	59.5
[9] **Household gardens are an integral part of the nation's agriculture, just as family and corporate farms are.**	**all**	**36%**	**32%**	**7%**	**5%**	**19%**	**74.0**
	urban	40%	36%	7%	2%	14%	78.3
	rural	25%	17%	6%	16%	36%	58.2
[11] **Small to mid-size farms should become the backbone of Russia's agriculture.**	**all**	**33%**	**30%**	**12%**	**3%**	**23%**	**71.1**
	urban	35%	29%	12%	2%	23%	72.1
	rural	26%	34%	12%	6%	23%	67.3
[12] **The government should provide more support for the development of the country's agriculture.**	**all**	**68%**	**20%**	**1%**	**1%**	**10%**	**89.9**
	urban	75%	16%	1%	0%	8%	92.2
	rural	45%	34%	2%	4%	15%	81.4
[13] **Every person must plant at least one tree in his/her lifetime.**	**all**	**68%**	**20%**	**2%**	**0%**	**9%**	**89.6**
	urban	72%	17%	3%	0%	8%	90.5
	rural	53%	32%	1%	0%	14%	86.5

[Table 52 continued.]

[14] **Agricultural producers should specialize in the production of one or only a few crops/products** *(negative formulation).*	**all**	**20%**	**20%**	**23%**	**10%**	**28%**	**45.9**
	urban	17%	19%	27%	10%	26%	48.7
	rural	28%	24%	7%	10%	31%	35.7
[15] **Russia should be self-sufficient in terms of food production, and not buy foodstuffs abroad.**	**all**	**55%**	**28%**	**5%**	**1%**	**11%**	**84.9**
	urban	59%	25%	6%	1%	10%	85.5
	rural	42%	40%	3%	1%	15%	82.6
[16] **It is essential for each person to maintain a direct link to living nature, and gardening provides such a link.**	**all**	**47%**	**34%**	**5%**	**2%**	**12%**	**82.4**
	urban	52%	33%	5%	1%	10%	84.7
	rural	31%	38%	5%	5%	20%	73.7
[17] **Gardening improves one's physical and mental health.**	**all**	**48%**	**32%**	**6%**	**2%**	**12%**	**81.8**
	urban	51%	30%	6%	1%	11%	83.0
	rural	35%	40%	4%	4%	17%	77.5
[18] **Many problems of today's Russia result from cities being overpopulated while rural areas are dying out.**	**all**	**49%**	**28%**	**4%**	**6%**	**12%**	**79.7**
	urban	54%	30%	3%	2%	11%	84.7
	rural	33%	23%	7%	21%	17%	61.4
[19] **Working with plants and the soil allows one to demonstrate one's creativity.**	**all**	**37%**	**33%**	**10%**	**2%**	**18%**	**75.1**
	urban	43%	31%	10%	2%	14%	77.0
	rural	16%	42%	9%	2%	32%	68.0
[20] **It is more important for our household to have a garden and be self-sufficient than try to increase our monetary income.**	**all**	**22%**	**22%**	**19%**	**18%**	**19%**	**53.5**
	urban	20%	22%	20%	19%	19%	51.2
	rural	29%	24%	12%	14%	21%	61.8
[21] **Gardening and farming involve too much physical labor.**	**all**	**50%**	**24%**	**9%**	**5%**	**11%**	**77.3**
	urban	58%	24%	6%	2%	9%	84.5
	rural	18%	24%	20%	19%	19%	51.0
[22] **As the nation's economy improves and incomes increase, the amount of produce grown on household garden-plots will decrease** *(negative formulation).*	**all**	**24%**	**26%**	**16%**	**10%**	**25%**	**39.7**
	urban	28%	29%	16%	6%	22%	34.2
	rural	7%	15%	16%	26%	35%	59.7
[23] **Today's gardeners continue the ancient Russian tradition of treating the land with the same respect and care as you would show to your mother.**	**all**	**45%**	**36%**	**5%**	**1%**	**13%**	**82.3**
	urban	47%	35%	6%	1%	11%	82.7
	rural	39%	38%	2%	1%	20%	80.8
[24] **Contact with the earth and plants makes a person happier.**	**all**	**45%**	**35%**	**7%**	**1%**	**12%**	**81.0**
	urban	47%	32%	8%	1%	11%	81.0
	rural	36%	44%	2%	2%	16%	80.9

Notes: Item numbering consistent with question 54 from the survey (items 2 and 10 do not constitute part of the scale and are omitted). *Score — the same 0–100 scale is used as for agri-cultural values in general (i.e., 0=total lack of adherence; 50=neutral; 100=total adherence). For negatively-formulated items (3, 8, 14, 22) "strongly agree" means lack of adherence to the value measured by this item.

It is also important to note that while these items correspond to the values termed "agrarian" by American sociologists, they have a particular "Russian flavor" stemming from the old tradition. Here we have a recognition of the uniqueness of the man-nature relationship which produces a unique product; a recognition of the uniqueness of Russia's path of development; the economic and cultural prominence of trees; as well as the idea that life on the land receives support from higher realms (formerly associated with the life-giving forces of the universe; and now actualized in the form of a support-giving "state").

Note also that items 6 and 13 are the only ones that had 0% respondents to "strongly disagree," which further attests to their importance for the respondents.

Table 53. Items with the five highest and the five lowest scores.

Score	Item
Highest scores (highest first)	
91.7	*[6]* **Produce grown on one's own garden-plot is more environmentally safe, healthier, and tastier than what can be bought in a store.**
91.2	*[1]* **Strong agriculture is the foundation for a strong national economy.**
89.9	*[12]* **The government should provide more support for the development of the country's agriculture.**
89.6	*[13]* **Every person must plant at least one tree in his/her lifetime.**
84.9	*[15]* **Russia should be self-sufficient in terms of food production, and not buy foodstuffs abroad.**
82.4	*[16]* **It is essential for each person to maintain a direct link to living nature, and gardening provides such a link.**
Lowest scores (lowest first)	
39.0	*[3]* **Life in the city is better than life in the country** *(negative formulation).*
39.7	*[22]* **As the nation's economy improves and incomes increase, the amount of produce grown on household garden-plots will decrease** *(negative formulation).*
45.9	*[14]* **Agricultural producers should specialize in the production of one or only a few crops/ products** *(negative formulation).*
53.5	*[20]* **It is more important for our household to have a garden and be self-sufficient than try to increase our monetary income.**
59.4	*[8]* **If an agricultural producer requires government support (credits, subsidies, etc.), the way the producer operates must be fundamentally inefficient** *(negative formulation).*

The five items with the *lowest* scores show that respondents are far from considering the small-scale, diversified gardens and rural life as the only mode of agricultural production and the only lifestyle having the right to exist. Nor does there seem to be a conflict between self-provisioning and monetary income. Rather, respondents believe that both gardens and larger-scale operations have their place in the nation's agriculture; that the high degree of self-sufficiency which comes with gardening does not stamp out the aspiration for higher monetary incomes; that one may live in the city yet continue to maintain one's link to the land; and that government support for agriculture *is* indeed needed, but should not be used to encourage economically-unviable producers (while 48% of respondents do *not* see a producer's dependence on government support as necessarily indicative of the producer's inefficiency, 25% do see it is such).

Interestingly, two of the items with the lowest scores (3 and 21) are also among the items where the attitudes of the urbanites and rural people have diverged the most (Table 54).

Table 54. Items with the largest difference between the scores of urban and rural respondents.

Item	Overall score	Urban score	Rural score	Difference (R-U)
[21] **Gardening and farming involve too much physical labor.**	**77.3**	84.5	51.0	-33.4
[3] **Life in the city is better than life in the country** *(negative formulation).*	**39.0**	32.0	64.5	32.5
[22] **As the nation's economy improves and incomes increase, the amount of produce grown on household garden-plots will decrease** *(negative formulation).*	**39.7**	34.2	59.7	25.5
[18] **Many problems of today's Russia result from cities being overpopulated while rural areas are dying out.**	**79.7**	84.7	61.4	-23.2
[9] **Household gardens are an integral part of the nation's agriculture, just as family and corporate farms are.**	**74.0**	78.3	58.2	-20.2

As we can see, the overall agreement (which resulted in the lower agri-cultural score) with the statement that "city life is better than rural life" is due to the attitude of urbanites (who constituted the majority of respondents, proportionately to the number of urban/rural households in our target population). While urbanites somewhat agreed with the statement (which resulted in the lower score of 32.0), villagers somewhat disagreed with the same (score 64.5). Likewise, the urbanites could see that the redressing of the country's economy may result in the declining role of self-provisioning (score 34.2) while villagers somewhat disagreed with the likelihood of this prospect (59.7). Besides, in answering the question not part of the agri-cultural scale (item 2): "do you agree that life in rural areas has become harder over the past 6–7 years" — 84% of the urbanites (being outside observers) "strongly agreed" or "agreed" (the resulting score 85.0), while only 41% of villagers expressed their agreement with the statement (score 49.9).

These differences in the urbanites' and villagers' views on rural life and the connection between the overall state of economy and the prominence of self-provisioning has three important implications.

First, it would be incorrect to assume (as some economists do) that rural residents stay where they are only because they do not have the educational level or resources to move to the city. While this may be the case for some households, in our survey rural residents expressed an overall disagreement with the proposition, showing that they actually prefer rural life to urban.

Second, the starting difference in the urbanites' (outsiders') views and villagers' (insiders') view on the "hardships" of rural life (including items 21, 3, and 2), reveals, as Dershem (2002) also observed, that the economic development indicators — be it per capita monetary income or the number of vehicles or home telephones per 1,000 households — represent

very imperfect measures of the actual level of the households' well-being. Whereas the vast majority of urbanites earnestly believe that rural life is becoming harder and harder, half the villagers themselves think just the opposite! Therefore, agricultural and rural development policies cannot be based on the assumption that economic indicators serve as a good measure of villagers' contentment with life.

Finally, the fact that respondents do not see a strong conflict between urban life and the country, self-provisioning and monetary income, and small-scale gardening and larger-scale agricultural operations, suggests that the time may be coming when we will need to envision — as Chaianov did 90 years ago — an economic system in which the boundary between the city and the country will become blurred, and many of the conflicts between urbanization and rurality will be transcended. This, in fact, is already starting to happen, as we shall see in Chapter 3.

Family space and social interaction

I previously mentioned that garden-plots serve an important social function as a place where a family comes together. As discussed, since the very remote past food growing has been a family affair. In the Soviet period dachas were also a place where families and friends could come together outside the range of secret police surveyance (Lovell 2003). To the present day rural residents' garden-plots attract, during the summertime, relatives living in the city, who come to relax and also to participate in agricultural activity, thus maintaining their link both with their rural family and the soil (Paxson 2005).

The results of my survey confirm that the garden-plots of residents of the Vladimir region play this important social function. Fifty-eight percent (58%) of gardeners, both urbanites and villagers, report using the plots for family gatherings, and 48% use their garden as a place to celebrate special occasions (see Table 48 in the *Multifunctionality* section).

The social interaction facilitated by gardening extends beyond the family and involves neighbors and other gardeners. Thus, 65% of gardeners share their gardening experiences with neighbors, while 57% discuss topics unrelated to gardening. There is a significant amount of seed-sharing (52% of gardeners) and mutual help in the form of watching after your neighbor's plots/house when the neighbor is away (47%). It is noteworthy that only 5% of gardeners say they do not interact with their neighbors at all, and only 2% do not get along well with their neighbors (Table 55).

As we can see, gardens continue to fulfill their social function to the present day. Just as with the family clans of the very distant past, the era of *obshchina* and *mir* (communal organization of a village) of tsarist Russia, family cohesion and social interaction are important parts of food growing activity as practiced today. In many instances (be it obtaining land from the authorities for a gardening association or pulling household resources together to put in infrastructure) it would be especially challenging for a given household to cope with tasks at hand on their own, while mutual help and being part of a collective become a tradition-honored necessity.

Table 55. Gardeners' interaction with their neighbors (respondents could provide multiple answers).

	Households	**Percent of households**
Share gardening experiences	609	65%
Discuss topics unrelated to gardening	531	57%
Share seeds and planting materials	479	52%
Watch after their garden or house when they are away	434	47%
Give each other a hand in maintaining the garden	221	24%
Share, buy or sell part of the harvest	159	17%
Do not interact at all	46	5%
Quarrel or do not get along all that well	22	2%
Other	1	0%
Do not know	43	5%

Information and skills

From 2001 on, households have been producing over 50% of Russia's agricultural output. Likewise, in the Vladimir oblast from 2001 to 2005, households were producing between 52% and 62% of the oblast's agricultural output, depending on the year (Vladimirstat 2006c). However, these figures are hardly ever reported in the mass media, nor do they seem to find reflection in government's policies. Thus we would expect that despite the obvious significance of gardens on the household level, residents of the Vladimir region do not have full knowledge of the practice's overall contribution to the region's — or nation's — agriculture.

The results of this survey confirm this hypothesis: over half of all respondents underestimate the contribution of gardening to the nation's agriculture (Table 56).

Table 56. Respondents' perception of the share of family gardens' output in the nation's agriculture.

	All		**Urban**		**Rural**		**Gardener**		**Non-gardener**	
	Percent	Cumulative %	Percent	Cumulative %	Percent	Cumulative %	Percent	Cumulative %	Percent	Cumulative %
Not very important; they must account for **no more than 10%** of all agricultural production	9%	9%	9%	9%	9%	9%	10%	10%	6%	6%
Important; I think they may account for **11 to 40%** of all agricultural production	42%	51%	46%	55%	26%	35%	41%	52%	42%	48%
Very important; I think they roughly produce half (**41–60%**) of all agricultural products in the country	25%	76%	23%	78%	36%	71%	25%	77%	26%	74%
They are of paramount importance, probably producing **61–80%** of Russia's agricultural output	11%	87%	10%	88%	12%	82%	11%	88%	9%	83%
Almost all products are produced by households (**81–100%**)	4%	91%	3%	91%	9%	91%	3%	92%	5%	88%
Do not know	9%	100%	9%	100%	9%	100%	8%	100%	12%	100%
Total	100%		100%		100%		100%		100%	

It is noteworthy that rural residents — being closer to the realities of the village, and having first-hand knowledge of the state of the "official" agriculture — are more aware of the macroeconomic role of gardening: 36% of rural respondents provided a correct estimate (compared with only 23% for urbanites), and another 35% underestimated it (compared to 55% of urbanites). It is highly unlikely that rural residents are better informed due to their better knowledge of official statistics. Rather, that information is likely obtained from sources other than the mass media or the government — namely, from personal observation.

We have already seen the prominence of informal networks in the redistribution of harvest, the procurement of seeds, social interaction, and other aspects of gardening. Likewise, as far as information is concerned, respondents seem to rely on their informal networks for obtaining information and gardening advice. As we can see from Table 57, interaction with other gardeners is the leading source of new knowledge (66% of gardeners use this source), while personal gardening experience comes next (54% of gardeners). Written sources are less popular, especially among rural residents. Only 6% of gardeners consult agricultural experts.

Table 57. Respondents' answers to the question: "Do you strive to acquire new knowledge on gardening, and from what sources?" (multiple responses allowed).

Responses	**All**	**Urban**	**Rural**	**Gardeners**	**Non-gardeners**
Yes, from dealing with other gardeners (e.g., neighbors and friends)	54%	55%	50%	66%	12%
Yes, from my own experience	44%	46%	35%	54%	7%
Yes, from periodicals	36%	40%	23%	44%	10%
Yes, from books	25%	28%	13%	30%	6%
Yes, I consult with agricultural experts	5%	5%	6%	6%	0%
Other	1%	1%	0%	1%	0%
No	26%	29%	16%	14%	70%
Do not know	6%	5%	11%	5%	9%

Interaction with others and personal experience, complemented by some reading, seem to suffice to propagate gardening skills within the gardening community (Table 58): 65% of gardening respondents consider themselves experienced gardeners (this share is even higher among rural gardeners — 75%).

Table 58. Respondents' answers to the question: "Do you consider yourself an experienced gardener?"

	All		Urban		Rural		Gardeners		Non-gardeners	
	Percent	Cumulative percent	Percent	Cumulative percent	Percent	Cumulative percent	Percent	Cumulative percent	Percent	Cumulative percent
Yes by all means	16%	16%	14%	14%	25%	25%	18%	18%	7%	7%
Rather yes than not	40%	56%	38%	51%	50%	75%	47%	65%	17%	25%
Rather not than yes	22%	79%	25%	76%	12%	86%	22%	88%	22%	46%
No	18%	97%	21%	98%	7%	93%	9%	97%	51%	97%
Do not know	3%	100%	2%	100%	7%	100%	3%	100%	3%	100%
Total	100%		100%		100%		100%		100%	

Problems

Table 59 presents gardeners' perception of the severity of the problems they are faced with in relation to their garden-plots. Of the five problems that received a score of 5.0 and higher on the 0 (not a problem) to 10 (a major problem) scale, three (including the two leading ones with the scores over 6.0) are from natural causes, one is of a social nature (theft), and one comes from government authorities.

Given the rather severe climatic conditions, non-*chernozem* soils, and the short growing season, it is not surprising that the down-to-earth concerns of maintaining the soil fertility, preventing crop failures, and controlling pest and weeds are of greatest prominence. Note, too, that with the exception of weed and pest control, the scores for these top-5 problems are higher for the rural gardeners than for the urbanites. Even thievery from the plots — a

Table 59. Gardening households' evaluation of the severity of problems related to gardening.

Problem		A major problem	A problem	Somewhat a problem	Not a problem	Do not know	Score
Maintaining soil fertility	**all**	**32%**	**33%**	**19%**	**10%**	**6%**	**6.4**
	urban	30%	31%	20%	12%	7%	6.1
	rural	36%	38%	18%	4%	5%	7.0
Pests and weeds	**all**	**23%**	**42%**	**21%**	**8%**	**6%**	**6.2**
	urban	26%	38%	22%	8%	6%	6.3
	rural	14%	55%	17%	9%	5%	6.1
Thievery	**all**	**37%**	**21%**	**14%**	**20%**	**7%**	**5.9**
	urban	34%	23%	15%	20%	8%	5.8
	rural	48%	14%	12%	22%	3%	6.3
Crop failures	**all**	**16%**	**43%**	**24%**	**10%**	**7%**	**5.7**
	urban	16%	40%	24%	12%	8%	5.5
	rural	16%	53%	24%	3%	5%	6.4
Too much paperwork to secure the land title or register structures	**all**	**33%**	**12%**	**9%**	**19%**	**27%**	**5.0**
	urban	29%	11%	10%	22%	28%	4.7
	rural	44%	14%	6%	12%	24%	6.1
Short growing season or not enough time for crops to ripen	**all**	**8%**	**24%**	**37%**	**23%**	**8%**	**4.1**
	urban	8%	26%	34%	25%	7%	4.1
	rural	8%	20%	44%	17%	11%	4.2
High land taxes and fees	**all**	**9%**	**16%**	**28%**	**36%**	**12%**	**3.3**
	urban	10%	15%	29%	34%	12%	3.5
	rural	5%	17%	24%	42%	12%	2.9
Hard to obtain more land	**all**	**12%**	**12%**	**10%**	**43%**	**22%**	**2.9**
	urban	12%	9%	10%	47%	23%	2.6
	rural	15%	24%	11%	32%	19%	3.9
Too expensive or do not have enough money to maintain it	**all**	**5%**	**14%**	**28%**	**45%**	**7%**	**2.8**
	urban	6%	18%	30%	38%	8%	3.2
	rural	1%	5%	23%	66%	5%	1.4
Plot is difficult to get to or too far from our primary residence	**all**	**8%**	**11%**	**18%**	**55%**	**8%**	**2.5**
	urban	11%	14%	19%	49%	7%	2.9
	rural	1%	2%	16%	72%	9%	1.1
Hard to find seed or planting material of good varieties	**all**	**3%**	**5%**	**12%**	**72%**	**8%**	**1.3**
	urban	4%	4%	9%	74%	8%	1.2
	rural	1%	9%	18%	64%	9%	1.6

Note: the score was calculated on the 0 (not a problem) to 10 (major problem) scale. The responses received the following weights: "major problem" = 10, "a problem" = 7, "somewhat a problem" = 4, "do not know" = 2, "not a problem at all" = 0.

major problem for many urbanites due to only periodic visitation of their plots and their frequent absences — is still even of greater concern to rural residents, reflecting, in part, the degree of social distress in the village and, in part, a social mechanism for avoiding economic inequalities (see more in Paxson 2005).

It is also noteworthy that the problems that received the lowest scores of 3.0 and under are all of the kind that are within the gardeners' control, and reflect their readiness to come up with the resources needed to engage in the practice. For this reason, lack of funds or transportation, or planting material, or land is not seen as an issue by the majority of gardeners, either urban or rural.

Conclusions

Results of this study show that household gardens play an important role in the agriculture, economy, and social life of the Vladimir oblast. Household gardening presents itself as a highly diverse and sustainable practice that involves households of all income levels, both urbanites and villagers, and performs a wide range of functions of which food production is but one. The long-term commitment that households make to their gardens does not allow the gardening practice to be viewed as a temporal response to poverty, economic hardships or food insecurity, even though gardens do help to alleviate all three.

Residents of the Vladimir oblast attach a wide range of cultural values to gardening and agriculture at large, which — together with the economic and social traits of food gardening — allows us to see today's practice of self-provisioning as a continuation of the long-standing tradition of peasant living.

With these understandings we will now proceed to a discussion of the implications of these findings for science and policy.

CHAPTER 3

THE INVISIBLE GARDENS

The twentieth-century Russia saw wars, revolutions, repression, and famine; it was ruled by tsars, commissars, and presidents; it was orthodox and atheist, totalitarian and "democratic"; it was feudal, capitalist, socialist, and capitalist again. All these calamities and sea-change transformations left a deep imprint on its land and its people.

In particular, the past century witnessed a large-scale "unsettling of Russia". In 1914, only 18% of the country's population lived in cities (Pavlovskii 1930). Today, less than a century later, this share has risen to 73% (Rosstat 2007b). However, the transition towards an industrialized and urbanized state has remained incomplete, as urbanites have maintained a close connection to their soil. Today, the majority of Russia's population continue to tend their food gardens. According to my research, in the Vladimir region of central Russia, 95% of families either have their own garden or benefit from the gardens of others.

Likewise, the agrarian *tradition* is very much alive, and gardening and agriculture have retained — apart from their economic importance — a great cultural significance.

What are the implications of these findings for policy and research? What recommendations can be made? I approach these two questions with a degree of caution, since different conclusions may be drawn from the same observations. For instance, those who espouse the idea of free markets and capitalistic competition as the greatest good may continue to see the tradition of self-provisioning as an obstacle to "progress" — an obstacle to be removed or surmounted, while others will seek to understand it and harmonize policies

and development efforts with their unique cultural context. In any event, the practice of household gardening and its economic, social, and cultural significance can no longer be ignored, if the true purpose of economic policy is the welfare of people, and not just "interests of the trade" or "economic growth." Therefore, I can summarize the implications of my research in the following four points:

1. Russia's family agriculture needs to be acknowledged, researched, and understood. This is a tradition that has persisted for over a millennium and survived, unshattered, through both feudalism and communism. It deserves at least as much attention as the "official" agriculture, if an agricultural system optimal for Russia's conditions is to be developed.
2. The development of household gardening, and agriculture in general, depends to a large degree on the resolution of the question of land ownership, which has remained unresolved and plagued the country for the past one thousand years.
3. The inquiry into household gardening cannot be limited to its economic dimension, since its social and cultural function may be just as important. A path for its future development will not become apparent until all aspects of the practice are fully taken into account.
4. The example of Russia's household gardening can inform agricultural policy, research, and agricultural entrepreneurship in other countries, both developing and industrially developed, including the United States. Many aspects of Russia's experience can be beneficially applied elsewhere.

I will now briefly discuss these four points, in the above order.

"Stretch your brains"

An early Soviet propaganda poster of 1920 invited the peasants to "stretch their brains" and decide what they wanted to do with their food "surplus": give it to the fledgling Soviet republic, or use it to support "the old regime". That peasants might prefer to use the "surplus" to support their own families and homesteads was not even offered as an option! Actually, a careful examination of the poster reveals that even "support of the old regime" was hardly viewed as a choice either. As another poster made it clear (Figure 35), a failure to "honestly" surrender part of the harvest to armed grain requisition squads was punishable by confiscation of the peasant family's landholdings and by incarceration. In reality, being declared "a foe of the Revolution" in the time of the Civil War or afterwards often meant forced deportation or even physical annihilation, as innumerable peasant families were doomed to discover from their own experience (Lih 1990).

Such propaganda tools speak of an extremely narrow approach to agriculture adopted by the Soviet authorities. It was hardly different from the era of serfdom, when the peasantry was seen as a force to be subdued and a resource to be exploited (Fitzpatrick 1994). The broader meaning of agriculture and development opportunities emerging from support to, rather than oppression of, the peasantry were thus rarely within the focus of the state's attention.

This attitude of disregard for self-provisioning and a self-sufficiency lifestyle has persisted to the present day. As a result, agricultural policy cannot even envision an agricultural development scheme that would not be based on support to large-scale industrial producers and the increased commercialization of whatever "surplus" household gardens may produce.

Figure 35. “Choose a happier lot — surrender your grain!” A Soviet propaganda poster, the early 1920s. This seemingly idyllic scene features a receding armed convoy under red banners, hauling confiscated grain.

However, we have a millennial record of failures, throughout most of the Russian territory, of agriculture geared towards surplus production. With the exception of several regions endowed with warmer climate and extremely fertile "black soils," surplus-geared agricultural operations seem to be so inefficient that throughout history, they have only been able to persist on the basis of coercion and slave labor, and agricultural surplus could not be extracted without use of force (Paxson 2005).

For a thousand years now, this approach to agriculture has produced political turmoil, human suffering, and environmental degradation. Those who advocated a different course, perished. But is it not time that we "stretched our brains" and learned from the past mistakes? If past organizations of agriculture fomented conflict and war, should not we strive to remove their causes instead of trying to re-create the same old system? It would seem, however, that the recognition of the true significance of gardening is still a very remote prospect.

In a study on Russia's food security Sedik, Sotnikov, and Wiesmann (2003:93) arrive at the following conclusion: "Although 'food security' has been used as a justification for protectionist agricultural practices and support for [large, industrial] producers, we found no evidence that such policies improved actual food security in the Russian Federation."

In the light of the findings presented in the previous chapters, such a "paradoxical" conclusion is hardly surprising. Government agricultural policies continue to focus on the official, industrial agricultural sector, ignoring the *primary* sector of Russia's agriculture — that of household gardens. As we have seen in Chapter 1, despite government expenditure and support for the industrial sector, its share in Russia's agricultural output has been steadily decreasing, while, at the same time, the role of family gardens has been growing without any support from the state. In the light of both Russia's century-old agrarian tradition and present-day statistics, family gardens appear to be a very efficient and sustainable mode of

food production. Even the proponents of market-oriented reforms cannot fail to recognize that "the most important safety net of the Russian population against poverty and food insecurity is private garden-plots" and to call for a removal of "any remaining administrative barriers to the expansion of private [garden] plots" (Sedik, Sotnikov, and Wiesmann 2003:94–95).

These policy prescriptions, however, are far from being followed in real life. For example, Russia's "Food Security Act" defines food security as "the ability of *industrial* agriculture to satisfy food requirement of the nation" (emphasis added), which is in complete disconnect with the real state of affairs in the Russian economy. Most policy documents equate *agriculture* with *industrial agriculture* (the "agro-industrial complex" in the official jargon), as if the tens of millions of household producers did not exist. In the vast bureaucracy of Russia's Ministry of Agriculture, only one section is charged with tasks related to household gardening. Even the widely publicized "National Project" for the development of agriculture (personally supervised since 2006 by Dmitry Medvedev, now Russia's president) is geared towards the development of *industrial* farming, and the only measure within the Project related to private plots is encouraging development of cooperatives so as to increase the commercialization of household output.

It would seem that if a transition from the current steady-state (that of the prevalence of self-provisioning and micro-scale food production) to a new steady-state (that based on markets and industrial farming) was indeed for some reason desirable, a thorough analysis and discussion would be required to determine just why the current situation is unacceptable and what greater benefits the new system would offer, especially in the light of available evidence suggesting that household gardening indeed offers very substantial economic, social, environmental, and cultural advantages.

However, the idea that micro-scale agriculture should be preserved, encouraged, and turned into the backbone of Russia's agriculture (or even just coexist with industrial farming) is *not* part of the agricultural policy debate. Rather, the course away from subsistence economy and toward the "free market" is viewed as a given, and researchers are only debating the details and mechanisms of this transition. Some scholars go as far as to suggest that only "market compatible" producers will now be "viable" in Russia's new economic conditions (O'Brien and Patsiorkovski 2006), seemingly ignoring the fact that the "non-market compatible" enterprises have somehow managed to persist for over a thousand years of Russian history.

The Russian agrarian tradition, however, is so important that even the academic or political proponents of capitalist agriculture cannot fully ignore it. Instead, they now treat the millennia-old tradition of self-reliance as an "opposition to change," an obstacle in the way of market reforms (O'Brien and Wegren 2002). In that they are not very different from the colonialist ideology of Schweitzer (1923), who viewed the destruction of the traditional culture essential for the imposition of the new order.

The focus on the market is so great that even the intellectual heritage of Russia's agrarian thinkers of the past, such as the early twentieth century land reformer Petr Stolypin (who promoted independent homesteading) and agricultural economist Alexander Chaianov (who maintained that peasant household production was motivated by subsistence needs and not by market conditions, and that it was more efficient than large-scale farming) is often called upon only insofar as it fits into the "free market" paradigm. Even though in the early 1990s it seemed as though many of their ideas were coming back to life (Van Atta 1993), they found only a very limited reflection in policy. For instance, the Chaianov theory of peasant cooperatives (1991) is now used in today's government efforts to boost

marketization of agricultural production from private plots. At the same time Chaianov's emphasis on the greater efficiency of the small-scale family operation of the peasant household over large-scale enterprises, as well as on the subsistence character of production, is conveniently ignored.

Attitudes towards household production are not just a matter of ideological differences, but have a very tangible practical dimension. If the practice of household gardening is not fully understood, this may result in uninformed or ineffectual policies.

For instance, the National Project for the development of industrial agriculture provided, in 2006–2007, 13.75 billion rubles (approx. 500 million U.S. dollars) for efforts to increase the volume of produce marketed by small farmers and private plot holders by mere 6% in comparison with 2005 (Ministerstvo sel'skogo khoziaistva Rossiiskoi Federatsii 2008). These measures include the creation or development of a network of cooperatives to market the output from household and small farming operations. Is this policy likely to be effective? The results of my survey raise two primary issues in this respect.

First, in the Vladimir region, 48% of gardening households who sold part of their harvest in 2006 stated that the amount of products they sell has increased over the past five years, and 35% estimated that their sales volume would further increase over the next five years. This suggests that at least in the Vladimir region, there already seems to be a trend toward a growing commercialization of gardens' output, and the government's target of a 6% growth over a two-year period could actually be achieved without any intervention or expenditure.

Second and more importantly, the results of my survey from the Vladimir region show that households who market part of their produce rely on *direct sales to the customer*. Only 16% of sellers used wholesale channels for marketing their produce.

This observation has important implications. Direct sales to the customer have multiple benefits: producers are able to capture the full market price for their outputs, maximizing their margin, and customers gain access to fresh, locally produced foodstuffs. In this context of established (albeit often informal) direct producer-consumer marketing channels, the prospect of using an intermediary for marketing the output is not likely to appeal to the majority of producers (since this would erode their margins). Nor will it appeal to the consumers who may be buying directly from the producer exactly on the account of freshness and known origin of their products. It would therefore seem that in the Vladimir region, at least, both producers and consumers would be much more receptive to the efforts of promoting further growth of direct sales to customer, rather than the idea of introduction of intermediaries. The move for a more centralized processing of vegetables seems to be a legacy of the Soviet policy, which lacked efficiency during the Soviet times (see Figure 36) — and there seems to be little guarantee that if such system is re-created, it would not suffer from the same flaws.

Consequently, in the Vladimir region, the government's policy of encouraging produce sales through cooperatives may not appeal to the majority of household gardeners. However, the alternative of encouraging direct-to-customer sales (on which sellers currently rely) does not constitute part of the "top priority" government program. This ineffective programming seems to stem from lack of a genuine understanding of how households grow and market their produce, as well as from continued adherence to policy approaches that need to be revised to meet present-day needs.

Indeed, the theory of cooperation first developed by Chaianov (1991) in the 1910s and 1920s was based on the marketing of such commodities as grain and flax, rather than vegetables and fruit (which form the bulk of gardeners' output today). Besides, in the time

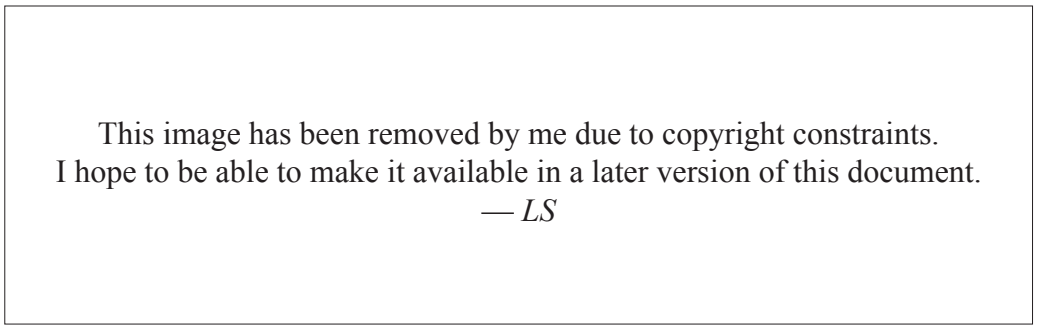


Figure 36. “Turnip.” A satirical 1979 Soviet poster depicting the problems of a centralized vegetable distribution chain, resulting in a loss of quality in the final product. Published in 1979 by Khusozhnik RSFSR publishers, art by M. Belomlinskii, poem by V. Suslov.

of Chaianov the vast majority of Russia's population lived in the countryside, and urban markets were limited. Today, conditions have changed and, as we have seen, household producers sell their products directly to the customer.

That these important changes are not reflected in today's policies suggests that agricultural cooperation continues to be viewed (as during the first decade of Soviet Russia) as a means of extracting agricultural surplus from the producer (see Figure 37). Therefore, the policy is based on the "interests of the trade" rather than on a concern for the welfare of the household producer.

As noted above, government market-oriented reforms proceed on the assumption that these will result in higher economic efficiency, higher productivity, higher consumption standards, and greater welfare. However, as Paxson (2005) aptly observed, it is exactly the *independence* of villagers from the monetary market economy that insulates them from many a crisis in contemporary Russia. Moreover, the histories of both America (Berry 1996; Friedland 2002; Goldschmit 1947) and Russia suggest that large-scale, industrial agriculture does not seem to be able to assure high levels of production without the unsustainable use of natural resources, along with often dire social, environmental, and cultural consequences.

It should be emphasized that present day Russia possesses a unique micro-scale food production and self-provisioning system, which offers multiple benefits beyond food production per se. Effectual policies should be based on a thorough study and detailed understanding of this mode of production, and advice based on Western agricultural experience and neo-classical economics may have limited applicability.

It should further be noted that there actually seems to be no conflict between Russia's family agriculture and its "official" agriculture. Both occupy distinct niches and perform distinct functions. Family agriculture concentrates on vegetables and perennial crops

Figure 37. Two Soviet propaganda posters from the 1920s, promising peasants wealth and prosperity through cooperation. In reality, however, this was a means of extracting grain from the countryside — a means soon to be replaced by coercive collectivization.

(including fruits and berries), while industrial agriculture is predominantly devoted to annual crops for further industrial processing such as grains, flax, sugar beets, sunflowers, etc. Due to the specificity of family gardens crops (e.g., the requirement for freshness and high variety — as with greens and berries, or an extended crop growing cycle — as with perennial trees), industrial farming finds it difficult to compete with gardens. Gardeners, however, are very unlikely to present any competition for industrial farming in grain production even if households acquired somewhat larger land plots. This calls for research and policies that would honor both sectors' advantages and limitations and adopt a holistic approach to agricultural and rural development.

Likewise, the economy of subsistence and sharing seems to be in no conflict with the market economy. Previous studies (Clarke et al. 1999) and this study have found that household food production does *not* affect household's monetary expenditure on food purchases.

Finally, the distinction between production and consumption in Russia's household agriculture is blurred, since many consumers consume what they themselves have produced, which calls for analytical tools very different from conventional agricultural economics.

But before any policies can become effective, Russia requires the resolution of the key issue of *land ownership* — the question that has plagued the country for the past one thousand years and which is still not resolved.

"There is no freedom without land"

Under Russia's new constitution of 1993, citizens were granted the right to purchase land for their private ownership. This created a lot of excitement and discussion in my family.

And only my grandmother, who — like the donkey Benjamin in Orwell's *Animal Farm* (1946) — was old enough to know better, objected in bewilderment: "How come we are supposed to *buy* land? It was *ours* already!"

She told us about her childhood on her family homestead, or *khutor*, in north-eastern Belarus. Having obtained a piece of seemingly worthless land during Stolypin's land reforms of the 1900s, her father established a flourishing and amazingly self-sufficient farm. They built a log hut (*izba*), planted a garden, tilled the soil, and tended their small grove of trees, growing and producing everything from their own flour to smoked bacon, from apples to cheeses, from firewood to textile, and having a surplus left for the market.

In 1940, the homestead was confiscated by the Soviet authorities. My great-grandfather, sick at the time, was carried out of his house right on his bed and could watch as his home which he had himself built and where his children had been born was dismantled log by log, loaded onto carts to be transported to the nearest kolkhoz village, where it was assembled. Unable to recover from the blow, my great-grandfather died the same year, followed by my great-grandmother shortly thereafter. Returning to the site of the *khutor* in the 1950s, my grandmother found not a trace of the formerly flourishing homestead, and could only establish the exact location by some natural landmarks.

The cruelties of Stalin's forced collectivization were by no means the first in Russia's history. My grandmother's own grandmother could remember the social unrest that followed the "emancipation of serfs" in 1861, when the peasantry was declared "free" but was put under an obligation to buy out their lands from their landlords — the same ancestral lands that the aristocracy had appropriated from the peasantry over the preceding centuries.

Ever since the concept of land ownership was introduced by the princes a millennium earlier, and to the present day, the issue of the legitimacy of the state's and elites' ownership

claims over what was once people's ancestral grounds has remained unresolved. The depth of this conflict and its emotional charge is well expressed by a popular Russian writer Vladimir Megré (2007:255–256). A prisoner by the name of Kharlamych files a request to *extend* his sentence in the correctional facility where he is allowed to tend his own garden-plot. He is asked to explain his highly unusual request: "And who's stopping you from going free, getting a piece of land and creating the same kind of homestead that you have here, only as a free man?" — to which he replies:

> "You know, Chairman, sir, that's something I'll never understand. Who's stopping us here in Russia from giving each Russian a hectare of land? I'll never understand. Does Russian land belong to Russians or not? ... And what if I don't have the money even to buy a single hectare of land? Does that mean I have no Motherland? That's the way it looks — I don't have it and never will have. But if Russia is my Motherland, just who am I supposed to buy it from? It turns out somebody's seized my Motherland for themselves — the whole country, down to a single hectare — and is now demanding a ransom from every last Russian! There's some monkey business going on here. Beyond the law and beyond our understanding."

Kharlamych concludes that "out there [*outside* the prison walls] there's no freedom... There's no freedom without land." The first print-run of this book by Megré (in its original Russian) was over 300,000 copies, which suggests that Kharlamych is not alone to share the sentiment.

Indeed, under the current Russian legislation, agricultural and settlement lands — even the lands to which private individuals have a property title — continue to be de facto controlled by the state. According to Article 284 of Russia's Civil Code, land title can be revoked from the owner if the land is not used in accordance with its "designation," i.e., agricultural lands can be used only for agricultural production and nothing else, forest lands — only for forestry, etc. These stringent restrictions make possible very broad

interpretations and very different applications of the law, which makes land ownership very vulnerable. For instance, planting "non-agricultural" trees on agricultural land, leaving agricultural land fallow for a number of years, or erecting "non-agricultural" structures on agricultural lands — all these practices may be interpreted as a failure to use the land in accordance with its designation and can subject the landowner to significant legal jeopardy and possible title revocation. Landowners and government authorities may have different interpretations of the "allowed use," which generates conflicts. Thus, in the Vladimir region, a group of local residents who erected barns for storing tools and harvest on their agricultural lands were prosecuted by local authorities, who classified the barns as "dwellings" and determined that they represented a violation of the permitted land use (Pedan 2008).

Moreover, Russian law contains multiple provisions under which private landholdings can be legally appropriated by the state for governmental needs, in the interests of national security, etc., even when no violations of "allowed use" exist. In September 2007, under the pretext of preparing for 2014 Winter Olympics in Sochi in southern Russia, President Putin's party *Edinaia Rossiia* introduced into the Russian parliament a bill to further simplify the procedure for land expropriation for government needs and to reduce the time of the notice of expropriation to just 30 days (down from the 1 year now required by law). The bill generated significant controversy and was subsequently reworked to "protect the rights of property owners." It was narrowed in scope to just one region, yet it confirms that the interests of the state continue to be viewed as taking precedence over those of citizens. It is therefore not surprising that in a public opinion poll with 1,600 respondents throughout Russia, conducted in 2007, only 4% of respondents said they felt private property was sufficiently well protected (Levada-tsentr 2007).

In addition, there is a growing concern among dacha gardeners over the growing fiscal pressure and the escalation of fees, especially in the light of a law on "dacha amnesty," which requires dachniks (even those *with* property title paperwork) to re-register their plots and structures, at a significant expense of time and money. In describing the procedure, it is not uncommon for journalists to use the word "ransom" (Shchelkunova 2007).

The uncertainty associated with lack of protection of property rights is not just an abstract legal matter. It regularly takes the form of overtly or covertly brutal conflicts such as the one in Iuzhnoe Butovo, a village south of Moscow (Figure 38). In the summer of

Figure 38. The sprawling city of Moscow advances towards nearby villages.

2006, authorities used special-task police troops to remove rural residents from their homes that were expropriated to make way for urban development. At the height of the conflict, Moscow's mayor Luzhkov accused villagers of "stinginess" — the villagers who were not willing to "exchange" their family homes with gardens for the studio apartments they were offered. It is noteworthy that while the authorities saw the whole issue as an argument over the amount of compensation, the arguments of the villagers were of a quite different nature: they were refusing to move because this was their *native land*, which the state had no legitimate right to take.

Equally tellingly, during President Putin's major Internet conference on July 6, 2006, over 10,000 conference participants asked or voted for questions specifically dealing with the allocation of at least 1 ha of land for family homesteads (compare with prisoner Kharlamych above). The seven most popular questions on the topic of agriculture (which the government declares to be a high priority) were *all* about the allocation of land for family homesteads. President Putin chose to answer a wide variety of questions (including, for example, "At what age did you first have sexual intercourse?") but not a single question on family homesteads. Four days later, Russia's leading business journal *Expert* commented that this particular Internet conference served as a good indication of the most burning issues in Russian society today, and observed that the land question was among them.

When asked the same question in a March 2007 Internet conference, Dmitry Medvedev (then a deputy prime minister and today Russia's president) responded that the idea of family domains was in accord with government's own priorities, yet 1 ha per family may be too much, and added that 0.25 ha plots could now be *purchased* from the authorities in a particular region. Medvedev is now also reported to champion legislation that would allow use of lands (including government-owned lands) as collateral for bank loans — something

that could result in a wholesale transfer of land ownership into the hands of the country's financial elite.

The desire of Russian citizens to have larger and more permanent landholdings recognized by the government is apparent in the results of the 2006 Census of Agriculture. Thus, in 2006 Russia had 947,300 private plots 1 ha and larger in size (Rosstat 2007a). However, even these relatively larger plots cannot be used to create a real homestead, since — being classified as "agricultural" — no erection of dwellings is allowed on these plots.

For a thousand years now conflicts over land ownership have fomented uprisings and peasant wars, which have been cruelly suppressed. The current uncertainty over the land question continues to brew conflict, which, for now, takes the form of demonstrations of protest, refusals to comply with court expropriation decisions, letters to the president, and lawsuits against government officials. But already citizens are expressing readiness to defend their plots of land "to the last drop of blood," with axes and hay-forks in their hands, from government encroachment (Evropeisko-aziatskie novosti 2007).

Until the question of land ownership is resolved, the legal status of garden-plots is solidified, and restrictions on the size and the creation of peasant-like homesteads on agricultural lands are lifted, we will likely witness the exacerbation of related conflicts for many years to come. These restrictions, to a large degree, are a legacy of the Soviet, and even pre-1917, land-use patterns, when the peasants lived in villages but tilled — whatever land they had — outside village limits. There seems to be no reason (other than the deliberate impediment of rural development) to preserve these restrictions today.

"The bewitching lure" of home gardens

On February 5, 2008, Canada's national newspaper, *The Globe and Mail*, published an article by Jane Armstrong, entitled "The bewitching lure of home-grown cults." This article is largely devoted to Russian spiritual leaders whose ideas or actions do not conform to the religious norms of the Russian Orthodox Church, and who appeal to their followers to "live a simple, rural life." It also refers to what the writer calls "one of Russia's largest spiritual movements," known as Anastasia, the "troubling mysticism" of which consists of people buying rural plots of land to create self-sufficient homesteads. At first glance, the equating of family gardening and homesteading with "spiritual misadventures" is strange, yet such an attitude has both a historic precedent and a logical explanation.

As we saw in Chapter 1, ever since the introduction of the princely rule and Christianity in Rus' in the 9th century, both civil authorities and the church have endeavored to subvert the traditional subsistence lifestyle and to eradicate ancient Slavic beliefs and customs. These attempts have never been fully successful, and important elements of the pre-Christian Slavic tradition have survived to the present day (Figure 39).

One of the central concepts of the pagan Slavic worldview — and one of great relevance to agriculture — is that of *resurrection*, as evidenced in the rebirth of nature each spring. The awakening of Earth's nature (the feminine element) is closely linked to the growing power of the Sun-god *Ra* or *Iarilo* (the masculine element). The union of the two brings forth fertility, on which depends all life. In the ancient Slavic calendar one day each week — *Sun-day* — was therefore reserved for the celebration of rebirth. To the present day the Russian word for "Sunday" — *voskresen'e* — literally means *resurrection*. The concept was personified in the figure of the goddess of spring, Lelia, who later came to

be known by the name of *Anastasia* (which means "resurrection" in Greek), and who was denounced by Christian chroniclers as early as in the 12th century (Rybakov 1987).

In 1996, Russian entrepreneur Vladimir Megré published his first book *Anastasia* (Megré 2005), which, together with its sequels, now forms a nine-volume Ringing Cedars of Russia series (known as the Ringing Cedars Series in the English translation). Megré's books advocate a return to the land and rural living as consistent with Russia's traditional millennia-old lifestyle and the economic, social, cultural, and spiritual needs of human nature. They also promote greater environmental awareness and a realization of the significance of trees and non-timber tree products in the creation of self-sufficient homesteads.

Figure 39. Moscow residents burn a straw figure representing the winter, in a course of a yearly pagan festival *Maslenitsa* celebrating the coming of the spring. Year 2006.

Following in the footsteps of Chaianov's *Voyage of my brother Alexei...* (Kremnev 1920), the Ringing Cedars Series presents a holistic philosophy of a harmonious relationship between humanity and nature and proposes a model of economic organization based on a decentralized national economy comprised of sustainable rural settlements that are in turn composed of individual family-owned homesteads ("family domains," *rodovoe pomest'e*). The Series, reported to have sold over 10 million copies in Russia, was met with a powerful societal response and sparked a fast-growing eco-village movement by the same name (Medikov 2003). Prior to the publication of the first book in the series in 1996, there were virtually no eco-villages. By June 5, 2004, a conference of the Ringing Cedars of Russia Movement in the city of Vladimir, Russia, attracted delegates from over 150 eco-villages scattered across 48 of the 89 regions of Russia (Sharashkin, Gold, and Barham 2005).

The eco-village movement, while growing out of the dacha movement and sharing many of its traits, is also different in a number of important characteristics. For example, while the typical size of a dacha plot is 0.06 ha, and the average size of a subsidiary plot is 0.5 ha, Megré advocates family homesteads at least 1 ha in size. This larger size is warranted by the aspiration to integrate a human habitat with an agroecosystem, and — by growing a wide variety of crops and trees and taking advantage of other opportunities such as agritourism — to create a self-reliant land-based household, approaching self-sufficiency not only in food, but also in technical crops (e.g., flax, sunflower, etc.), timber, firewood, medicinal plants, and other products. Megré observed that if dacha gardeners could be so productive working only part-time on their minuscule garden-plots, then full-time cultivation of larger plots of land with application of permaculture techniques could turn household agriculture into the backbone of the national economy (Megré 2006b).

In the vision of Megré and the new eco-village settlers, each family domain should be surrounded by a multi-species windbreak and represent a multi-layer perennial polyculture system with a wide variety of plants, both herbaceous and woody (Figure 40).

As an example of the potential long-run sustainability and productivity of such permaculture systems, Megré cites 19th century agroforestry practices in central Russia. In *Who are we?* (Megré 2006b) he describes "an eternal garden," a 100-year-old-plus system of apple orchards surrounded by windbreaks of *Pinus sibirica* in the Vladimir region, some 200 km east of Moscow. The local residents report that with no fertilization or maintenance these orchards, abandoned shortly after the revolution of 1917, are now still producing better crops and better-tasting apples than the carefully tended trees in the nearby villages.

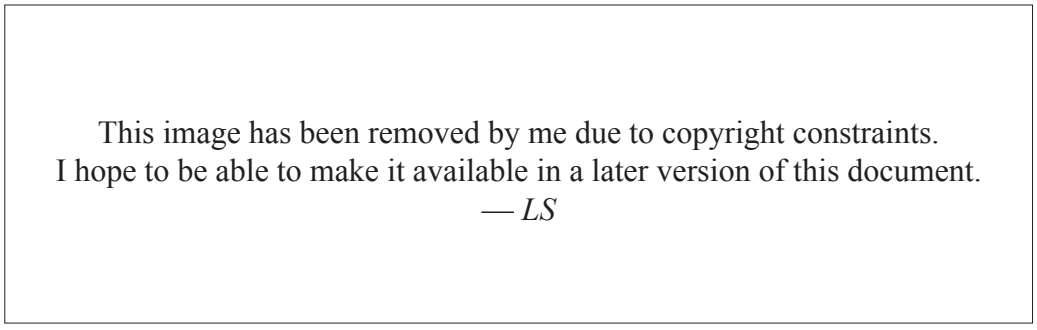


Figure 40. A family domain concept integrating a human habitat with a diverse agroecosystem. Drawing by Irina Labuntsova, Zapolianie eco-village.

The orchards also provide high-quality hay. The exceptionally cold winter of 1976, which killed most fruit trees in this region, did no damage to the windbreak-protected orchards (Megré 2006b). The book includes color photographs of the windbreak and the orchard with fruit-laden trees (Figure 41).

Megré also used this example of the "garden for eternity" to illustrate his proposition that agricultural productivity and sustainability depend more on a gardener's creativity and understanding of nature than on the amount of labor employed. In his vision, a properly designed agroecosystem would be self-sustaining and productive with minimal inputs of labor and other resources.

Megré also suggests that maintaining contact with one's own piece of land and establishing a circular flow of matter, energy, and information between each family and their family domain's ecosystem is important for both physical and psychological well-being. The shared goals of eco-villagers also include stewardship over local natural resources and a commitment to creating a social organization conducive to independent, economically secure, socially rich, and personally rewarding lifestyles.

Like Chaianov some eighty years earlier (Kremnev 1920), Megré put forth his own ideas in a novel-like format. He himself admits that this strategy was to minimize resistance to his writings until they were widely circulated (Megré 2006a).

This cautious approach turned out to be well justified, as Megré, his books, and the participants in the eco-village movement have become targets of a concerted smear campaign in Russian mass media. For example, in October 2006, a central Russian daily newspaper with a circulation of 1.6 million featured an article (subsequently reprinted in other editions throughout the country and abroad) claiming that the "destructive" behavior of the back-to-the-landers had reached the point of them feeding their children to wild animals

Figure 41. A maintenance-free apple orchard in the Vladimir region of Russia. Photos courtesy of Alexey Kondaurov, 2004.

and copulating on tombstones — all allegedly at Megré's instigation. Interestingly, centuries earlier Christian chroniclers were similarly alleging that pagans were offering human sacrifices and were engaging in public orgies. Despite the separation of church and state guaranteed by Russian constitution, in a number of regions local dioceses of the Russian Orthodox Church have successfully lobbied against the allocation of land for family homesteads, and in the Vladimir region a Council on religious and nationality matters, led by the region's vice-governor Sergei Martynov, has adopted a set of "recommendations" for local administrations "to take appropriate measures" in respect to the hundreds of families setting up their family domains in the region's countryside. Apparently acting on these recommendations, local authorities revoked their decision to grant settlement status to the eco-villages. Some eco-villagers responded by filing a series of lawsuits against the authorities, including the region's governor (Pedan 2008).

It is not surprising that positive developments such as Russia's family domain movement have been labeled a "dangerous cult," and met with opposition, in unison with the medieval Christian censures of paganism cited in Chapter 1. As noted in Chapter 1, it has been a millennia-old tradition for the Russian people to view land as their mother (*zemlia-matushka*), and ethnographers have recognized in peasant customs up to the present day both the worship of nature and the remnants of a totemic culture based on the concept of a kinship between mankind and trees (Zelenin 1937). This continuity and the persistence of ancient traditions and beliefs (and resistance thereto) up to the 20th century was recognized — among many others — by such luminaries as Russia's prominent agricultural economist Alexander Chaianov, the pioneer soil scientist Vasilii Dokuchaev, the writer Leo Tolstoy, ethnographer Dmitrii Zelenin, studying spiritual aspects of peasant culture, and archeologist Boris Rybakov, a student of Slavic paganism.

Thus, Vasilii Dokuchaev, after decades of soil science research, argued that agronomy and natural sciences should start to incorporate spirituality into their inquiry (Dokuchaev 1951:399):

> [The science] has been studying *separate* objects — minerals, rocks, plants and animals, as well as *separate* phenomena and elements — *fire* (volcanism), *water*, *earth*, *air* — and therein science has achieved wonderful results. But science has largely ignored their *relationships* — the *genetic*, *primordial* relationship *conformant to natural laws* — the relationship between the *forces*, *objects, and phenomena*, between *inanimate* and *living* nature, between the plant, animal, and mineral kingdoms on one the hand and man, his lifestyle, and even his spiritual world on the other.

Echoing Dokuchaev, E.F. Schumacher (1975) wrote:

> In the simple question of how we treat the land, next to people our most precious resource, our entire way of life is involved, and before our policies with regard to the land will really be changed, there will have to be a great deal of philosophical, not to say religious, change.

As we have seen, cultural values play a prominent role in household gardening. Recent developments such as the Ringing Cedars eco-village movement with its agenda of fully incorporating economic, agricultural, social, and spiritual considerations into the design of human settlements integrated with agroecosystems, also point to the continued prominence of cultural values in Russia's agriculture. This prominence needs to be acknowledged, studied and given consideration in policy and sciences alike. Otherwise both policy and science will continue to suffer from the biases deplored by Dokuchaev more than a century ago.

Russia has 18.8 million acres of family gardens, which produce US$14 billion worth of products per year, equivalent to over 50% of Russia's agricultural output, or 2.3% of the country's GDP (Rosstat 2007b). The United States, on the other hand, have 27.6 million acres of lawn, which produce a US$30 billion per year lawn care industry (Bormann, Balmori, and Geballe 2001).

In the Vladimir region of Russia, gardeners spend, on average, 17 hrs per week (during the growing season) tending their gardens. Surveys from other regions (Clarke et al. 1999) offer similar results. By comparison, Americans, on average, spend 32 hrs per week watching television (Nielsen Media Group 2006).

In Russia, the national statistics agency collects and publishes volumes of data on family gardens. In the U.S., the output of backyard food gardens and community gardens is not accounted for nor is included in the agricultural statistics of the U.S. Department of Agriculture.

This list of vast economic, social, and cultural differences between Russia and America could continue. However, there is striking similarity in how — during the times of hardship — Russians, Americans, and people of other Western countries suddenly recall where their food is coming from and turn to their local soil for subsistence. The so-called "victory gardens" in the U.S. or UK during both WWI and WWII look extremely similar to their Russian counterparts. Both in the U.S. and in Russia during the 1930s and '40s, food gardens were viewed as important parts of national policy (Figure 42).

During the times of the Great Depression, 23 million American households tended food gardens (Lawson 2005). Even though these numbers dwindled after the end of WWII,

Figure 42. “Dig for victory now!” An American WWII victory garden poster.

thousands of community gardens, along with an unknown number of backyard gardeners, continue to produce food to the present day (Figure 43), and are reported to offer multiple other benefits.

Thus, for example, food gardening in the U.S. is reported to make an important contribution to household food budgets, especially in depressed neighborhoods of inner cities — the same neighborhoods that have very limited access to retail grocery outlets (since major retailers had abandoned the inner cities). One study has found that 27% of people living in South-Central Los Angeles "did not have money to buy food," while charitable food distribution networks were overwhelmed (Ashman 1993). In this context community gardens contributed to the food security of neighborhood residents, provided important vegetable contributions to their diet that were not otherwise available, and offered $600 in savings on food purchases per household per growing season (Ashman 1993). In another study (Patel 1991) it was found that 35% of the surveyed participants in the New Jersey Urban Gardening Program reported better diets, and 34% — money saving due to harvests.

As indicated earlier, no statistics are gathered nor published in the U.S. on the contribution of food gardens to the nation's food economy. In the 1990s, the National Gardening Association estimated the amount of food grown by households outside the cash food economy to be up to $18 billion per year (Dahlberg 1994), but this estimate was based on the analysis of sales of seeds of food plants to individuals, and may not be very reliable.

The benefits of food gardening, however, are not limited to the production of foodstuffs, and, as discussed in Chapter 1, American sources highlight the same range of benefits as in Russia, including economic (increased food security and small-scale development through the sale of surplus products), social (creating a better sense of community and greater social interaction for growers), personal (serving as a means of maintaining urbanites'

Figure 43. A community garden near downtown Minneapolis, 2005.

connection to nature), and health (improving the quality and availability of the food supply and involving gardeners in beneficial physical activities).

The example of Russian family agriculture is also of great relevance to the broader policy issues surrounding American agriculture. Industrial agriculture in the U.S. is faced with a wide range of exacerbating problems: high energy demands and dependence on imported petroleum, dependence on government subsidies, environmental degradation, social injustice, and many others. In this context, more and more farmers, researchers, policy makers, and members of the public are on the outlook for more sustainable, smaller scale, environmentally- and community-friendly food production alternatives. To them, the Russian example will offer a valuable perspective on a highly decentralized, highly productive and self-sustaining, multi-crop food production and distribution system providing a wide range of economic, social, environmental, and cultural benefits, while requiring a minimum amount of land and natural resources.

Until recently in the U.S., food growing was seen as the domain of farmers, but even this has started to change. Already land-grant universities have begun to develop highly productive micro-scale food-growing systems that can be used both in backyards and on small farms supplying urban areas (Ohio State University 2008). If American researchers, decision makers, farmers, and the public at large extend their attention to micro-scale growers, such as small organic farmers, backyard and community gardeners, other urban agriculturists, hobby farmers, and small acreage owners, this may result in the development of small-scale food production systems that will allow this country to alleviate its dependency on industrial farming and large commercial food distribution networks. For this, new multi-disciplinary partnerships are needed that would bring together individuals and groups working in areas as diverse as agroforestry, gardening and the gardening

industry, master gardener programs, permaculture, organic growing, social sciences and local foodsheds, food and nutrition sciences, health, community development and urban development, leisure studies and natural sciences, economics and agricultural economics, biodiversity conservation, and many others.

Russia's experience shows that food gardening even as a leisure activity can be highly beneficial and productive, and the development and encouragement of similar practices in the U.S. may offer similar benefits.

I would like to conclude with a quote from a famous Russian proponent of healthy living through closeness with nature, Porfirii Ivanov. He wrote: "Separate not your thought from your deeds. It's good that you've read this, but it would be much better if you *acted* on what you've read!" In my research, I have witnessed that many a Russian family do not diverge in their actions from their tradition-honored aspiration to live a good life in harmony with Mother Earth. Come spring, millions of hands touch the earth, and it sprouts billions of shoots. Today, as a thousand years ago, Russians "have their food from the earth." And the light flows on.

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APPENDIX

SURVEY QUESTIONNAIRE (ENGLISH TRANSLATION)

QUESTIONNAIRE NUMBER_____ INTERVIEWER'S NAME_____ INTERVIEW DATE _____

GARDEN-PLOT

1. OVER THE PAST 12 MONTHS, HAS YOUR HOUSEHOLD PROCURED FOODSTUFFS FROM OTHER HOUSEHOLDS THAT CULTIVATE A GARDEN-PLOT? *(show card №1, one answer)*
1 - yes, free of charge
2 - yes, we've been buying foodstuffs from other households
3 - yes, we've both been getting foodstuffs from other households for free and have been buying
4 - no
99 - do not know

2. DOES YOUR HOUSEHOLD USE ANY GARDEN-PLOT (E.G., DACHA, GARDEN, ALLOTMENT, ETC.)?
1 - yes**……..***go to question №6*
2 - no

3. WHY DO YOU NOT USE OR OWN ANY GARDEN-PLOT? *(show card №2, several answers allowed)*
1 - we do not need it
2 - we have no interest in it
3 - we have no time to garden
4 - we cannot garden due to health constraints
5 - we cannot obtain land for gardening
6 - we cannot afford to establish and maintain a garden
97 - other _____
99 - do not know

4. DID MEMBERS OF YOUR HOUSEHOLD HELP TEND SOMEBODY ELSE'S GARDEN, OVER THE PAST 12 MONTHS? *(card №3, one answer)*
1 - yes, occasionally (no more than 2–3 times per year)
2 - yes, regularly (roughly once per month)
3 - yes, often (more than once per month) ……*(ask question №5, then proceed to question №6)*
4 - no
99 - do not know

5. DID MEMBERS OF YOUR HOUSEHOLD SPEND TIME (VISITING, ON VACATION, ETC.) ON SOMEBODY ELSE'S GARDEN-PLOT, OVER THE PAST 12 MONTHS? *(card №3, one answer)*
1 - yes, occasionally (no more than 2–3 times per year) ..... *(go to question № 51)*
2 - yes, regularly (roughly once per month) ..... *(go to question №51)*
3 - yes, often (more than once per month) ……..*(go to question №6)*
4 - no ..... *(go to question №51)*
99 - do not know

6. HOW MANY GARDEN-PLOTS DO YOU OWN OR USE? *(one answer, card №4)*
1 - one
2 - two
3 - three
4 - more than three

7. HOW OFTEN DO YOU WORK OR SPEND TIME ON THESE GARDEN-PLOTS, OVER THE WARM SEASON?

	1st plot "PRIMARY":	**2nd plot:**	**3rd plot:**
"daily" or permanently live on the plot	1	1	1
"weekly" — 1–2 times per week or more	2	2	2
"monthly" — 1–2 times per month	3	3	3
less than once per month	4	4	4

ATTENTION INTERVIEWER: IF THE RESPONDENT USES MORE THAN 1 PLOT, QUESTIONS №8 – №13 RELATE TO ALL PLOTS TAKEN TOGETHER.

8. WHAT IS THE SIZE OF YOUR GARDEN-PLOTS, IN SOTKAS (1 SOTKA=100 SQ METERS)?
1 - 1st plot ("primary"): _____sotkas
2 - 2nd plot: _____sotkas
3 - 3rd plot: _____sotkas

9. IF YOU OWN OR USE MORE THAN 3 PLOTS, WHAT IS THE TOTAL SIZE OF ALL THE PLOTS PUT TOGETHER, IN SOTKAS? _____

10. OF THESE, HOW MANY SOTKAS HAVE BEEN USED FOR RAISING CROPS AND ANIMALS OVER THE PAST YEAR? _____

11. OVER THE PAST 5 YEARS, THE AREA YOU CULTIVATE HAS:
1 - remained the same
2 - increased by ____ sotkas
3 - decreased by _____ sotkas

12. IN YOUR OPINION, OVER THE NEXT 5 YEARS THE AREA YOU USE FOR GARDENING IS LIKELY TO:
1 - remain the same
2 - increase by ____ sotkas
3 - decrease by _____ sotkas

13. WHAT IS YOUR GARDEN-PLOT'S STATUS? *(card №5, one answer for each plot)*

	1st plot "PRIMARY":	**2nd plot:**	**3rd plot:**
a "garden" or "allotment" constituting part of a gardening cooperative	1	1	1
a "dacha" constituting part of a dacha settlement	2	2	2
a "personal subsidiary plot" (for rural residents)	3	3	3
a land plot in a village (owned by an urbanite and used as a dacha)	4	4	4

a farm	5	5	5
do not know	99	99	99
other _____	97	97	97

ATTENTION INTERVIEWER: QUESTIONS №14-№19 REFER TO THE "PRIMARY" PLOT, THE ONE USED MOST OFTEN.

14. WHAT FORM OF OWNERSHIP IS YOUR GARDEN-PLOT UNDER? *(card №6, one answer)*
1 - private property
2 - personal inheritable ownership
3 - short-term lease (less than 5-year term)
4 - long-term lease (5-year or longer term)
5 - state or municipal property
6 - we use a plot owned by other individuals (e.g., relatives)
97 - other_____
99 - do not know

15. HOW FAR IS YOUR GARDEN-PLOT FROM YOUR PRIMARY PLACE OF RESIDENCE?
1 - adjacent to the house
2 - within walking distance
3 - requires some sort of transportation to get to. Distance _____km

16. FOR HOW LONG HAVE YOU BEEN USING THIS PLOT?
1 - over 15 years
2 - 10 to 15 years
3 - 5 to 9 years
4 - less than 5 years
99 - do not know

17. HOW DID YOU ACQUIRE THIS PLOT? *(card №7, one answer)*
1 - inherited it
2 - bought unimproved land
3 - bought an existing garden
4 - obtained a plot from an enterprise or from a local administration
5 - we use a plot belonging to someone else
97 - other _____

18. ARE YOU SATISFIED WITH THE SIZE OF YOUR PLOT? *(card №8, one answer)*
1 - yes, totally
2 - we'd like to have more land. The ideal size would be _____ sotkas
3 - we have too much land. _____ sotkas would suffice us
99 - do not know

GARDEN-PLOT USE

19. WHAT WERE YOUR EXPENSES (IN RUBLES) FOR THE IMPROVEMENT AND MAINTENANCE OF THE GARDEN-PLOT OVER THE PAST 12 MONTHS, IN THE FOLLOWING EXPENSE CATEGORIES? *(card №9)*

	rubles
1. purchase of land, or rent	
2. construction and repair of structures (houses, bath-houses, sheds, etc.)	
3. infrastructure (building of access roads, putting in electricity lines, digging wells, etc.)	

4. landscaping	
5. travel to the plot and back	
6. seeds, saplings, other planting materials	
7. purchase of animals and birds	
8. fertilizers, animal feeds	
9. leasing mechanical equipment	
10. hired labor	
11. taxes and fees	
97. other expenses	

99. do not know

20. HOW MUCH HAVE YOU SPENT TO IMPROVE AND MAINTAIN YOUR PLOT?
1 - over the past 12 months _____rubles
2 - over the past 3 years _____rubles
99 - do not know

21. APPROXIMATELY WHAT PART OF YOUR HOUSEHOLD'S BUDGET, OVER THE PAST YEAR, WAS DEVOTED TO THE IMPROVEMENT AND MAINTENANCE OF YOUR PLOT? *(card №10, one answer)*
1 - quite unsubstantial (less than 5% of all expenses)
2 - a small part (5–10% of expenses)
3 - a large part (11–20% of expenses)
4 - is one of the major expense items (21–30% of expenses)
5 - a major expense item (31–50% of expenses)
6 - the largest expense item (51% and more of expenses)

22. PLEASE NAME AND RANK THE 3 MOST IMPORTANT EXPENSE CATEGORIES FOR THE IMPROVEMENT AND MAINTENANCE OF YOUR PLOT OVER THE PAST 3 YEARS. SCORE 1 = THE MOST IMPORTANT EXPENSE ITEM *(card №11, three answers)*
1 - purchase of land or rent
2 - construction and repair of structures (houses, bath-houses, sheds, etc.)
3 - creating infrastructure (building of access roads, putting in electricity lines, digging wells, etc.)
4 - landscaping
5 - fertilizer, feed, seeds
6 - leasing mechanical equipment
7 - hired labor
8 - taxes and fees
9 - travel to and from the plot
97 - other _____
99 - do not know

23. HOW DO YOU USE YOUR GARDEN-PLOT? *(card №12, as many answers as the respondent provides)*
1 - grow vegetables
2 - grow berries and fruit
3 - grow flowers
4 - keep bees
5 - raise poultry or other birds
6 - raise farm animals
7 - landscaping
8 - relaxing
9 - family gatherings, invite guests

10 - celebrate special occasions
11 - spend vacation at
12 - permanent residence year-round or part of the year
13 - lease out
97 - other
98 - none of the above
99 - do not know

24. WHAT CROPS AND PRODUCTS DO YOU PRODUCE ON YOUR PLOT (OVER THE PAST 12 MONTHS)? *(card №13, as many answers as the respondent provides)*

Potatoes	1	Dill	24	Wild strawberries	47
Carrots	2	Coriander	25	Other berries and fruit trees and shrubs: _____	97_3
Beets	3	Sorrel	26	Flowers	48
Turnips (*repa*)	4	Other greens:_____	97_2	Turf grass	49
Rutabaga	5	Apples	27	Lilac	50
Black radish	6	Pears	28	Other non-food crops, trees, shrubs	51
Radishes	7	Plums	29	Wheat	52
Turnips	8	Cherries	30	Rye	53
Jerusalem artichokes	9	Rowanberries	31	Buckwheat	54
Onions	10	Black rowanberries	32	Other cereal crops:____	97_4
Garlic	11	Schisandra	33	Hay	55
Cucumbers	12	Currants	34	Bees	56
Tomatoes	13	Raspberries	35	Cows	57
Horseradish	14	Blackberries	36	Goats	58
Pepper	15	Sea-buckthorn	37	Sheep	59
Eggplant	16	Rosehips	38	Pigs	60
Squash	17	Currants/gooseberry hybrid	39	Chickens	61
Pumpkin	18	Gooseberries	40	Ducks	62
Sunflower	19	Guelder rose	41	Turkeys	63
Peas	20	Blackthorn	42	Rabbits	64
Red beans	21	Garden serviceberries	43	Other animals & birds:_	97_5
Black beans and other beans	22	Honeysuckle	44		
Other vegetables: ___	97_1	Hazelnuts	45		
Parsley	23	Strawberries	46		

25. OVER THE PAST 5 YEARS THE VOLUME OF PRODUCTION FROM YOUR GARDEN-PLOT HAS: *(card №14, one answer)*
1 - increased significantly (more than doubled)
2 - increased
3 - stayed about the same
4 - decreased
5 - decreased sharply (at least halved)
99 - do not know

26. IN YOUR OPINION, OVER THE NEXT 5 YEARS THE VOLUME OF PRODUCTION FROM YOUR GARDEN-PLOT IS LIKELY TO: *(card №15, one answer)*
1 - increase significantly (more than double)
2 - increase

3 - stay about the same
4 - decrease
5 - decrease sharply (at least halve)
99 - do not know

27. WHAT FERTILIZER DO YOU APPLY? *(card №16, as many answers as the respondent provides)*
1 - manures
2 - compost
3 - leaves, sawdust or other organic material
4 - mineral (rock) fertilizers _____
5 - chemical fertilizers _____
97 - other
98 - do not apply anything
99 - do not know

28. DO YOU USE ANY MACHINES ON YOUR GARDEN-PLOT? *(card №17, as many answers as the respondent provides)*
1 - roto-tiller
2 - grass mower
3 - grass trimmer
4 - electric pump
5 - mechanical pump
6 - mini-tractor
7 - tractor
97 - other _____
98 - no machines used; I only use hand tools
99 - do not know

29. WHAT SOIL IMPROVEMENT METHODS DO YOU USE? *(card №18, as many answers as the respondent provides)*
1 - apply organic fertilizers (manure, compost, etc.)
2 - apply mineral or chemical fertilizers
3 - apply lime
4 - let part of the plot lie fallow for several years
5 - rotate crops planted on a particular spot
6 - plant legumes and other N-fixing plants
7 - plant and turn cover crops under
8 - deep tillage (deeper than 20 cm)
9 - no-till
99 - do not know

30. HOW DO YOU CONTROL PESTS? *(card №19, as many answers as the respondent provides)*
1 - mechanical means (fencing, traps, etc.)
2 - treat without use of poisons (e.g., soapy sprays, etc.)
3 - chemicals or poisons
4 - biological means — attract beneficial birds and other animals or insects
5 - have no pests
6 - have some pests, but do not use any control measures
97 - other
99 - do not know

31. WHERE DO YOU OBTAIN SEEDS FOR PLANTING? *(card №20, as many answers as the respondent provides)*
1 - save my own seeds
2 - mostly save my own seeds
3 - save some seeds; buy others
4 - buy all (or most of) seed
5 - from neighbors or other gardeners
99 - do not know

32. WHAT IS YOUR ATTITUDE TO THE PRESENCE OF WILDLIFE ON YOUR PLOT?
1 - "indifferent": there's little or no wildlife, or I pay no attention to them
2 - overall, positive: enjoy watching them and/or my garden benefits from them (e.g., birds feed on pests)
3 - overall, negative: they damage the garden (e.g., moles eat plant's roots; hawks steal chickens, etc.)
99 - do not know

33. HOW DO YOU CONTROL WEEDS? *(card №21, as many answers as the respondent provides)*
1 - do not control weeds
2 - cultivation (tillage) of the soil
3 - weeding or cutting
4 - apply herbicides
5 - apply mulching material
97 - other:_____
99 - do not know

34. HOW DO YOU USE THE PRODUCTS FROM YOUR GARDEN (ASSUMING TOTAL HARVEST=100%)

	100%
1 Personal consumption	
2 Share with friends or relatives	
3 Sell	
97 other_____	

ATTENTION INTERVIEWER: IF THE RESPONDENT DOES NOT SELL ANY OF THE PRODUCE, PROCEED TO QUESTION №42.

35. IF YOU SELL PART OF THE HAVEST, WHAT REVENUE HAS THE SALE OF THE FOLLOWING PRODUCTS BROUGHT TO YOUR HOUSEHOLD, IN RUBLES, OVER THE PAST 12 MONTHS? *(card №22)*

	rubles	what share of this crop's harvest do you sell (%)?
1 potatoes		
2 other vegetables_____		
3 greens		
4 berries and fruit_____		
5 flowers_____		
6 preserves_____		
7 honey and other bee products		
8 seedlings, seeds_____		
9 milk and milk products_____		
10 eggs		
11 red meat		

12 poultry		
97 other_____		

36. HOW DO YOU SELL YOUR PRODUCTS? *(card № 23, as many answers as the respondent provides)*
1 - sell at an official farmers' market. Distance to the market _____ km
2 - sell at an "unofficial" farmers' market. Distance to the market _____km
3 - customers pick up from our home
4 - we deliver to our customers
5 - roadside stand
6 - sell wholesale
97 - other_____
99 - do not know

37. HOW MUCH HAVE YOU EARNED SELLING YOUR PRODUCE, OVER THE PAST 12 MONTHS?
1 - _____ rubles
99 - do not know

38. WHAT PART OF YOUR HOUSEHOLD'S MONETARY INCOME IS DERIVED FROM THE SALE OF YOUR PRODUCTS? *(card №24, one answer)*
1 - negligible (less than 10%)
2 - substantial (11–39%)
3 - roughly, half (40–60%)
4 - significantly more than half (61–79%)
5 - almost all (80% and more)
99 - do not know

39. WHAT PART OF YOUR HOUSEHOLD'S FOOD BUDGET IS DERIVED FROM THE SALE OF YOUR PRODUCTS? *(card №25, one answer)*
1 - negligible (less than 10%)
2 - substantial (11–39%)
3 - roughly, half (40–60%)
4 - significantly more than half (61–79%)
5 - almost all (80% and more)
99 - do not know

40. OVER THE PAST 5 YEARS THE VOLUME OF THE PRODUCTS YOU SELL HAS: *(card №26, one answer)*
1 - increased dramatically (at least doubled)
2 - increased
3 - stayed the same
4 - decreased
5 - decreased dramatically (at least halved)
99 - do not know

41. IN YOUR OPINION, OVER THE NEXT 5 YEARS THE VOLUME OF THE PRODUCTS YOU SELL IS LIKELY TO: *(card №27, one answer)*
1 - increase dramatically (at least double)
2 - increase
3 - stay the same
4 - decrease
5 - decrease dramatically (at least halve)
99 - do not know

42. HOW DO YOU STORE YOUR HARVEST? *(card №28, as many answers as the respondent provides)*
1 - do not store — only eat during the season
2 - store in my house or apartment without special treatment
3 - make thermally-treated preserves (including jams, pickles, etc.)
4 - fermentation
5 - dry or smoke
6 - put in the cellar
7 - refrigerate
8 - freeze
97 - other
99 - do not know

43. DO YOU EMPLOY HIRED LABOR IN YOUR GARDEN?
1 - yes, regularly
2 - yes, from time to time
3 - no **……***(go to question №45)*

44. WHAT PROPORTION OF LABOR IS HIRED (%)?
1 - _____
99 - do not know

45. WHICH OF THE FOLLOWING DO YOU HAVE ON YOUR GARDEN-PLOT? *(card №29, as many answers as the respondent provides)*
1 - dug well
2 - drilled well
3 - pond
4 - swimming pool
5 - turf grass
6 - electricity
7 - natural gas (pipeline)
8 - tool shed
9 - animal shed
10 - wild bird houses
11 - summer house (without heating)
12 - winter house (habitable year-round; with a heating system or stove)
13 - cellar (on the plot itself or in the proximity of the primary residence in the city)
14 - garage
15 - fence
16 - bath-house
17 - greenhouse or cold-frame
18 - hammock
19 - none of the above
99 - do not know

46. HOW IMPORTANT ARE THE FOLLOWING FUNCTIONS OF YOUR GARDEN-PLOT FOR YOU? *(card №30, one answer on each line)*

	very important	important	rather unimportant	unimportant	do not know
Hobby, recreation, we enjoy gardening	1	2	3	4	99

Maintaining our connection to the earth, to nature	1	2	3	4	99
Place to spend time in the company of other people (neighbors, guests, family members)	1	2	3	4	99
Secondary residence	1	2	3	4	99
A major source of food for the family	1	2	3	4	99
An auxiliary source of food for the family's table	1	2	3	4	99
Source of monetary income	1	2	3	4	99
Security for a "rainy day"	1	2	3	4	99

47. APPROXIMATELY WHAT SHARE OF THE FOOD PRODUCTS YOU CONSUME DO YOU PRODUCE YOURSELF? *(card №31, one answer)*

1 - not much (10% or less)
2 - a significant share (11–40%)
3 - roughly, half (41–60%)
4 - more than half (61–90%)
5 - almost all (more than 90%)
99 - do not know

48. WHAT OTHER USES DO YOU PUT YOUR GARDEN-PLOT TO? *(card №32, as many answers as the respondent provides)*

1 - play sports
2 - have family gatherings or invite guests
3 - secondary residence
4 - recreation
97 - other
99 - do not know

49. WHAT PROBLEMS DO YOU FACE IN RESPECT TO YOUR GARDEN-PLOT? HOW SIGNIFICANT ARE THEY? *(card №33, one answer on each line)*

	A major problem	**A prob-lem**	**Some-what a problem**	**Not a problem**	**Do not know**
maintaining soil fertility	1	2	3	4	99
crop failures	1	2	3	4	99
short growing season or not enough time for crops to ripen	1	2	3	4	99
pests or weeds	1	2	3	4	99
thievery	1	2	3	4	99
high land taxes & fees	1	2	3	4	99
the plot is difficult to get to or too far from our primary residence	1	2	3	4	99
too expensive or do not have enough money to maintain it	1	2	3	4	99
hard to find seed or planting material of good varieties	1	2	3	4	99
hard to obtain more land	1	2	3	4	99
too much paperwork to secure the land title or register structures	1	2	3	4	99
other: _____	1	2	3	4	99

50. DO YOUR INTERACT WITH YOUR NEIGHBORS? *(card №34, as many answers as the respondent provides)*
1 - we do not interact at all
2 - we quarrel or do not get along all that well
3 - we discuss topics unrelated to gardening
4 - share gardening experiences
5 - share seeds and planting materials
6 - give each other a hand in maintaining the garden
7 - share (or buy-sell) part of the harvest
8 - watch after their garden or house when they are away
97 - other
99 - do not know

FAMILY AND THE GARDEN-PLOT

51. WHAT SHARE OF YOUR HOUSEHOLD'S BUDGET IS DEVOTED TO BUYING FOOD? *(card №35, one answer)?*
1 - very small (10% or less)
2 - small (11–20%)
3 - considerable (21–40%)
4 - roughly, half (41–60%)
5 - significantly more than half (61–79%)
6 - almost all (80% and more)
99 - do not know

52. HOW MUCH DOES YOUR HOUSEHOLD SPEND ON FOOD, PER MONTH?
1 - _____rubles
99 - do not know

53. HOW IMPORTANT, DO YOU THINK, IS THE OUTPUT OF HOUSEHOLD GARDENS IN THE AGRICULTURAL PRODUCTION OF THE COUNTRY? *(card №36, one answer)*
1 - not very important; they must account for no more than 10% of all agricultural production
2 - important; I think they may account for 11 to 40% of all agricultural production
3 - very important; I think they roughly produce half (41–60%) of all agricultural products in the country
4 - they are of paramount importance, probably producing 61–80% of Russia's agricultural output
5 - almost all products are produced by households (81–100%)
99 - do not know

54. PLEASE INDICATE TO WHAT EXTENT YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS *(card №37, one answer on each line)*

		Strongly agree	Agree	Disagree	Strongly disagree	Do not know
1	Strong agriculture is the foundation for a strong national economy.	1	2	3	4	99
2	Life in rural areas has become harder over the past 6–7 years.	1	2	3	4	99
3	Life in the city is better than life in the country.	1	2	3	4	99

4	Tending a garden makes a person more economically independent.	1	2	3	4	99
5	The centuries-old tradition of land-based living in our country is still of great relevance today.	1	2	3	4	99
6	Produce grown on one's own garden-plot is more environmentally safe, healthier, and tastier than what can be bought in a store.	1	2	3	4	99
7	Russia needs to follow its own path of development and not try to imitate that of Western nations.	1	2	3	4	99
8	If an agricultural producer requires government support (credits, subsidies, etc.), the way the producer operates must be fundamentally inefficient.	1	2	3	4	99
9	Household gardens are an integral part of the nation's agriculture, just as family and corporate farms are.	1	2	3	4	99
10	Obtaining a property title for the land is a lengthy and complicated process full of bureaucratic formalities.	1	2	3	4	99
11	Small to mid-size farms should become the backbone of Russia's agriculture.	1	2	3	4	99
12	The government should provide more support for the development of the country's agriculture.	1	2	3	4	99
13	Every person must plant at least one tree in his/her lifetime.	1	2	3	4	99
14	Agricultural producers should specialize in the production of one or only a few crops or products.	1	2	3	4	99
15	Russia should be self-sufficient in terms of food production, and not buy foodstuffs abroad.	1	2	3	4	99
16	It is essential for each person to maintain a direct link to living nature, and gardening provides such a link.	1	2	3	4	99
17	Gardening improves one's physical and mental health.	1	2	3	4	99
18	Many problems of today's Russia result from cities being overpopulated while rural areas are dying out.	1	2	3	4	99
19	Working with plants and the soil allows one to demonstrate one's creativity.	1	2	3	4	99
20	It is more important for our household to have a garden and be self-sufficient than try to increase our monetary income.	1	2	3	4	99
21	Gardening and farming involve too much physical labor.	1	2	3	4	99
22	As the nation's economy improves and incomes increase, the amount of produce grown on household garden-plots will decrease.	1	2	3	4	99

23	Today's gardeners continue the ancient Russian tradition of treating the land with the same respect and care as you would show to your mother.	1	2	3	4	99
24	Contact with the earth and plants makes a person happier.	1	2	3	4	99

55. WHAT IS YOUR HOUSEHOLD INCOME LEVEL? *(card №38, one answer)*
1 - our income is barely sufficient to buy food and very basic non-food items
2 - our income is sufficient to buy food and basic non-food items; yet we need to save for over 1 month to buy clothing items
3 - our income is sufficient to buy food, basic non-food items, and clothing; yet we need to save for over 1 month to buy long-lasting goods such as household appliances, furniture, etc.
4 - our income is sufficient to buy even long-lasting goods such as household appliances, furniture, etc. without the need to save
99 - do not know

56. DOES YOUR HOUSEHOLD OWN A CAR?
1 - yes
2 - no
99 - do not know

57. DOES YOUR HOUSEHOLD OWN A CELL PHONE?
1 - yes
2 - no
99 - do not know

58. WHERE WERE YOU BORN? *(card №39, one answer)*
1 - major urban center (over 300,000 people) or oblast (province) capital
2 - small city or town (less than 300,000 people) or raion (district) center
3 - rural area
97 - other
99 - do not know

59. WHERE WERE YOUR PARENTS BORN? *(card №39, one answer per column)*

	father	**mother**
major urban center (over 300,000 people) or oblast (province) capital	1	1
small city or town (less than 300,000 people) or raion (district) center	2	2
rural area	3	3
other	97	97
do not know	99	99

60. WHERE DID YOUR PARENTS SPEND MOST OF THEIR LIFE? *(card №39, one answer)*
1 - major urban center (over 300,000 people) or oblast (province) capital
2 - small city or town (less than 300,000 people) or raion (district) center
3 - rural area
97 - other
99 - do not know

61. WHERE HAVE YOU SPENT MOST OF YOUR LIFE? *(cars №39, one answer)*
1 - major urban center (over 300,000 people) or oblast (province) capital
2 - small city or town (less than 300,000 people) or raion (district) center
3 - rural area
97 - other
99 - do not know

62. HAS ANY MEMBER OF YOUR HOUSEHOLD LIVED IN A RURAL AREA FOR 5 YEARS OR LONGER?
1 - yes
2 - no
99 - do not know

63. DO YOU CONSIDER YOURSELF AN EXPERIENCED GARDENER?
1 - yes by all means
2 - rather yes than not
3 - rather not than yes
4 - no
99 - do not know

64. DO YOU STRIVE TO ACQUIRE NEW KNOWLEDGE ON GARDENING, AND FROM WHAT SOURCES? *(card №40, 3 answers maximum)*
1 - yes, from periodicals
2 - yes, from books
3 - yes, from dealing with other gardeners (e.g., neighbors and friends)
4 - yes, from my own experience
5 - yes, I consult with agricultural experts
6 - no
97 - other
99 - do not know

PLEASE FILL IN THE FOLLOWING TABLE WITH INFORMATION ON ALL MEMBERS OF YOUR HOUSEHOLD WHO LIVE TOGETHER (INCLUDING CHILDREN). EACH OF THE COLUMNS CORRESPONDS TO ONE FAMILY MEMBER.

Family member's number	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
U1 Gender								
Male	1	1	1	1	1	1	1	1
Female	2	2	2	2	2	2	2	2
U2 Age								
full years								
U3 Education								
Uneducated, primary, incomplete high school (up to Grade 8–9)	1	1	1	1	1	1	1	1
High school	2	2	2	2	2	2	2	2
High school — technical	3	3	3	3	3	3	3	3
Higher education or incomplete higher education	4	4	4	4	4	4	4	4
U4. Employment								
Employed	1	1	1	1	1	1	1	1
Unemployed	2	2	2	2	2	2	2	2
U5. Employed								

Head of an enterprise or organization	1	1	1	1	1	1	1	1
Manager of a department	2	2	2	2	2	2	2	2
Professional worker	3	3	3	3	3	3	3	3
Service industry worker	4	4	4	4	4	4	4	4
Worker	5	5	5	5	5	5	5	5
Other	97	97	97	97	97	97	97	97
U6. Unemployed								
Schoolchild	1	1	1	1	1	1	1	1
Student (higher education)	2	2	2	2	2	2	2	2
Pensioner (unemployed)	3	3	3	3	3	3	3	3
Handicapped (unemployed)	4	4	4	4	4	4	4	4
Unemployed	5	5	5	5	5	5	5	5
Housewife	6	6	6	6	6	6	6	6
Young mother taking care of a child or Expecting mother	7	7	7	7	7	7	7	7
Other	97	97	97	97	97	97	97	97
U7. Who is the primary decision maker concerning what and how much is to be produced in the garden-plot?								
	1	2	3	4	5	6	7	8
U8. Who is primarily responsible for processing the harvest?								
	1	2	3	4	5	6	7	8
U9. Who is primarily responsible for selling the products? (only for households selling their produce)								
	1	2	3	4	5	6	7	8
U10. How many hours per week does each member work on the plot?								
Hours								

ATTENTION INTERVIEWER:
QUESTIONS U7 – U10 ARE ASKED ONLY IF THE HOUSEHOLD OWNS OR USES A GARDEN.

VITA

Leonid Sharashkin was born on July 12, 1977, in Moscow, Russia. After graduating with a Gold Medal from high school, in 1994 he entered the Moscow State Institute of International Relations (MGIMO-University), from which he received the degrees of Bachelor of Commerce (with Honors) in 1998 and Specialist in International Economic Relations (with Honors) in 1999. A recipient of the Edmund S. Muskie Graduate Fellowship, in 2001 he received a Master of Public Affairs degree in Environmental Policy and Natural Resources Management from Indiana University–Bloomington. From 2001 to 2003 he headed the Conservation Finance and Economic Programme of the World Wide Fund for Nature (also known as World Wildlife Fund, or WWF Russia) in Moscow. During this time he also served as editor of Russia's largest environmental magazine, *The Panda Times*. From 2003 to 2008 he was affiliated with the University of Missouri Center for Agroforestry, doing research on the economic, social and cultural significance of family gardens. In 2008 he received a Ph.D. in Forestry from the University of Missouri–Columbia. Dr. Sharashkin is now involved in a number of projects which promote self-reliant, sustainable lifestyle choices based on the integration of human habitat with agroecosystems. He also travels internationally, speaking on these topics. He has translated, edited, or authored over a dozen books on the environment, spirituality, natural childbirth, and alternative education. He is married and has two daughters, and is now devoting much of his time to raising his family and his garden.