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Land Reform in Ukraine

The First Five Years

Csaba Csaki
Zvi Lerman

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Foreword

Agriculture in transition economies accounts for a much greater share of employment than in industrialized countries of Europe and North America. Agricultural reforms, which among other policies include privatization of land and restructuring of the traditional large farms, are therefore expected to be an important cornerstone for overall transformation of the economies of the former socialist world. The World Bank closely monitors the progress of land reform in these countries to evaluate the achievements, advise member governments on best practices, and design lending for investment and development.

Farm-level surveys provide one of the most effective monitoring tools that make it possible to penetrate beyond the anonymous curtain of official statistics. The World Bank, in cooperation with local research institutions, is conducting an extensive series of farm surveys in many of the former Soviet republics, including Russia, Ukraine, Moldova, Armenia, and Georgia. Farm surveys are also conducted across East Central Europe. The latest is a survey of Romanian family farms and farm associations. The results of these surveys are regularly published in the form of analytical reports in the World Bank Discussion Papers series.

The present study summarizes the first five years (1991-1996) of agrarian reforms in Ukraine. Although much has been accomplished in this period, it is our duty to note that much more remains to be done. Vigorous action with agricultural reform is required if Ukraine is to exploit its unique potential as an agricultural producer with one of the richest reserves of highly fertile soils in the world.

The findings and conclusions of this study should provide a useful tool for the Ukrainian government in assessing accomplishments and identifying future steps in agricultural reform. They also will be useful to international institutions designing financial and technical assistance, and to scholars studying the unprecedented process of transformation in transition economies. The World Bank will continue its commitment to provide the international community with similar analytical reports for other countries in transition.

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Preface

This report presents the results of a farm-level survey conducted in 11 provinces in Ukraine in January-March 1996. The survey constituted a continuation and an extension of a previous survey conducted by the Agrarian Institute in Kiev between November 1993 and March 1994, with support from the World Bank. As in the previous case, the survey included three questionnaires distributed to private farmers, managers of large farm enterprises, and employees of large farms. The sample was designed to cover the country from West to East, ensuring sufficient representation of the different agro-climatic and socio-cultural zones. The detailed structure of the sample is shown in **Table A.**

Table A: Structure of the Ukrainian Sample: 1996

Province		Zone	Private Farms		Farm Enterprises		Employees	
			Number	Percent	Number	Percent	Number	Percent
1	Kiev	Center	15	11.8	15	13.0	229	13.7
2	Cherkassy	Center	7	5.5	10	8.7	174	10.4
3	Sumy	North-East	15	11.8	15	13.0	227	13.6
4	Poltava	Center-East	10	7.9	10	8.7	150	9.0
5	Khar'kov	East	16	12.6	14	12.2	225	13.4
6	Donetsk	South-East	5	3.9	5	4.3	75	4.5
7	Kherson	South	14	11.0	14	12.2	218	13.0
8	Vinnitsa	Center-West	6	4.7	7	6.1	146	8.7
9	Ternopol'	West	14	11.0	15	13.0	225	13.4
10	Ivano-Frankovsk	West	10	7.9	10	8.7	5	0.3
11	L'vov	West	15	11.8	0	0.0	0	0.0
Total			127	100.0	115	100.0	1674	100.0

Source: Author's data.

The survey was part of a broader project on the topic of *Land Registration and Restructuring of Agriculture* funded by a PHRD grant made available by the Government of Japan through the World Bank. The survey was managed as a cooperative effort by a team of Ukrainian researchers in Kiev and a World Bank task team. The Ukrainian team conducted the field work, carried out data processing and analysis, and developed a comprehensive Russian-language report based on aggregate information and survey data. The World Bank team provided support in areas of survey design, computer software, data processing, and analytical methodology. The World Bank team also

produced the present English-language report, based on information provided by the Ukrainian counterparts and on independent analysis of the survey data.

The Ukrainian team was headed by P. Sabluk, V. Mesel'-Veselyak, and V. Yurchishin of the Agrarian Institute in Kiev. A. Fesina, also of the Agrarian Institute, acted as the administrative coordinator of the project. The various subject groups were headed (in alphabetical order) by N. Dem'yanenko (agricultural finance), N. Fedorov (land relations), N. Malik (intra-farm cooperation), V. Mesel'-Veselyak (farm organization), A. Onishchenko (land reform), N. Vdovichenko (social issues), and V. Yurchishin (agricultural policy). The project received wide support from the Cabinet of Ministers of Ukraine, the Vice-Premier's Office, the Ministry of Agriculture and Food, and the Ukrainian Academy of Agricultural Sciences.

The World Bank team included Csaba Csaki, Zvi Lerman, Mark Lundell, and Iain Shuker. Mark Lundell and Iain Shuker acted as task managers for the World Bank and provided administrative and financial coordination. Zvi Lerman directed the design and the methodology of the survey and was the principal author of the English-language report. Csaba Csaki provided scientific and policy guidance throughout the project and co-authored the present report. Valuable assistance with data processing and preliminary analysis was provided by Alexandra Sidorenko, during her tenure as a summer intern at the World Bank in 1996. Aleksander Kaliberda of the World Bank Resident Mission in Kiev assisted with coordinating the activities of the Ukrainian team. Golam Kirsch provided editorial comment and Alan Zuschlag prepared the report for publication.

The report starts with an introductory chapter, which presents a summary of the findings (Chapter 1). The legal framework for land reform and recent developments in Ukrainian agriculture are reviewed in Chapters 2 and 3, which are based on officially published sources. Chapters 4 through 8 are the empirical core of the study, presenting an analysis of the survey data. The analysis covers reorganization as seen by the managers of large farms (Chapter 4), the impact of reorganization on farm employees (Chapters 5 and 6), development of the new private sector in agriculture (Chapter 7), and financial situation of farm enterprises and private farms (Chapter 8).

Tables presented in the text without an explicitly identified source are based on the data of the present survey ("1996 survey," to distinguish it from the previous "1994 survey"). The data for all charts and diagrams are derived from the survey or from official aggregate statistics provided by the Agrarian Institute (the specific source is always clear from the context).

The present analysis of the 1996 survey complements two previous publications that analyze the findings of the 1994 survey. The English-language publication is *Land Reform and Farm Restructuring in Ukraine*, World Bank Discussion Paper 270, The World Bank, Washington, DC (1994). The parallel publication in Russian is *Zemel'naya Reforma i Reorganizatsiya Sel'skogo Khozyaistva v Ukraine*, World Bank Discussion Paper 270R, The World Bank, Washington, DC (1995). Both publications are available from the World Bank Bookstore, 1818 H Street NW, Washington, DC.

Abstract

By 1996, the state had transferred most of the agricultural land in Ukraine to collective and private ownership, but 40% still remains in state ownership. The individual sector, including household plots and private farms, has increased its role significantly, and it now cultivates 15% of land in the country and accounts for a substantial share of products sold in the marketplace. Yet the growth of private farming has slowed down after a vigorous start, and the number of independent family farms appears to have stabilized at around 33,000, at least temporarily.

Internal restructuring of collectives is only beginning. The distribution of land and asset shares has been completed in about half the farms surveyed, and most farms still retain central management without radical reorganization into internally autonomous subdivisions. The new shareholders and other employees fail to discern significant changes following formal reorganization of their farm enterprises. Ukrainian agriculture remains dominated by large collective structures that continue to operate according to old principles, and the recorded diversity of new organizational forms is nothing more than a result of "changing the sign on the door."

The failure of large farms to adapt to new economic conditions has resulted in a distinct deterioration of their financial performance. The new private farms, on the other hand, appear to be fairly profitable. Families of independent farmers in general are much more affluent and more optimistic than households of employees in farm enterprises. Yet most rural residents prefer to invest their land and asset shares in the local farm enterprises rather than risk private farming.

The findings of the study suggest that land reform in Ukraine is in a danger of stagnation. The government must make every possible effort to create the necessary institutional and market conditions for injecting the stagnating reforms with renewed vigor.

Executive Summary

March 1996 marked the five-year anniversary of land reform in Ukraine and the beginning of the attempts to transform the agriculture and food sector into a more efficient and productive system based on market principles and private ownership. In addition to land reform and restructuring of traditional collective and state farms, the agenda of sector reforms includes liberalization of the market environment, privatization of agroprocessing and trade, and the creation of a new institutional framework for agriculture.

Measurable progress has been achieved in all areas of reform. However, the progress has not been smooth. The pace of agricultural reforms has been characterized by a continuous struggle between pro-reform and conservative forces since Ukraine became an independent country. Because of the resulting tensions, the government has been unable to implement a consistent set of policies required to address properly the most critical reform issues.

Land reform, which is one of the major components of the reform process in Ukraine, is the primary focus of this report. The study is based on the results of a farm-level survey conducted in 11 provinces in Ukraine between January and March 1996. The survey constituted a continuation and extension of a previous survey conducted by the Agrarian Institute in Kiev between November 1993 and March 1994, with support from the World Bank. The objective of the study has been to conduct a rigorous empirical and analytical assessment of changes in land ownership and farming structures, and to evaluate the impact of restructuring in large-scale farms since independence through spring of 1996.

Declining Sectoral Performance

The overall performance of the sector indicates that reforms have not yet succeeded in improving efficiency and productivity. In fact, ***sectoral output, investments, and the level of technology continue to deteriorate***. The initial expectations that market-oriented economic reforms will produce a fast supply response leading to rapid recovery have not materialized in any of the former socialist countries. In Ukraine, as in many other transition economies, the years since 1990 have been characterized by an overall decline in economic activity, and in particular by a decline in agricultural production. The gross domestic product in Ukraine dropped by 1996 to 43% of the 1990 level. Agricultural production declined somewhat less precipitously, dropping to 59% of the 1990 level. Despite the slower decrease in the volume of agricultural production, the share of agriculture in the economy calculated at current prices shrank from about 24% in 1990-1991 to 12% in 1996. While production and market share declined, the agricultural labor force remained unchanged at five million, or about 20% of the total number of employed. So far, declining output has not been accompanied by adjustment in labor resources, probably because of a lack of alternative employment opportunities in rural areas, and in the country as a whole. This certainly has had an adverse effect on the efficiency of agriculture.

The crop sector, where Ukraine has its major comparative advantage, has suffered from an overall decline. Sown areas have not changed dramatically since 1990, and yet the production of the main cash crops, cereals and sugar beets, dropped by 30%-40% between 1990 and 1995. Grain output declined from 50 million tons per year to less than 30 million in recent years. This has been the result of a marked reduction in yields, probably due to general deterioration of farm input supply systems and mechanical services during transition. The efficiency of production as reflected in all standard measures (i.e., the ratio of labor to output, crop yields, milk yields, and weight gain of animals) has clearly deteriorated.

Signs of decline are particularly visible in the livestock sector. Livestock production traditionally accounted for 55% of gross agricultural product; it has now shrunk to 45% of total output. The decline in production has been much greater than the decline in the number of animals, pointing to deterioration in the efficiency of the livestock sector.

Slow Progress in Land Reform

The process of land reform and farm restructuring in Ukraine is far from progressing vigorously. The only major accomplishment is the transfer of state land to collective ownership, and even this undertaking remains uncompleted. Distribution of land shares to individuals in collective farm enterprises is less than half complete, and internal restructuring of the formally reorganized farm enterprises has hardly begun. ***Farm employees report that the overall situation in their enterprise has remained largely unchanged after reorganization.*** In the few cases where farms have reorganized into smaller structural subunits, the autonomy of the new subunits is extremely limited and the enterprise in effect continues to be run by central management.

Two encouraging signs are the increasingly commercial orientation of household plots in collectives and the generally profitable situation of independent private farms established outside the collectivist framework. Yet despite the generally favorable well-being of private farmers, farm employees do not show much enthusiasm to exit collectives and start private farming. ***Farm employees prefer to stay in collectives***, at least for the time being, although they are highly dissatisfied with the well-being and income of their families. In this respect, Ukrainian peasants are no different from peasants the world over, who are notoriously conservative and do not like exposing themselves to new risks.

After five years of reforms, only 15% of agricultural land in Ukraine is cultivated by the individual sector (household plots and family farms), and ***most Ukrainian agriculture remains effectively collectivized, despite the diversity of organizational forms that have emerged since 1992.*** Moreover, the growth of private farming has slowed down considerably since 1994, and the number of private family farms appears to have stabilized, at least temporarily, at 33,000, with 2% of agricultural land and about the same share of agricultural product. The overall impression from the findings of the survey is that ***land reform in Ukraine is in danger of entering a stagnation phase.***

The government needs to make every possible effort to create the necessary conditions for injecting the reforms with renewed vigor.

Changes at the Farm Level

The survey was designed to go beyond official statistics and capture information on the progress of land reform at the farm level. Interviews with managers of large farms and with individuals in rural communities provided first-hand evidence on major characteristics of the reform process, as viewed by different participants. The survey of some 2,000 respondents addressed the following main issues.

- **Does reorganization in large farm enterprises go beyond simply "changing the sign on the door?"** Although most land has been transferred from state to collective ownership and farms are now registered in a wide array of different organizational forms, internal restructuring has been minimal. The sector continues to be dominated by collective farming structures that are largely managed by traditional centralist means, and individuals fail to discern significant internal changes as a result of reorganization.

- **How far have individuals in rural communities advanced toward assuming responsibility for their property rights in land and assets?** Distribution of land and asset shares to individuals is progressing, although it is still only half complete. The shares, however, are still mere paper certificates, and no mechanisms have been developed to institutionalize selling or leasing of individually held shares in land and assets to entrepreneurial farmers or active producers. Rural residents by default leave their shares for the use of the former collective. Although every individual is guaranteed the right of exit from the collective enterprise, private farmers generally report that they have left their former collective without any entitlement of land and assets.

- **To what extent does the individual sector engage in commercial rather than subsistence farming?** Private farmers show a definite commercial orientation, which is reflected in a pronounced adjustment of their product mix, emphasizing crop production at the expense of livestock. Household plots also sell a substantial proportion of their output in local markets, and derive around 20% of family income from sales of farm products. There are no signs that Ukrainian agriculture is reverting to subsistence farming.

- **How accessible are various market services to agricultural producers?** Private suppliers and marketers are emerging, and small-scale producers are beginning to use private traders as a source for their inputs and an outlet for their products. These encouraging developments notwithstanding, the traditional state monopolies (now transformed into privatized monopolies) continue to dominate agricultural processing, marketing, and input supply.

- **What has been the impact of reform on the individual in rural areas?** Independent private farmers are much more satisfied and optimistic than rural residents who stay on as

members and employees of collectives. Yet, despite the dissatisfaction of the membership of collective farms with their well-being and family income, most of them prefer to remain under the safety umbrella of a collective organization and are not prepared to accept the new risks of independent farming.

What Are the Prospects?

The accomplishments of Ukraine in reforming agriculture, and specifically in land reform, have so far been modest. The present analysis confirms the underlying reasons for the slow pace of change first identified in the previous report on land reform in Ukraine in 1994.[1]

Initial accomplishments in the process of reform have been modest for a variety of reasons:

- **Political and legal uncertainty**: Controversy over the outline of the general reform program has distracted the attention from the sectoral agenda, and frequent changes of legislation have created a sense of uncertainty about the future course of reform.

- **Lack of a supportive environment**: Functioning markets for farm inputs and products have not yet emerged, which impedes successful operation of the new privatized agriculture. The financial sector is in disarray, few banks are able to provide mortgages, and few landowners are willing or able to offer land as collateral. Mortgage finance is an important instrument of agricultural lending for private investment, but its development requires security of tenure, legal title to land that can be used as collateral, and existence of land markets that provide an objective valuation of land. Land markets do not function at present because sales of privately owned land are still subject to a moratorium, despite repeated attempts by the government to change the law. Fully functioning land markets, including unconstrained purchase, leasing, and mortgage of land is necessary if Ukraine is to develop its potential for high-yielding, high-value agriculture, which is consistent with its natural endowment and is essential for supporting rural incomes.

- **Inadequate mechanisms for restructuring and exit**: Procedures for further restructuring at the farm level are still inadequately developed, and individuals and farm managers lack basic information about the available options. According to respondents in the study, the mechanism for exiting collectives with land and assets is not yet operational. Procedures have to be developed for groups of shareholders to present a proposal of separation, or less radically a proposal of internal regrouping, including specification of the land and assets the group would like to receive for its use. Procedures are also needed for adjudication of

[1] Z. Lerman, K. Brooks, and C. Csaki: *Land Reform and Farm Restructuring in Ukraine*, World Bank Discussion Paper No. 270, Washington, DC (1994).

disputes that arise when the remaining shareholders do not approve a specific separation proposal.

- **High risk and lack of instruments for risk management**: Political uncertainty, lack of clarity in program design, and macro-economic instability create a risky environment for private farming, and yet even such basic instruments as secure savings and insurance are not available. Continued high inflation increases the risk for agricultural producers, and encourages the retreat from markets into internal distribution and inventory accumulation. Participants in land reform and farm restructuring are likely to opt for remaining within larger collective units, where distributions in kind provide a hedge against erosion of cash incomes.

Unfortunately, the current procedures for land reform and farm restructuring do not yet provide a flexible framework for effective implementation. Nor is the environment created by the macro-economic reforms and the overall privatization program supportive of vigorous agricultural reform. Developments in Ukraine confirm that reforming socialist agriculture requires a consistent set of coordinated actions. Overall progress can be expected only if coordinated reforms are implemented completely. Land reform is obviously a major, yet not the only, determinant of a successful transition. Progress in land reform and the completion of the transformation of agriculture to market-based operation requires the government of Ukraine to address effectively the following main issues:

- **Continuation of restructuring of former collective and state farms to create market-conforming, efficiency-motivated units**. Farm restructuring has to enter a new phase, ensuring genuine reorganization based on market-oriented operation and incentive systems that encourage individual accountability. Strict financial disciplines must be enforced to initiate changes in all farming organizations that are unable to operate efficiently. In addition to efforts promoting independent family farming, the creation of other genuinely private producer structures and service cooperatives must receive more attention.

- **Introduction of changes in the legal framework governing land ownership and transactions in land**. The moratorium on the sale of land should be abolished without further delay. The prevailing restrictions on private ownership of land are a serious obstacle to the creation of market-oriented farming through regrouping of land and assets. Prohibitions on transactions in land also inhibit financing and investment in agriculture. Leasing arrangements should be contractually formalized, and lessees (whether individuals or collectives) should pay for the use of leased land. At present, many lessees use land and pay for it indirectly or not at all. Much of the leased land originates from the state reserve, and in practice the lease is simply a permission to use the land, rather than a commercial agreement. Development of lease contracts is particularly important for the emergence of efficient farming units as long as markets for buying and selling of land remain rudimentary.

- **Improvements in the market environment**. Although the creation of functioning market institutions takes time, the regulatory and market environment can be improved quickly by removing the remaining export barriers and the remnants of the state-order system, especially the continued intervention of the regional authorities in farm-level decisions. To promote agricultural markets for both private and state-owned enterprises, all state agricultural procurement needs to be carried out on a competitive basis, through open tenders and purchases on commodity exchanges. Intermediaries and marketing enterprises need to be encouraged to participate more widely in the agricultural commodity exchanges to increase competition for output from agricultural enterprises, which do not usually have the trading expertise for direct access to commodity exchanges.

- **Demonopolization and privatization of the grain sector**. The grain distribution system, and grain trading in general, represent the most critical component of agricultural markets in Ukraine. Grain, and especially wheat, is viewed as a strategic commodity for reasons of food security, as well as for its role as one of the commodities that pays for imports of natural gas. Demonopolization requires vigorous policy monitoring and advocacy to ensure a "level playing field" for state and private enterprises.

- **Rehabilitation of agroprocessing and input supply**. Privatization in these subsectors should be accelerated to create transparent ownership and management within a truly competitive framework. Without an internationally competitive agroprocessing sector, primary agriculture cannot develop its full potential. Transition from former state monopolies to new private monopolies, as it is often practiced today, is not a solution. Foreign investments essential for facilitating the technological renewal of agroprocessing can be obtained only if investors are able to function in a business-oriented competitive environment. Privatization of agroprocessing, marketing, and input supply falls outside the purview of land reform. Yet the current situation indicates that a modern competitive agroprocessing industry is an essential precondition for the success of land reform.

- **Reform in financial services and availability of capital**. Financial sector reforms should be accelerated, in parallel with the rehabilitation of agroprocessing and trade. Functioning financial institutions are essential for providing short-term and long-term funds to agriculture. Strict financial discipline should be imposed on all farms, as well as other enterprises, so that accumulating arrears do not undermine the reforms and distort incentives to which managers respond.

- **Creation of a new supportive institutional framework**. The strengthening of public institutions and improvement in the provision of public goods and services for privatized agriculture is also an essential condition for the ultimate success of land reform.

If these issues are addressed effectively, Ukrainian agriculture will be able to advance to the second stage of the overall land reform and farm restructuring program, which involves ***creation of market-oriented, profit-motivated structures based on clear individual ownership of land and assets and***

an incentive system that encourages individual responsibility and rewards individual effort. The new farm structures may take a variety of forms. Some person will exit individually with shares of land and assets and establish private farms. Others will pool their shares and create small partnerships or cooperatives for farming. Yet others may choose to lease their land to more enterprising producers and assume the role of "inactive investors", or alternatively focus on development of private farm-support services. The former collectives will gradually break up into individual farms or small farming groups, where production will be based on privately owned land and assets. These new producers will be supported by market services, some of which will be provided by new private entrepreneurs (individually or in groups), while others may be based on former collective management structures that will redefine their role as service firms or cooperatives.

1

Five Years of Land Reform in Ukraine: Summary and Conclusions

March 1996 marked the first five-year anniversary of land reform in Ukraine. To summarize the achievements during the first five years of land reform, the World Bank and the Ukrainian Agrarian Institute conducted a survey of some 2,000 respondents, including private farmers, managers of large farm enterprises, and employees of large farms in 11 out of 25 provinces. The survey was conducted in January-March 1996. It was a second farm-level survey supported by the World Bank in Ukraine, continuing and extending the field work done previously between November 1993 and March 1994.

The survey was designed to penetrate beyond the official statistics and to capture information on the progress of land reform at the farm level. Interviews with managers of large farms and with individuals in rural communities provided first-hand evidence on major characteristics of the reform process, as viewed from different angles. The survey addressed the following main issues:

- Does reorganization go beyond a mere "changing of the sign on the door" in large farm enterprises?
- How far have the individuals in rural communities advanced toward assuming responsibility for their property rights in land and assets?
- To what extent the individual sector engages in commercial, as opposed to subsistence, farming?
- How accessible are various market services to agricultural producers?
- What are the main obstacles to further expansion of the individual sector?

In conjunction with the previous 1994 survey, the present survey provides a "second point in time," and thus enables to get a sense of progress (or lack thereof) within the last two years.

Tenure and Ownership of Land

The most prominent outcome of agricultural reforms is the elimination of the monopoly of the state on ownership of land, which was a feature of the Soviet system for more than seven decades. Since January 1992, farm land can be transferred into collective and individual ownership, and only lands from a limited range of categories are required to remain state-owned.

A highly important attribute of collective ownership of land is the right of each member to exit the collective with a physical plot of land, corresponding to the individual share of collective property. This provision establishes a fundamental mechanism for transfer of land from collective to private ownership, and guarantees the individual's freedom of choice in the future. A collective is no longer a closed entity, as it was during the Soviet era, and individuals are now entitled to leave the collective taking their share of land with them.

Existing legislation severely circumscribes the rights of private land owners. Private land may not be sold by the owners within the first six years, and the rights associated with this new form of property are thus not different from the rights that were previously associated with the traditional Soviet form of land tenure called "inheritable lifetime possession." Private land owners are required to use their land for farming, and not for any other purpose; they are expected to cultivate their land in compliance with sound ecological and soil protection practices; and they must cultivate their land continuously, without a break of more than one year in active farming. If these conditions are not met, the private land will be taken away from its rightful owner by administrative action of local authorities. This sanction is totally inconsistent with the notion of private ownership and with market mechanisms of land management.

The process of land reform has been accompanied by an increase in the diversity of organizational forms of farming in Ukraine. From an organizationally monolithic sector with about 10,000 kolkhozes and sovkhozes (Soviet-style collective and state farms) in 1990, Ukrainian agriculture has developed into a mixture of collective agricultural enterprises, farmers' unions, associations, cooperatives, parnerships, joint-stock societies, and state farms. In addition to these large-scale shareholder structures, there are over 33,000 private farms in Ukraine established by individuals outside the collectivist framework.

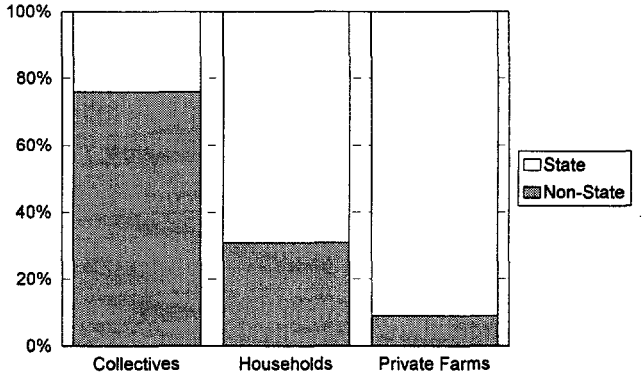
Yet this diversity of organizational forms is misleading. Over half the large farms participating in the survey are registered as collective farm enterprises and over 20% as shareholder structures with non-tradable shares. Thus, although less than 3% of enterprises in the sample remain state farms after reorganization, collective forms of organization continue to dominate the rural scene. In most cases, the reorganization involved a mere change of name from the traditional Soviet term kolkhoz ("collective farm") to the new Ukrainian term KGSP ("collective agricultural enterprise").

Although the individual sector in Ukraine includes over 33,000 private family farms and over 12 million household plots, most land remains in collective, and not individual, use. Individual use of land, including subsidiary household plots and peasant farms, accounts for about 15% of agricultural land, while more than 65% is in collective use 17% is in state farms.

However, much of the land cultivated by collective enterprises and even by individual farmers is still state-owned. Nationally, only about 60% of land has been transferred from state to collective ownership (national data for end of 1996), and even in reorganized collective farms participating in the survey about one quarter of land is still owned by the state (Fig. 1.1). Private farmers and households own only a small proportion of the land they cultivate, and most holdings are still state

land in use rights (Fig. 1.1). Much remains to be done nationally toward actual elimination of state ownership of land and establishment of farming structures consistent with individual initiative and market principles.

Fig. 1.1. Land Tenure by Farm Category



Source: 1996 survey

Transfer of Property Rights

Transfer of land from state to collective ownership is a first step in the process of reform, which ultimately should lead to transfer of property rights to individuals. The legal mechanism for transfer of property rights to individuals prescribes distribution of paper certificates of entitlement to a share of land and other farm assets to each member in a collective. Distribution of shares, combined with the legal right of exit from the existing collective, establishes a fundamental mechanism for meaningful restructuring of the farm sector in the future. It is an interim mechanism, which is ultimately expected to lead to physical distribution of land plots and farm assets in kind.

Table 1.1. Progress of Farm Reorganization (percent of respondents in 1996 survey)

	Managers*	Employees
Farm reorganized	77%	83%
Land shares determined	47%	42%
Asset shares determined	74%	64%
Certificates issued		
land shares	12%	
asset shares	22%	

*Criterion of farm reorganization for managers is transfer of state land to collective ownership.

Source: Author's data.

Farm employees report that by 1996 land shares had been determined on 42% of the farms and asset shares on 64% of the farms, while the numbers based on the farm managers' responses are 47% and 74% respectively. This is a definite increase compared with the situation in the 1994 World Bank survey (27% for land shares and 54% for assets shares based on the farm employees' responses), but roughly half the population are still without any certificates of entitlement to land and assets of the former collective enterprise. The determination of land shares practically began only in 1995, after the enabling presidential decrees had been signed, and it lags behind the other components of the

process (Table 1.1). As a result, less than half the land cultivated by the large farms in the sample is in so-called "shared collective" ownership: the rest of privatized land is still in joint collective ownership, pending determination of individual land shares.

Where land shares have been calculated, 85% of land is allocated to land shares and 15% remains in a common undistributed reserve. With asset shares, 75% of farm assets has been allocated to shares, and 25% remains undistributed, more than a third of it in social assets. Thus, the legal option to keep land and assets in undistributed form is not abused by farm managers.

All farms assign land and asset shares to their working members and to pensioners living in the village. Representatives of other social groups (former employees no longer residing in the village, employees of the rural services sector, etc.) represent less than 10% of beneficiaries. The average land share in the sample is 3.6 ha according to farm managers. The average assets share in the sample is 120 million krb., or $600 at the exchange rate prevailing in the first quarter of 1996. While the land share is practically the same for active workers and pensioners, the average asset share is somewhat larger for active workers ($700 compared with $500 for pensioners).

The beneficiaries in the land sharing process appear to be uninformed concerning the rights attached to their land shares. Thus, only 8% of respondents with shares report that it is allowed to sell land shares, only 22% report that land shares may be leased out, and only 26% report that shares may be received in the form of a plot of land when the individual exits the farm enterprise with the purpose of establishing a private farm. In fact, all these options are perfectly legal, although selling of land shares is still allowed only within the enterprise. On the other hand, most respondents (80%) know that they are allowed to "invest" their land shares in the farm enterprise, thus becoming shareholders of a new corporate entity, and two-thirds of the respondents moreover indicate that they in fact plan to invest their land shares in the enterprise. The option of investing the shares in the farm enterprise is recognized by almost all respondents because it has been repeatedly emphasized by farm managers, who are apparently the main source of information about land reform and who very conveniently have omitted to mention the other legally available options for internal restructuring. The second best option reported in more than 23% of single-choice answers is the option of leasing the land shares to the enterprise. Very few respondents plan to sell their land share or use it to create an independent private farm.

Over 80% of private farmers in the sample who previously worked in the local farm enterprise report that they did not receive their share of land or assets on exit from the collective. This is a clear contravention of the spirit of existing laws, which regard land and asset shares as a source of start-up capital for emergent private farmers.

Internal Restructuring

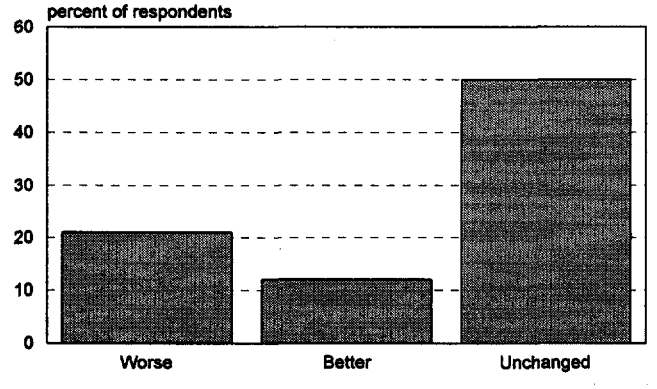
External reorganization (formal registration as a new organizational form) and distribution of shares to members must be followed by internal reorganization involving reallocation of resources (land,

assets, labor) to relatively autonomous market-oriented subunits. In 75% of farm enterprises the new subdivisions are reported to enjoy independence in planning and managing their production activities, but this is practically the limit of their autonomy. In less than 5% of cases the subdivisions are responsible for input purchasing and product marketing, or have their own administrative staff, and in only 7% of farm enterprises the subdivisions have freedom to hire and fire their workers. Practically none of the subdivisions have their own bank account.

In line with this extremely limited autonomy of the newly formed subdivisions, 96% of farm enterprises report that they have retained collective or central management organs responsible to a different extent for overall production planning and management for the entire enterprise, banking relations and finances, coordination of the production activities of the subdivisions, provision and allocation of commonly owned machinery and equipment to subdivisions, and labor management. The overall impression is thus of subdivisions that in practice have extremely limited autonomy within the collective framework, which has retained most of its traditional functions.

In over 60% of farm enterprises surveyed the new units were formed simply on the basis of the old production subdivisions, and in over 80% of cases the new units were allocated the land and assets that they had on the old balance sheet. The individual shareholders did not exercise their freedom of choice and freedom of association when creating the new units, and the asset base of the new units was not formed by shareholders voluntarily pooling their land and asset shares. Shareholders were simply "assigned" to their old organizational subdivisions. There were no radical changes in labor relations either: most managers report that their farm enterprise continues to be committed to a life-time employment policy for its members and do not acknowledge disguised unemployment on their farm.

Fig. 1.2. Employees' Assessment of Reorganization Outcomes



Source: 1996 survey; average frequency score of assessments by five measures.

Employees of farm enterprises fail to discern any significant changes in the way their farms are operated and managed. According to half the respondents, no actual change has so far taken place in the general situation on the farm, in work discipline, and in relations within the collective. Nor has the individual worker's motivation increased following reorganization (Fig. 1.2). About 20% on average consider that the situation after reorganization of the farm is worse than originally, and only 12% report improvement of some kind. The assessment of reorganization outcomes by employees of farm enterprises strengthens the feeling based on previously described findings that so far changes in large farms have been largely superficial, and have not touched on the systemic flaws inherent in the socialist system of agriculture.

Obstacles to Starting a Private Farm

Rural residents do not rush to exercise the newly found right of leaving the collective with land and assets. Only 6% of respondents indicate that they would like to exit the farm enterprise with their share of land and assets and establish a private farm. Nearly half the respondents (47%) are even opposed in principle to the right of exit with land and asset shares, although this right is protected by existing legislation. About one-quarter of respondents support the right of exit, but mostly with qualifying conditions ("later," "when the economy has stabilized," "when the legal framework for private farming is in place," "if machinery is available," "if government provides support programs for machinery and credit," etc.).

The reluctance to leave the collective enterprise can be understood by examining the capital and land resources that are needed, in the view of the rural population, for the establishment of a private farm (Table 1.2). Employees of farm enterprises estimate that a private farm can be established on 50 ha of land, with a capital of 10 billion krb. ($50,000 at the exchange rate prevailing in the first quarter of 1996). According to private farmers surveyed, the minimum requirements to start a private farm typically include 50 ha to 100 ha of land and a capital of 5 billion to 20 billion krb. ($25,000-$100,000).

Table 1.2. Starting a Private Farm: Through the Eyes of Employees and Private Farmers

	Land	Assets
Minimum resource requirements	50 ha	$50,000
Available to average family	12 ha	$3,000

Source: Author's data.

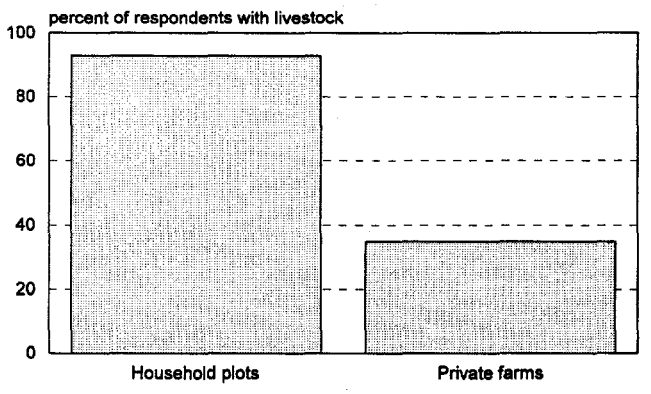
Land requirements of 50 ha per farm exceed by a substantial margin the total family entitlement, which includes the household plot (0.5 ha) and two or three land shares (10-15 ha). Rural residents thus do not envisage any possibility of establishing a private farm without acquiring land from additional sources, which in the absence of land markets are not readily identifiable or available. The capital requirements cited by the respondents are even a more daunting obstacle: with annual family incomes of $1,000 and asset shares valued at about $700 per adult person, a capital base of $50,000 for a new farm is inconceivable. Although the estimates of resource requirements that emerge from the survey are probably influenced by intentionally biased reports in the media and do not represent independent estimates of the peasants, they certainly influence their thinking and their decisions, restraining any motivation for change in the traditional organization of farms.

Production and Sales in the Individual Sector

Households of farm employees generally diversify their production between crops and livestock. Fully 90% of employee households produce both crops and livestock products. Among independent

private farmers, on the other hand, all respondents grow crops, but only 35% have livestock. The survey thus reveals a significant shift of the new private farmers away from the traditional livestock orientation of subsidiary household plots (Fig. 1.3). Among private farmers without livestock, two-thirds give lack of facilities and shortage of capital as the reasons for not going into livestock production. Less than 20% cite depressed prices and low profitability as the reason.

Fig. 1.3. Frequency of Livestock Production in Individual Sector



Source: 1996 survey

A typical household plot is used mainly for growing potatoes, vegetables, and cereals (wheat and barley). Half the average plot of 0.5 ha is under potatoes and vegetables and one-third is under cereals. Yet about 7% of land in an average household plot is sown to industrial crops (sugar beets and sunflower), which is an indication of a tendency toward commercialization of household production. The cropping pattern in private farms is completely different from that in household plots (Table 1.3). More than 70% of land on an average private farm is under cereals (mainly wheat, barley, and buckwheat), and the two typical industrial crops, sugar beet and sunflower, take up nearly a quarter of the land on an average farm. Potatoes and vegetables, the main staple of household plots, are much less prominent for private farmers. The crop mix of private farms thus emphasizes cash crops (cereals, sugar beet, sunflower) at the expense of crops traditionally used for family consumption (potatoes and vegetables).

Table 1.3. Cropping Pattern in Private Farms and Household Plots (percent of cropped area)

	Private farms	Household plots
Cereals	73%	32%
Sugar beets and sunflower	23%	7%
Potatoes and vegetables	4%	48%
Fruits and other crops	--	13%
Total cropped	100%	100%

Source: Author's data.

So far, there is no clear yield advantage for crop production in the individual sector: the achieved yields for wheat, potatoes, sugar beets, and vegetables are not substantially different from the national averages. Milk yields, however, are significantly higher in the individual sector: households in the survey averaged 2,900 liters per cow per year over the last three years, and the yields reported

by private farmers increased over time from 3,200 liters in 1993 to 3,500 liters in 1995. The results achieved in the individual sector are clearly better than the Ukrainian average, which show a downward trend, averaging 2,200 liters in recent years.

Originally, under the Soviet regime, household plots were intended as a source of subsidiary food production for families of farm-enterprise employees, whose main income was derived from wages and salaries. This is the origin of the widely accepted view that household plots represent pure subsistence agriculture. Yet the survey indicates the output of household plots is also channeled to commercial sales, and 62% of farm employees' households earn some income from sales of farm products, both crops and livestock. The households in the sample sell fully 80% of the beef they produce, nearly 40% of the pork, and over 20% of the milk (Table 1.4). Both the frequency and the volume of sales of livestock products are much higher than for crop products, as most crops are produced for family consumption.

Table 1.4. Commercial Orientation of Employee Households: Percent of Output Sold

Crop products	%	Livestock products	%
Wheat	20%	Pork	38%
Potatoes	7%	Beef	81%
Vegetables	17%	Milk	21%
Sugar beets	65%		
Sunflower	22%		

Source: Author's data.

Sales of farm products constitute an important source of supplementary income for employee households. Income from the household plot represents 20% of total family income, and is second in importance only to wages, which account for nearly 70% of family income. An average employee household earned 55 million krb. ($370) from sale of farm products in 1995 (Table 1.5).

Table 1.5. Sales Revenue of Individual Producers: 1995 (average per farm)

	Million krb.	$
Employee households	55	$370
Private farms	1,020	$6,800

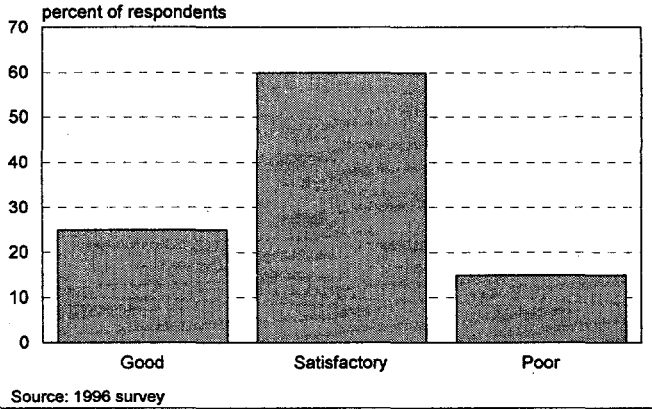
Source: Author's data.

Private farms produce much more than household plots and therefore have a much stronger commercial orientation. The average total revenue from sale of products and services in 1995 was

1,000 million krb. per farm, or nearly $7,000 (Table 1.5). Allowing for production costs, an average private farm earned an accounting profit of 400 million krb., or a margin of 40% on sales. The only factor that affects revenues in the sample of private farms is the size of land holdings: on average the revenue increases by 23 million krb. ($150) for each hectare of arable land. There is no relationship between revenues and the size of the family, the number of family members employed on the farm, and whether or not the farm keeps livestock. The profit of course is strongly correlated with sales revenue and thus increases with the increase of land holdings. Large farms report a higher profit than small farms, but there is no significant relationship between profit and other farm characteristics.

Private farmers identify farm inputs as the main component of production costs (34% of the total). Capital maintenance and depreciation expenses account for another 26% of production costs. Labor costs (including hired labor and the labor of farm members) are 17%, and interest charges are 6% of total production costs.

Fig. 1.4. Assessment of Farm Performance by Private Farmers



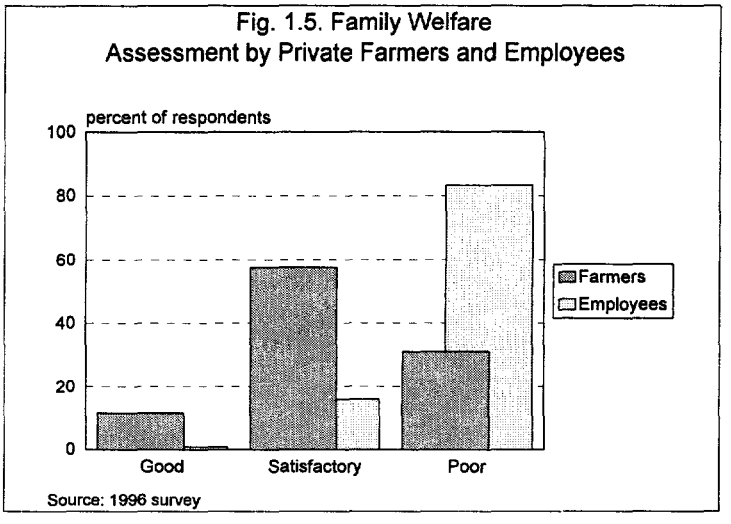
Source: 1996 survey

Unfortunately, the profit calculations are based on historical accounting, and do not necessarily represent the real earnings in an inflationary environment. Timing differences of costs incurred and revenues realized are crucial for correct estimation of profitability in an inflationary environment, and should be allowed for when evaluating the profits in an environment with galloping inflation. Adjustment for these factors may radically change the reported profitability for the worse. Nevertheless, private farmers appear quite satisfied with the performance of their farms: over 85% classify farm performance as satisfactory or better (Fig. 1.4). As a clear indication of a generally satisfactory family situation, about 50% of private farmers are planning to build a new house or a road to their farm in the immediate future.

Impact of Reorganization on Welfare of Rural Families

The survey highlights a major difference in optimism and level of well-being between independent private farmers and families of employees in various collective farm enterprises. Among private farmers, the family welfare is rated as satisfactory or good by 65% of respondents, and as poor by only 30% (Fig. 1.5). Among farm employees, on the other hand, fully 75% of respondents consider their present living standard unsatisfactory, and only 15% report that the living standard is satisfactory. Practically nobody characterizes the present living standard as good. Compared with

three years previously, the living standard of farm employees is worse according to 85% of respondents.



The general pessimism of farm employees can be understood by examining the levels of family income that emerge from the survey. The farm employees' household income in the sample was about $1,000 per year in 1995, which gives an average per-capita income of about $280 per year. Respondents estimate that a person needs about $150 *per month* to maintain a normal standard of living, which is roughly 6 times what the households in the sample actually earn. Even if the answers are interpreted as relating to the needs of the entire family, and not per capita, the subjective estimate is almost double the actual family income.

Consistently with this gap between actual and required income, half the respondents report they cannot satisfy even the minimum consumption needs of their family, and almost all the rest report that they make just enough for necessities and cannot afford anything beyond that. Fewer than 2% of respondents report that their families have no material difficulties.

Despite the better well-being of private farmers and the general dissatisfaction of farm employees with their current standard of living, employees are still reluctant to exit the collective and start a private farm. In a risky environment characterized by legal uncertainty, traditional lack of confidence in the government, and inadequate market services, rural residents prefer the safety of a collective umbrella to potentially higher returns of independent entrepreneurship.

* * *

The process of land reform and farm restructuring in Ukraine is far from progressing vigorously. The only major accomplishment is the transfer of state land to collective ownership, and even this undertaking remains uncompleted. Distribution of land shares to individuals in collective farm enterprises is less than half complete, and internal restructuring of the formally reorganized farm enterprises has hardly begun. Farm employees report that the overall situation in their enterprise has largely remained unchanged after reorganization. In the few cases when the farm has reorganized into smaller structural subunits, the autonomy of these subunits is extremely limited and the enterprise in effect continues to be run by central management.

Two encouraging signs in the midst of these gloomy conclusions are the increasingly commercial orientation of household plots in collectives and the generally profitable situation of independent private farms established outside the collectivist framework. Yet despite the generally favorable well-being of private farmers, there is no rush of farm employees to exit their collectives and go into private farming. Farm employees prefer to stay in collectives, at least for the time being, despite the generally disastrous assessment of family well-being and family income. This may be the case of "better the devil we know," as peasants the world over are notoriously conservative and hate exposing themselves to new risks.

After 5 years of reforms, only 15% of agricultural land in Ukraine is cultivated by the individual sector, and most of Ukrainian agriculture remains effectively collectivized, despite the diversity of organizational forms that have emerged since 1992. Moreover, the growth of private farming has slowed down considerably since 1994, and the number of private farms appears to have stabilized, at least temporarily, at 33,000 with 2% of agricultural land and about the same share of agricultural product. The overall feeling from these national data and the findings of the survey is that land reform in Ukraine is in a danger of entering a stagnation phase. The government must make every possible effort to create the necessary conditions for injecting the stagnating reforms with renewed vigor.

2

Legal Framework for Land Reform

March 15, 1991 marked the beginning of land reform in Ukraine. On that date, all land in the country (both agricultural and non-agricultural) became subject to reform in accordance with a resolution of the Supreme Soviet passed in December 1990, when Ukraine was still a Soviet Socialist Republic and part of the USSR. That first resolution, "On Land Reform", was followed by a long list of laws, presidential decrees, and government resolutions that have gradually created a comprehensive legal framework for land reform in Ukraine (Table 2.1).

Table 2.1. Chronology of Land Reform Legislation in Ukraine

Resolution of Supreme Soviet of Ukraine "On Land Reform" (Dec. 18, 1990; amended May 5, 1993)
Law on Forms of Land Ownership (Jan. 30, 1992)
Law on Collective Agricultural Enterprise (Feb. 14, 1992; May 4, 1993)
Resolution of Supreme Soviet of Ukraine "On Acceleration of Land Reform and Privatization of Land" (March 13, 1992)
Land Code (March 13, 1992 as amended; original version Dec. 18, 1990)
Law on Peasant Farms (June 22, 1993 as amended; original version Dec. 20, 1991)
Law on Payment for Land (July 3, 1992)
Government Decree "On Privatization of Land Plots" (Dec. 26, 1992)
Government Decree "On State Taxes" (Jan. 21, 1993)
Resolution of Supreme Soviet of Ukraine "On the Socio-Economic Situation in Ukraine and Measures for Its Stabilization" (Jan. 27, 1993)
Law on Amendments and Additions to Some Laws of Ukraine (May 5, 1993)
Government Resolution "On Priority Measures for Preparation and Implementation of Land Reform" (No. 334, May 7, 1993)
Presidential Decree "On Immediate Measures for Acceleration of Land Reform in the Sphere of Agricultural Production" (No. 666, Nov. 10, 1994)
Government Resolution "Procedure for Monetary Valuation of Agricultural Land and Land in Settlements" (No. 213, March 23, 1995)
Presidential Decree "On Privatization and Leasing of Plots of Non-Agricultural Land for Entrepreneurial Activity" (July 12, 1995)
Presidential Decree "Regulations for Division into Shares of Land Transferred to Collective Ownership of Agricultural Enterprises and Organizations" (No. 720, Aug. 8, 1995)

Source: Author's data.

Because private ownership of land was not recognized in the Soviet Union, the original goals of land reform were formulated in terms of traditional Soviet forms of land tenure, such as lifetime inheritable possession for individuals and permanent use rights for farm enterprises. Collective and private forms of land ownership were legitimized alongside state ownership in January 1992 by the Law on Forms of Land Ownership. The goals of land reform were accordingly reformulated in May 1993 with the following language:

> "Land reform is a component of the economic reform implemented in Ukraine as part of the transition of the economy to market relations. The task of this reform is redistribution of land and its transfer to private and collective ownership, as well as usership by enterprises, with the purpose of creating equal conditions for the development of different forms of farming, emergence of diverse forms of economic organization, and efficient use and protection of land." (Law of Ukraine on Amendments and Additions to Some Legislative Acts of Ukraine, Article 3, May 5, 1993).

Collective and Private Land Ownership

The January 1992 Law on Forms of Land Ownership eliminated the monopoly of the state on ownership of land, which had been a feature of the Soviet system since 1917. Exclusive state ownership was retained for a fairly restricted list of land categories (Table 2.2). Some of these categories are quite understandable by universal standards (land in common use, nature reserves, historical and cultural monuments), whereas others are dictated by a mixture of political and economic considerations (grapes for the wine industry and large-scale fruit orchards are regarded as a national strategic asset). All other lands could be transferred into collective and private ownership.

Table 2.2. Categories of Land Remaining in Exclusive State Ownership

Land in common use in villages and towns
Land used by the mining industry, transportation, communication, and defense
Nature reserves, recreational lands, health resorts, historical and cultural monuments
Forests and water bodies (except small areas up to 5 ha included in the holdings of peasant farms)
Land of agricultural research and teaching institutions with their experimental stations
Land of state farms specializing in seed selection, elite-seed production, livestock selection and pedigree livestock breeding
Land of state farms specializing in hops, essential oil plants, medicinal plants
Land of state farms specializing in fruits and grapes

Source: Author's data.

Mechanisms for transferring land to collective and private ownership were introduced in March 1992 by the new Land Code, which defined the categories of producers entitled to hold land in these new forms of ownership. Private ownership was intended for individuals, while collective ownership was intended primarily for legal bodies, such as collective agricultural enterprises, agricultural cooperatives, agricultural joint-stock societies and partnerships (Table 2.3). Yet even collective ownership is defined in the Land Code as ultimately the ownership by the individual members of the collective, and disposition of collectively owned property must be decided by a general meeting of individual members.

A highly important attribute of collective ownership of land is the right of each member to exit the collective with a physical plot of land, corresponding to the individual share of collective property. This provision establishes a fundamental mechanism for transferring land from collective to private ownership, and guarantees the individual's freedom of choice in the future. A collective is no longer a closed entity, as it was during the Soviet era, and individuals are now entitled to leave the collective taking their share of land with them.

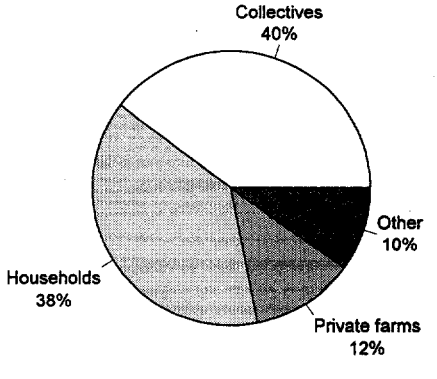
Table 2.3. Recipients of Private and Collective Ownership of Land According to March 1992 Land Code

Private ownership	Collective ownership
Individuals for	Collective agricultural enterprises
Establishment of peasant farms	Agricultural cooperatives
Subsidiary household farming in the village	Agricultural joint-stock societies
Construction of house and farm buildings on household plot	Agricultural partnerships
Orchards and gardening by urban residents	Gardening societies
Construction of second summer home or garage	Former state farms

Source: Author's data.

The Land Code established the principle of free transfer of land from the state to collective and private ownership. The only exception to transfer of land without payment are private farms: individuals receiving land in private ownership for the establishment of a peasant farm must pay the state for holdings that exceed the average land share calculated on a per-capita basis for each district.

Fig. 2.1. Distribution of Reserve Land: 1996



Source: Department of Land Cadastre, Kiev

Transfer of land to collective and private ownership is managed by local (district-

and village-level) authorities. Officially, the process begins when an individual or a collective makes a written application. The Land Code stipulates that the process should take no more than one month. Farm enterprises receive in collective ownership most of the land that they actually cultivate. Individuals receive land from a special reserve created by extracting about 15% of the collectively cultivated land. Reserve land that has not been actually allocated to individuals remains in use by the collective, pending a future decision about its ultimate disposition. As of 1996, collectives continue to cultivate under such temporary arrangements 40% of the total reserve of 6.2 million ha, while individuals have received only 50% of the earmarked lands (Fig. 2.1).

Restrictions on Rights of Private Land Owners

Individuals may receive land in private ownership for the establishment of an independent peasant farm outside the collectivist framework. Families in collectives may receive private land for their household plot, in addition to their share of collective property. Other legitimate purposes to receive private land include construction of a house or farm buildings in the village, construction of a small summer house or a garage, and establishment of a small garden or orchard for use by urban families (see Table 2.3). However, the 1992 Land Code severely circumscribes the rights of private land owners. Private land may not be sold by owners within the first six years. During the six-year moratorium, privately owned land may be alienated only to the local authorities from which it was originally received. The moratorium applies both to land received without payment and to excess land purchased from the local authorities. In the latter case, the individual is reimbursed when land is alienated. In effect, land classified as privately owned may only be passed in inheritance during the moratorium, and the rights associated with this form of property are not different from the traditional Soviet form of land tenure called "inheritable lifetime possession."

Table 2.4. Restrictions on Private Ownership of Land According to the 1992 Land Code

Six-year moratorium on selling of privately owned land
Land must be used for farming
Land must be farmed continuously
Sound ecological and soil protection practices must be observed
Land may be leased out for a term not exceeding 3-5 years

Source: Author's data.

The six-year moratorium on the right to sell privately owned land is not the only restriction imposed on private land owners (Table 2.4). They are allowed to use their land only for farming; the land must be cultivated in compliance with sound ecological and soil protection practices; the land must be cultivated continuously, with no break of more than one year in active farming. If these conditions are not met, the private land will be taken away from its owner by administrative action of local authorities. While these requirements may sound reasonable in the context of national interests, the

sanction invoked by their violation – taking the land from its rightful owner – is totally inconsistent with the notion of private ownership and with market mechanisms of land management.

The Land Code specifically addresses the leasing of land, perhaps as a substitute for buying and selling. During the Soviet era, land could be leased only from village and district authorities, which managed all state lands. With the introduction of collective and private land ownership, it became possible to lease land from non-state owners. Although the Land Code allows long-term leasing for up to 50 years, this apparently applies only to state land. Private land owners may lease out their land for a term of up to three years only (this term is extended to five years in case of temporary incapacity, army service, or enrollment in an educational institution). Land in collective ownership may be leased out for a term not exceeding five years. In both cases, land may be leased only for farming, and not for any other use. Other than that, the Land Code stipulates that "the conditions, the term of the lease, and the payment for leasing of land will be negotiated by the parties," which sounds a little hollow in the face of the severe legal restrictions on leasing of land. The various legal restrictions on both selling and leasing of private land constitute a serious obstacle to the development of land markets and the emergence of efficient farms of optimum size. Terms of three to five years are obviously too short for any major investment in farming, and the legal approach undermines the rationale for leasing as an alternative channel of efficient reallocation of land use.

An attempt to partially eliminate the moratorium on buying and selling of private land was made with the government resolution "On Privatization of Land Plots" signed by Leonid Kuchma, then the Prime-Minister of Ukraine, in December 1992. This resolution, while basically intended to initiate transfer of household plots to private ownership, included explicit permission for buying and selling of household plots, summer-house and garage plots, and other small plots of privately owned land, except private farms. However, the article allowing buying and selling of private land was overturned by the Supreme Soviet a month later, in January 1993.

Another attempt to alleviate the moratorium on land sales, or at least replace it with economic disincentives, was included in the government resolution "On State Taxes" adopted in January 1993, practically the same week when the Supreme Soviet overturned the permission to sell household plots. This resolution introduced a sliding tax rate on land sales depending on the length of time the land has been cultivated by the present owner: if land is sold within one year of its transfer to private ownership, the seller pays a tax equal to 80% of contract value; if, however, land is sold after six years, the tax rate drops to 5% of contract value (Table 2.5). None of these reforms has ever been implemented because of strong opposition in Parliament.

Buying and selling of land is a hotly debated and emotionally charged issue in Ukraine. Liberal politicians and academics advocate "treating land as a tradable commodity," while the conservatives maintain that conversion of sacred national wealth into a tradable commodity will exacerbate the crisis in agriculture and lead to disaster. The latest attempt to remove the six-year moratorium and allow a land market was made in October 1996, when a new draft Land Code was submitted to Parliament. However, the draft was rejected in March 1997, despite intense pressure from the World Bank and the IMF, who had made the abolition of the moratorium on land sales a precondition for

continued international assistance to Ukraine. Thus, despite repeated attempts over the years, the moratorium on land sales remains in force, and land markets can develop at this stage only through leasing of private and collective land.

Table 2.5. Proposal for Sliding Tax Rate on Land Sales
(Government Resolution "On State Taxes", Jan. 21, 1993)

Time from transfer of land to private ownership to land-sale transaction	Tax as percent of contract value
Less than 1 year	80%
Between 1 and 2 years	60%
Between 2 and 4 years	50%
Between 4 and 6 years	30%
More than 6 years	5%

Source: Author's data.

Distribution of Land Shares

Most land in Ukraine is in collective, not private, ownership. Privately owned land, including subsidiary household plots and peasant farms, accounts for about 15% of agricultural land, while more than 65% is in collective ownership. Collective land actually belongs to the individual members of the collective, and each member (including both active members and pensioners) is entitled to an equal share of land. The 1992 Land Code establishes a procedure for calculating the size of an average land share, which essentially involves dividing all available land by the adult rural population (Table 2.6). However, the Land Code does not elaborate the rights of shareowners beyond an individual's right to receive a physical plot of land corresponding to the share on exit from the collective.

Table 2.6. Categories of Rural Population Included in Calculation of Average Land Share

Active workers in agriculture
Employees of the social sphere in the village (including teachers, medical workers, transport and communication employees, employees in trade and village services, village police and administration)
Pensioners who previously worked in agriculture and live in the village
Pensioners of the village social sphere

Source: Author's data.

Distribution of land shares was a neglected topic during the presidency of Leonid Kravchuk, and it began to get attention only after the election of President Kuchma. The main issues relating to land shares are covered by two presidential decrees: "On Immediate Measures for Acceleration of Land

Reform in the Sphere of Agricultural Production" (November 1994) and "Regulations for Division into Shares of Land Transferred to Collective Ownership of Agricultural Enterprises and Organizations" (August 1995). The first of the two decrees instructed the local authorities to transfer the land used by farm enterprises from state to collective ownership, and after that to expedite the division of collectively owned land into individual shares. The decree thus prescribed a two-stage procedure: transfer of state-owned land to collective ownership, followed by transformation of undivided collective ownership into collective-shared ownership through distribution of land shares in the form of individual certificates of entitlement.

The division of collectively owned land into shares is based on the principle of equal distribution to all beneficiaries, adjusted for quality. The land share represents the right of an individual to private ownership of an underlying plot of land, without physical demarcation of that plot in the field or even on a map. The right to a land share may be bought and sold, leased, given in gift to another person, exchanged, bequeathed, or even mortgaged. Land shares are thus more tradable at present than actual land plots, at least on paper. There is no information on the extent to which individuals buy and sell the right to land shares.

The November 1994 presidential decree reaffirmed the fundamental right of individual exit with land, first established in the 1992 Land Code. The decree states that every individual is free to leave the collective enterprise with a physical plot of land, and that the individual's right of private ownership will be certified by an official title. On the other hand, the decree also set up a mechanism for internal reorganization of collective enterprises by stating that owners of land shares may voluntarily pool their shares to create various associations, partnerships, cooperatives, or other farming organizations. The land shares may be invested in the equity capital of the enterprise, or alternatively leased to the enterprise for a definite term.

Payment for Land

Although farm land is given in private ownership without any payment, the use of land is subject to an annual tax. The Law on Payment for Land (July 1992) establishes a table of tax rates based on the variability of land quality across provinces. The tax rate for arable land in Ukraine varies between 89 krb. per hectare per year and 161 krb. (between $0.50 and $1.00 at the exchange rate that prevailed at the time). The tax rate for pastures and meadows is set at a much lower level, between 20 krb. and 67 krb. per hectare per year ($0.15-$0.35). Lease payments for land are linked to the land tax, and are not allowed to exceed the amount of tax on the corresponding plot of land. This may be a valid strategy for land leased out by the state, but it is certainly a major disincentive for leasing land by private owners, who will collect from lessees just enough to cover their tax obligation to the state.

The Law on Payment for Land also formalizes the notion of "normative price of land", which is set at 100 times the land tax, or about $50-$100 per hectare. This price is used when land is sold by the state to individual users, or when valuation of land is required for inheritance or other purposes that

involve state interests. Curiously, the law recommends that banks use the normative price for establishing the mortgage value of land for allocation of credit.

Both tax rates and normative land prices are quite arbitrary. An attempt to arrive at an economic valuation of agricultural land in Ukraine on the basis of scientific principles was undertaken by the Agricultural Academy of Sciences in 1995. The price of land was calculated as the present value of the stream of surplus cash flows from grain production assuming a payback period of 33 years (this is equivalent to a 3% annual discounting rate). Surplus grain production (after recovery of all costs) used in these calculations was around 900 kg of grain per hectare, which is 30% of long-term grain yields in Ukraine. This technique produced an average value of about $2,000 per hectare, which appears to be very high by world standards, and exorbitantly high when compared to the previous normative price of about $100 per hectare.

The valuation procedure suffers from a number of weaknesses, including uncertainty about surplus grain quantities and grain prices used in the calculation, but the main problem is the extremely long payback period assumed. The Ukrainian experts justify the low discounting rate of 3% by the fact that land, unlike other means of production, is a very stable investment that continues producing over a very long period. This approach, however, completely ignores the considerable risks and uncertainties of agricultural production, which are observed everywhere in the world and are especially acute in transition economies. If the discounting rate is raised to 10% per annum as a moderate adjustment for risk in agriculture, the value of land drops to about $600 per hectare, which looks much more reasonable, although possibly still too high for the conditions in Ukraine.

The land values calculated by the Ukrainian Academy of Sciences were adopted as the new normative prices by government resolution of March 1995. Although these land values are derived by a scientifically plausible procedure, they are merely calculated values based on a variety of assumptions. As such, they do not necessarily have a relation to true market prices despite being expressed in money terms. Ultimately, valuation of land must be based on market transactions driven by supply and demand among free economic agents.

3

Implementation of Reform and Sectoral Performance

Given the objectives of land reform, its implementation should be judged in the following dimensions:

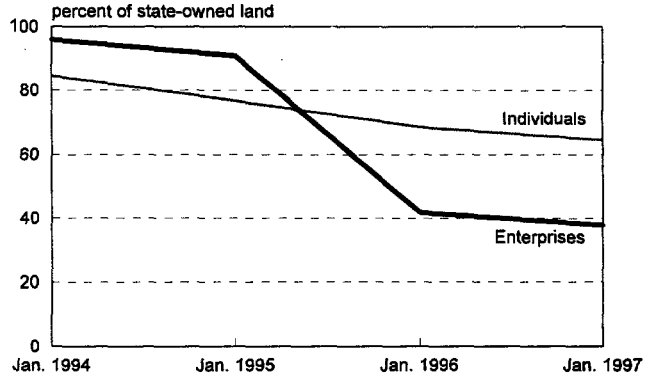
- transfer of land from the state to collective and private ownership;
- distribution of land shares within collectives;
- reorganization of farm enterprises into new forms;
- creation and spread of private farming.

The present chapter reviews these issues for the national level, using official country statistics. This broad picture provides a backdrop for the following chapters, which depict the farm-level findings of the World Bank survey.

Changes in Tenure and Ownership of Land

As of early 1996, individual users (households and private farmers) cultivate 15% of agricultural land in Ukraine. Of the remainder, 65% is cultivated by various collective enterprises and shareholding farms and 17% by state farms (Table 3.1). The proportions have not changed dramatically since 1993, although the individual sector shows a steady (but fairly slow) increase over time.

Fig. 3.1. Share of State Land in Enterprises and Individual Sector



Source: Department of Land Cadastre, Kiev

Unfortunately, the fact that 17% of land is managed by state farms does not mean that only 17% of land remains in state ownership. Much of the land cultivated by collective enterprises and even by individual farmers is still state-owned. According to data for January 1997, 38% of land in collective

enterprises is still in state ownership, and the enterprises have not yet received title to much of the land they cultivate. Among individual users, who by law expect to receive land in private ownership, the transfer of ownership rights is even less advanced: only 35% of land in individual use is privately owned, whereas 65% of land cultivated by individuals is still state land (Table 3.2).

Table 3.1. Distribution of Agricultural Land Among Users: 1994-1996

Land Users	Percent of agricultural land		
	Jan. 1994	Jan. 1995	Jan. 1996
Total area, thou. ha	41,890	41,862	41,853
Collective farm enterprises	60.8	61.9	63.1
State farms	20.6	20.0	17.0
Joint-stock societies, partnerships, coops	0.7	0.9	2.0
Individuals	13.4	14.6	15.3
Households	11.9	12.8	13.4
Farmers	1.5	1.8	1.9
Other users and reserve	4.5	2.6	2.6

Source: Department of Land Cadastre, Kiev.

Table 3.2. Land Ownership by Users, Jan. 1994 and Jan. 1997 (based on total land area)

	All land		Enterprises		Individual users	
	1.94	1.97	1.94	1.97	1.94	1.97
Total area	60355	60355	40806	39786	5934	6966
State ownership	57823	33142	39189	15038	5019	4502
Collective ownership	1622	24767	1615	24743	6	5
Private ownership	911	2447	2	5	909	2442

Source: Department of Land Cadastre, Kiev.

Formal transfer of individually cultivated land to private ownership is progressing steadily, but slowly (Fig. 3.1). The transfer of land from state to collective ownership accelerated in 1995, following the two presidential decrees of November 1994 and August 1995. As a result, the share of state-owned land in large farms decreased from 91% in 1994 to 42% in 1995 (Fig. 3.1). At the same time, the number of large farms that received official title to collective ownership of their land increased rapidly from 10% at the end of 1994 to 98% by early 1997 (Table 3.3). However, farms entitled to receive land in collective ownership control only about 60% of the land, which explains the very substantial proportion of enterprise land that has not been destatized. The impressive

percentage of farms that have received land in collective ownership (98% as of January 1997) is thus misleading, as it ignores the existence of some 2,000 farms that for various reasons are not entitled to destatization of their land.

Table 3.3. Transfer of Land from State to Collective Ownership

	Collectives entitled to receive ownership of land	Received title to collective ownership of land	
Jan. 1995	9977	1012	10.1%
Oct. 1995	9897	4374	44.2%
Aug. 1996	10152	9749	96.0%
Jan. 1997	9370	9176	97.9%

Source: Informatsiya po khody razderzhavlevaniya i privatizatsii zemel' sel'skokhozyaistvennykh predpriyatii, Department of Land Cadastre, Kiev.

Diversity of Organizational Forms

Another manifestation of the ongoing agrarian reforms is the increasing diversity of organizational forms in Ukrainian agriculture. In 1990, collective and state farms were the only two organizational forms in the farming sector. Today, there is a much greater range of different organizational forms, including agricultural cooperatives, joint-stock societies, partnerships, farmers' unions, and most notably individual private farmers (Table 3.4).

Table 3.4. Organizational Forms in Ukrainian Agriculture (beginning of year)

	1991	1992	1993	1994	1995	1996
Sovkhozes (state farms)	2438	2181	2160	2000	1960	1520
Kolkhozes (collective farms)	8354	8639	5750	2680	450	450
KGSP (collective farm enterprises)	--	--	--	7385	6568	7344
Farmers unions (associations)	--	11	36	178	346	1159
Agricultural cooperatives	--	308	320	345	486	486
Joint-stock societies	--	26	89	184	196	295
Private farms	80	2100	14700	27700	32000	34800
Interfarm enterprises	1249	1230	1220	1210	950	870

Source: Ukrainian Agrarian Institute.

The number of the traditional socialist forms (sovkhozes and kolkhozes) declined from nearly 11,000 in 1991 to less than 2,000 in 1996. It is less encouraging to note, however, that most collective and state farms reorganized in the new legal form of KGSP, or collective farm enterprise. Only a relatively small proportion adopted more innovative organizational forms, such as joint-stock society or farmers' union.

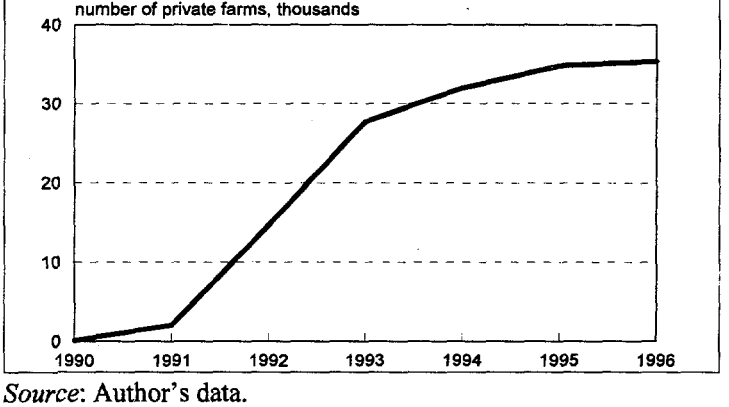
It thus seems that the reorganization process so far has been purely formal, and amounts to merely "changing the sign on the door." Ukrainian farms still face the real task of internal restructuring to adapt their operations to market principles. Internal restructuring must include not only distribution of land and asset shares to members, but also voluntary regrouping of shareholders into relatively small functional units, where the new owners will feel greater responsibility and accountability for performance.

Private Farming

While traditional large farms reorganize mainly into other collective forms, one of the most remarkable characteristics of the transition to the market is the creation of independent family farms. These farms are established on individual land that will eventually pass into private ownership, and unlike subsidiary household plots, the other component of the individual sector, they operate outside the collectivist framework. The number of such private farms increased from zero under the Soviet regime to over 35,000 by 1997 (Table 3.5). They control over 800,000 ha, or 2% of the agricultural land in Ukraine. The average farm size is 24 ha. According to 1994 statistics, 45% of private farms are between 4 ha and 20 ha, and 20% are larger than 40 ha.

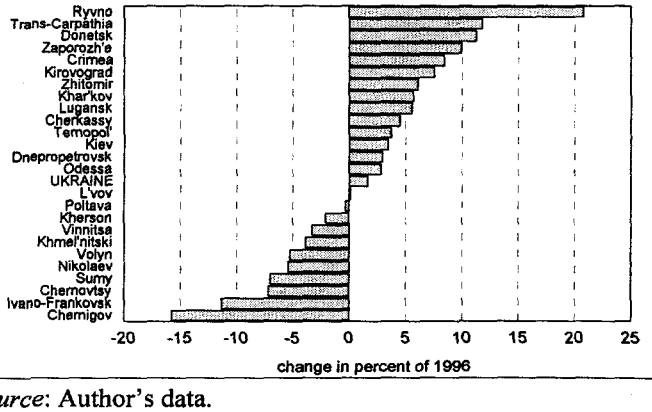
In the last two or three years, however, the growth of private farming has tapered off (Fig. 3.2). The rapid increase of private farms observed between 1991 and 1993 did not persist, and their number appears to have

Fig. 3.2. Growth of Private Farming



Source: Author's data.

Fig. 3.3. Change in Number of Private Farms 1996-97



Source: Author's data.

stabilized around 30,000-35,000 since 1995. In 1996, the number of private farms actually declined in 10 out of 25 provinces (Fig. 3.3), where the number of new entrants into private farming did not offset the number of unsuccessful farmers liquidating their operations.

Table 3.5. Growth of Private Farming in Ukraine: 1990-1997

	Number of private farms	Agricultural land in private farms		Average farm size, ha
		thou. ha	percent of total	
Jan. 1991	82	2.0	--	24.4
Jan. 1992	2,098	39.7	--	18.9
Jan. 1993	14,681	292.3	0.8	19.9
Jan. 1994	27,739	558.2	1.5	20.1
Jan. 1995	31,983	699.7	1.7	21.9
Jan. 1996	34,778	786.4	1.9	22.6
Jan. 1997	35,353	835.0	2.0	23.6

Source: Department of Statistics, Kiev.

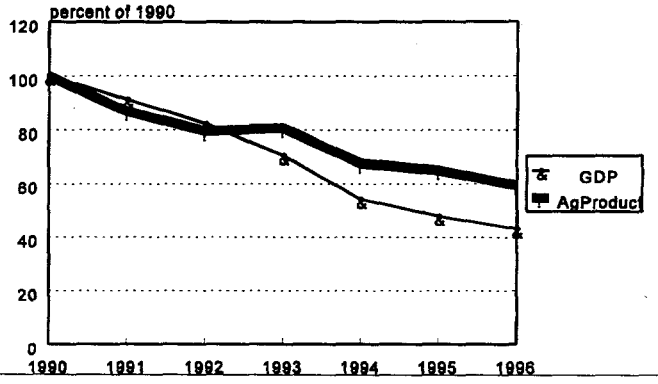
While farm bankruptcies as such are an attribute of the process of natural selection in a market environment, the farmers' lobby in Ukraine usually attributes these somewhat disappointing developments to lack of government support, inadequacy of market services, and generally unfriendly political establishment and public opinion. Another possible explanation of the slower growth trend visible in Fig. 3.2 is that private farming in Ukraine is reaching an equilibrium under present circumstances, when in the absence of adequately functioning market services individuals prefer the security umbrella of collectives to the potentially higher returns of independent private farming. It can be argued that private farming will renew its growth only when the government introduces appropriate reforms ensuring normal operation of essential market services for farmers, such as input purchasing, product marketing, credit, supply of farm machinery, and transportation.

Decline of Agricultural Production

The initial expectations that market-oriented economic reforms would produce a fast supply response leading to rapid recovery have not materialized in any of the former socialist countries. In Ukraine, as in most other transition economies, the years since 1990 have been characterized by an overall decline in economic activity, and in particular by a decline in agricultural production. The gross domestic product in Ukraine dropped by 1996 to 43% of its 1990 level. Agricultural production declined somewhat less precipitously, dropping to 59% of the 1990 level (Fig. 3.4). This trend observed in many of the former socialist countries is apparently an unavoidable aspect of the complex transition process.

Despite the slower decrease in the volume of agricultural production, the share of agriculture in the economy calculated at current prices shrank from about 24% in 1990-1991 to 12% in 1996 (Table 3.6). This is attributable to the highly unfavorable terms of trade experienced by agricultural producers in this period (see the discussion of "price scissors" below). While production and market share declined, the agricultural labor force remained unchanged at 5 million, or about 20% of the total number of employed (showing in fact a slight increase in the share of agricultural employment; see Table 3.6). Declining output thus has not been accompanied by adjustment in labor resources, probably because alternative employment opportunities are scarce in rural areas and in the country as a whole. This certainly has had an adverse effect on the efficiency of agriculture.

Fig. 3.4. Gross Domestic Product and Gross Agricultural Product



Source: Author's data.

Table 3.6. Share of Agriculture in Gross Domestic Product and Employment (in percent)

Share of agriculture	1990	1991	1992	1993	1994	1995	1996
Gross domestic product	24.4	24.5	20.8	21.5	14.3	13.4	11.8
Total number of employed	19.4	19.3	20.4	20.7	21.0	22.5	NA

Source: Department of Statistics, Kiev.

Signs of decline are particularly visible in the livestock sector (Table 3.7). Livestock production traditionally accounted for 55% of gross agricultural product, and it has now shrunk to less than half. The number of cattle and pigs in 1995 was only 70%-75% of the number in 1990, and production of meat declined by one-half. The number of cows declined by about 10%, and production of milk dropped to 70% of its 1990 level. The decline in production has been much greater than the decline in the number of animals, pointing to deterioration in the efficiency of the livestock sector. Milk yields, the most natural measure of livestock productivity, dropped from an average of 2,900 liter per cow per year in 1990 to 2,000 liter per cow per year in 1995. The slaughter weight of an average animal declined between 1990 and 1995 from 390 kg to 330 kg for cattle and from 130 kg to 105 kg for pigs. The decrease in livestock productivity is probably due to inadequate feed and care of animals during the transition period.

While reduction of the livestock sector may be regarded as a necessary adjustment to generally low profitability and lack of export potential, the crop sector has also suffered an overall decline (Table 3.7). Areas sown to crops have decreased since 1990 by 1.5 million ha, or only 5%. The entire

reduction in sown areas is attributable to reduction of feed crops, which is linked with the downsizing of the livestock sector. Areas under other crops have not changed dramatically since 1990, and yet the production of the main cash crops, cereals and sugar beets, dropped by one third between 1990 and 1995. This has been the result of a marked decline in yields, probably due to general deterioration of farm input supply systems and mechanical services.

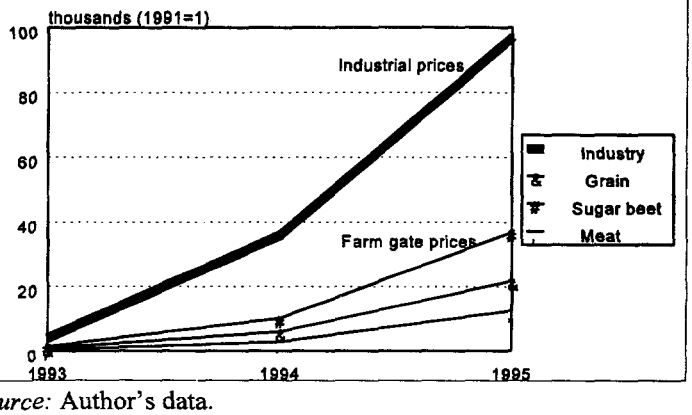
Table 3.7. Selected Production Indicators

	1990	1991	1992	1993	1994	1995
Livestock						
Cattle, mill. head	24.6	23.7	22.5	21.6	19.6	17.6
Cows, mill. head	8.4	8.3	8.1	8.1	7.8	7.5
Pigs, mill. head	19.4	17.8	16.2	15.3	13.0	13.1
Meat, mill. ton	4.4	4.0	3.4	2.8	2.7	2.3
Milk, mill. ton	24.5	22.4	19.1	18.4	18.1	17.3
Crops						
Sown area, mill. ha	32.4	32.0	31.5	31.3	31.0	30.9
Sown to grain, mill. ha	14.6	14.7	13.9	14.3	13.5	14.5
Sown to feed crops, mill. ha	12.0	11.6	11.7	11.3	11.9	10.5
Cereals, mill. ton	51.0	38.6	38.5	45.6	35.5	33.9
Sugar beets, mill. ton	44.3	36.2	28.8	33.7	28.1	29.4
Potatoes, mill. ton	16.7	14.6	20.3	21.0	16.1	14.6
Vegetables, mill. ton	6.7	5.9	5.3	6.5	5.1	5.9
Yields						
Milk, kg per cow per year	2940	2670	2180	2100	2030	2000
Cattle, kg per head slaughter weight	393	385	368	352	349	333
Pigs, kg per head slaughter weight	127	121	116	112	107	105
Wheat, centner/ha	40.1	30.1	30.8	38.0	30.7	29.7
Barley, centner/ha	33.6	25.2	29.3	32.1	28.5	21.8
Sugar beets, centner/ha	275	232	192	222	192	204

Source: Statistical Yearbook of the CIS for 1995, Department of Statistics of the CIS, Moscow (1996); Ukrainian Agrarian Institute, Kiev.

The efficiency of production as reflected by all standard measures (i.e., the ratio of labor to output, crop yields, milk yields, and weight gain of animals) has clearly deteriorated. Because of inadequate productivity, agriculture has been hit particularly hard by the "price scissors" effect, attributable to the faster growth of prices for purchased inputs relative to farm gate prices for agricultural products (Fig. 3.5). While the price of fuel increased more than 300,000-fold, the prices of fertilizers and chemicals more than 100,000-fold, and machinery prices more than 60,000-fold between 1991 and 1995, the price of grain rose only by a factor of 22,000 and the price of sugar beets by less than 40,000 (Table 3.8). The farm gate prices for livestock production rose by less than a factor of 20,000, which probably appears particularly unjust to producers as the prices of processed meat and milk products rose by a factor of 30,000-50,000 between 1991 and 1995.

Fig. 3.5. "Price Scissors": Industrial and Farm Gate Prices



Source: Author's data.

Table 3.8. Change in Prices of Purchased Inputs and Farm Products: 1991-1995 (number of times)

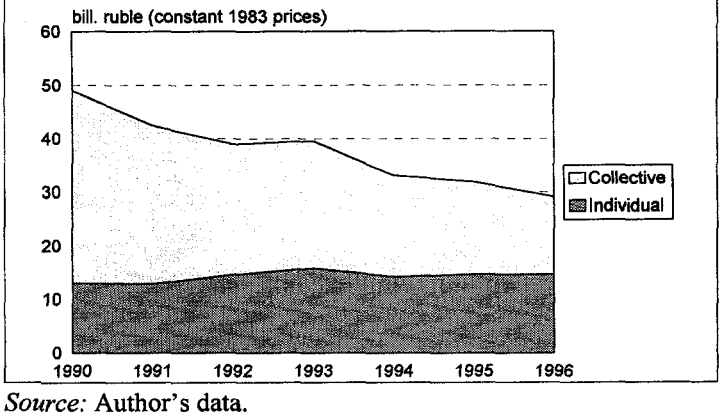
Industrial prices	Price ratio 1995 to 1991	Farm products	Price ratio 1995 to 1991
All manufactured goods	97,077	Grain	21,820
Fuel and gas	318,453	Sugar beets	36,850
Fertilizers and chemicals	110,686	Potatoes	24,600
Machinery	60,722	Vegetables	23,120
Meat processing	29,099	Meat	12,650
Dairy industry	46,398	Milk	18,800

Source: Statistical Yearbook of the CIS for 1995, Department of Statistics of the CIS, Moscow (1996).

Increasing Role of the Private Sector

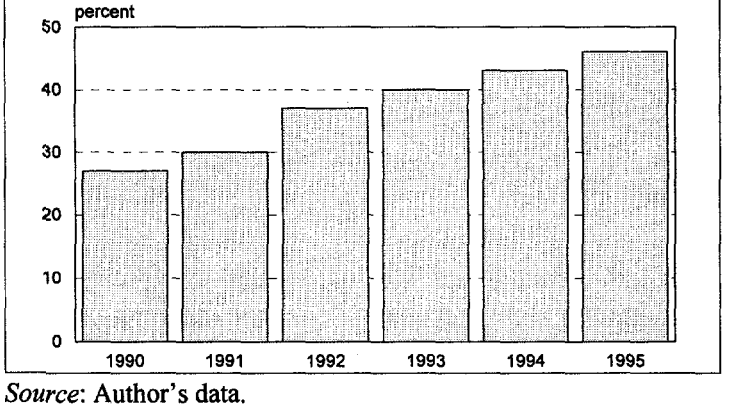
Against the general decline of Ukrainian agriculture, it is encouraging to note different, more positive trends in the individual farming sector. While agricultural production in 1996 nationally reached only 60% of its 1990 level, agricultural production in the individual sector actually rose to 112% of the 1990 level. This robust performance, however, was not sufficient to offset the drastic decline in production of the large-scale farm enterprises, whose output in 1996 dropped to about 40% of the 1990 level, producing an overall decline in agricultural output (Fig. 3.6).

Fig. 3.6. Agricultural Production by Sector



Source: Author's data.

Fig. 3.7. Share of Individual Sector in Agricultural Product



Source: Author's data.

The individual sector in Ukraine controls nearly 7,000 ha, or 15% of agricultural land. In addition to 35,000 private farmers who manage on average 24 ha each, the individual sector includes more than 12 million rural households cultivating small plots of 0.5 ha on average. The household plots are mainly managed on a part-time basis by employees of large collective and shareholder farms, whose principal occupation is on-farm employment and for whom the household plot is a supplementary source of family income.

Private farmers account for only 2% of agricultural land in Ukraine, and their contribution to agricultural product is commensurate with their land holdings. The whole individual sector, including private farms and household plots, accounts today for nearly half the agricultural product. Its share in agricultural product rose from 27% in 1990 to 46% in 1995 (Fig. 3.7). This is much higher than the sector's share in agricultural land (15%), because rural households emphasize livestock production rather than crops. Thus, according to 1996 data, the individual sector accounted for 40% of cows and nearly 50% of pigs in Ukraine (Table 3.9). It accordingly produced about half the meat and the milk in the country. Among crop products, the individual sector specializes in potatoes (over 95% of national production) and vegetables (nearly 75% of national production). Its contribution to grain production is relatively low (about 10% of total production in 1995). Household

plots concentrate on labor-intensive production, while scale crops, such as cereals, sugar beets, and sunflower, are mainly produced by large farm enterprises. Independent private farmers, whose land holdings are relatively large compared to household plots, also produce mainly crops, and place much less emphasis on livestock.

Table 3.9. Share of the Individual Sector in Agriculture: 1995 (in percent of national total)

	Percent		Percent
Meat	52	Cows	39
Milk	46	Pigs	46
Potatoes	96	Sown area	10
Vegetables	73	Agricultural land	15
Grain	10	Gross ag product	46

Source: Statistical Yearbook of the CIS for 1995, Department of Statistics of the CIS, Moscow (1996).

Table 3.10. Change in Production of Selected Products: 1990-1995 (in percent of 1990)

	Individual sector	National production
Meat	95	53
Milk	135	70
Potatoes	120	88
Vegetables	239	88
Grain	226*	67
Gross ag. product	112	65

* In percent of 1991.

Source: Statistical Yearbook of the CIS for 1995, Department of Statistics of the CIS, Moscow (1996).

The viability of the individual sector is evident not only from the steady increase in its share of agricultural product over time, but also from the strong growth in the volume of various products. The production indices of the individual sector are increasing since 1990, while nationally agricultural production shows a continuing decline (Table 3.10). Thus, in 1995 milk production in the individual sector reached 135% of the 1990 level, whereas national production stood at 70% of the 1990 level. Production of vegetables in the individual sector rose by 1995 to 240% of the 1990 level, while nationally it dropped to less than 90%. Grain production in the individual sector more than doubled between 1990 and 1995, while nationally it dropped to two-thirds of the 1990 level. As a result, the share of the individual sector in grain production rose from 4% in 1991 to 10% of the national total in 1995.

4

Reorganization As Seen By Farm Managers

Large-scale farm enterprises are still the dominant form of organization in Ukrainian agriculture. Despite the growing importance of the individual sector, collective farm enterprises control most of the land and remain the main employer in rural areas. The role of farm enterprises in rural communities, however, extends far beyond strictly economic relations, as they continue to bear the main responsibility for most social services in village. For these reasons, it is important to obtain a clear picture of the process of reorganization through the eyes of farm managers. This chapter is based on a survey of 115 managers of large farm enterprises that have undergone formal reorganization. The general assembly of farm members in these enterprises has voted to re-register in one of the new organizational forms, and the enterprise has applied to receive its land from the state in collective ownership. The farm enterprises in the survey were distributed fairly uniformly over 11 provinces across Ukraine, as shown by Table A in the Preface.

New Organizational Forms and Functions of Management

Prior to 1991, 80% of farm enterprises in the sample were kolkhozes (collective farms) and 12% sovkhozes (state farms). After reorganization, over half the farms in the sample are registered as collective farm enterprises (KGSP) and over 20% as shareholder structures (mainly closed joint-stock societies with non-tradable shares).

Thus, although less than 3% of enterprises remain state farms after reorganization, collective forms of organization continue to dominate the rural scene (Table 4.1), and in most cases the reorganization involved a mere change of name from the traditional Soviet term kolkhoz to the new Ukrainian term KGSP. Only 5% of respondents are registered as an association or a union of peasant farms, an organizational form which at least legally has the potential for individual, non-collective production. These unions occur only in the western provinces (Ternopol' and Ivano-Frankovsk).

To be meaningful, external reorganization involving registration of the former structure as a new organizational form must be followed by internal reorganization involving reallocation of resources (land, assets, labor) to market-oriented subunits. Internal reorganization generally leads to the creation of relatively autonomous units within the large farm enterprise. Only 9% of farm managers report that the new structural units have no operational independence, with all decisions handled by central management. In 75% of farm enterprises, the new subdivisions are reported to plan and

manage their production activities (Table 4.2). This, however, is practically the limit of their autonomy. The subdivisions are responsible for input purchasing and product marketing in less than 5% of the farm enterprises surveyed; a similar proportion of farm enterprises report that the subdivisions have their own administrative staff (a manager, an accountant, etc.), and in only 7% of farm enterprises do the subdivisions have freedom to hire and fire workers. Practically none of the subdivisions have their own bank account.

Table 4.1. Farm Structures Before and After Reorganization

Organizational form	Before 1991	After 1991
Sovkhoz (state farm)	12.2	2.6
Kolkhoz (collective farm - traditional legal form)	79.1	--
KSGP (collective farm enterprise - new legal form)	2.6	53.0
Agricultural cooperative	0.9	7.0
Closed joint-stock society	3.5	17.4
Open joint-stock society	--	1.7
Association of shareholders	--	5.2
Association of peasant farms	--	5.2
Lease contracts	0.9	1.0
Other forms	0.8	6.9

Source: Author's data.

In line with this extremely limited autonomy of the newly formed subdivisions, 96% of farm enterprises report that they have retained collective or central management organs (Table 4.2). The main functions of central management (Table 4.3) include overall production planning and management for the entire enterprise (86% of respondents); coordination of the production activities of the subdivisions (41% of respondents); provision and allocation of commonly owned machinery and equipment to subdivisions (29%); and labor management, including hiring and firing (26%). Since the subdivisions generally have no bank account, the collective management is responsible for banking relations and finances according to 27% of respondents. Input purchasing and product marketing are listed among the functions of central management only by 10% of respondents. Since purchasing and marketing functions are not handled at the subdivision level either, this may be a reflection of general lack of attention to these important aspects of farm activity.

The overall impression is thus of subdivisions that in practice have extremely limited autonomy and operate within a collective framework that has retained most of its traditional functions. The finding that 75% of subdivisions plan and manage their own production activities (see Table 4.2) sounds dubious in light of the conflicting finding that central management is responsible for overall production planning and management in 86% of cases and coordinates the production activities of

the subdivisions in 41% of the cases (see Table 4.3). The impression of superficial and limited autonomy of the subdivisions is further strengthened by the fact that in over 60% of farm enterprises the new units were formed simply on the basis of the old production subdivisions, and in over 80% of cases the new units were allocated the land and assets that they had in the old balance sheet. The individual shareholders did not exercise their freedom of choice and freedom of association when creating the new units, and the asset base of the new units was not formed by shareholders voluntarily pooling their land and asset shares. Shareholders were simply "assigned" to their old organizational subdivisions.

Table 4.2. Farm Management Structure in Reorganized Enterprises (percent of respondents)

Farms retain central management	96%
All decisions made by central management	9%
Subdivisions have independence in	
Planning and managing production	75%
Input purchasing/product marketing	5%
Firing and hiring	7%
Subdivisions have own administrative staff	5%
Subdivisions have bank accounts	0%

Source: Author's data.

Table 4.3. Functions of Central Management (percent of respondents)

Overall planning and management of production	86%
Coordination of production in subdivisions	41%
Common machinery: service and use	29%
Labor management	26%
Banking and finance	27%
Input purchasing/product marketing	10%

Source: Author's data.

The superficiality of internal reorganization is also evident from the absence of radical changes in labor relations. About 80% of farm managers report that the farm enterprise continues to be committed to a life-time employment policy for its members. Most managers are not aware of any excess labor or hidden unemployment on their farms (Table 4.4). The percentage of members actually employed on the farm closely matches the managers' perception of the percentage that has to be employed in order to meet production needs (around 60% in both cases). Only one-quarter of respondents admit that they employ more labor than is needed, but even in these cases of revealed

over-employment the gap is not dramatic: the farms in this category employ on average 68% of their members, while the managers estimate that they really need to employ only 55% of the members.

The process of internal farm reorganization appears to be at its very beginning. Of the 115 farms in the sample, only 30 made an attempt to provide detailed quantitative information about the new internal structure. Of these, 12 farms (or 40%) report that they have reorganized into a single unit, i.e., remain a large-scale farm enterprise as before the reform. The other 60% are multi-unit farms restructured into from 3 to 12 subdivisions. The median number of subdivisions in a reorganized farm enterprise is 3, and the mean is 4.5. Among the new subdivisions, 32% specialize in crop production, another 32% specialize in livestock, and 20% are mixed crop-livestock operations. About 10% of the new units are service divisions specializing in farm machinery and inputs.

Table 4.4. Actual Employment and Perceived Employment Needs

	All respondents	Respondents reporting		
		balanced employment	over-employment	under-employment
Percent of members actually employed	63.9	67.9	67.6	46.4
Percent of members that should be employed to meet production needs	61.2	67.9	55.1	56.9
Number of respondents	84	38	29	17

Source: Author's data.

Subunits of multi-unit farms are on average somewhat smaller than single-unit farms (1,600 ha compared to 2,400 ha), but the difference is not statistically significant because of the smallness of the sample. The average unit has 1,700 head of livestock in both single-unit and multi-unit farms. On the other hand, an average single-unit farm has substantially more members and employs more workers than a subunit of a multi-unit farm. The average number of members in a single-unit farm is 670, compared with 140 in an average subunit of a multi-unit farm. The average number of employed is 410 in a single-unit farm and 80 in a subunit of a multi-unit farm. The ratio of labor to land and to livestock resources is thus much better for subunits of multi-unit farms than for single-unit farms. This may be an indication of the ability of subunits to shed redundant labor during reorganization, possibly shifting the responsibility for redundant workers to central management, while single-unit farms feel obliged to retain the entire original work force. Unfortunately, the number of observations is too small to make any reliable conclusions.

Most subunits are not registered as independent legal entities. In farms that have reorganized into more than one unit, 85% of the units legally remain subdivisions ("brigades") of the large farm enterprise.

Land Tenure in Farm Enterprises

The total land holdings of farm enterprises declined by about 15% between 1991 and 1995, decreasing from an average of nearly 3,700 ha in 1991 to about 3,100 ha in 1995 (Table 4.5). This is the result of obligatory transfer of resources to the state reserve, which provides a pool of land for augmentation of subsidiary household plots and creation of peasant farms.

Table 4.5. Land in Farm Enterprises: 1991-1995

	1991	1992	1993	1994	1995
Average land per farm, ha	3,683	3,422	3,236	3,202	3,122
State land in permanent use	70.1	65.5	52.7	47.3	23.9
Leased from the state	2.5	2.6	2.7	2.3	0.6
Leased from other sources	0.0	0.0	0.0	0.0	0.0
Joint collective	25.2	25.4	31.1	31.9	34.1
Shared collective	2.1	6.5	12.6	17.6	40.6
Individually owned	0.1	0.1	0.9	1.0	0.9

Source: Author's data.

In 1991, 70% of land managed by farm enterprises was in permanent use from the state, and about 25% was collectively owned, representing the beginning of land reform. By 1995, the component of state-owned land in farm enterprises had dropped to less than 25% and collectively owned land had reached 75%. Of this, 40% is collective land that has been divided into individual share-ownership certificates, and 35% is land in joint collective ownership for which no share certificates have been issued yet.

Land leasing is not developed in farm enterprises. Only 20% of farm managers report that they lease in land and 15% report that they lease out land. Farm members, i.e., the shareowners of the farm enterprise, are identified as the main source for leasing in land. Leasing out is mainly done to the internal subdivisions of the farm enterprise. Leasing of land is thus largely an intra-farm activity, and at this stage does not involve outsiders, such as peasant farms or other landholders.

Land and Asset Shares

The state has largely completed its legal part in the process of land reform: 77% of farm managers report that the ownership of land has indeed been transferred from the state to the collective. Yet, although land is now predominantly in collective ownership, less than half the respondents (47%) report that members' land shares have been calculated; less than one-third (29%) report that the land shares have been registered with the district authorities; and only 12% report that members have actually received certificates of ownerships for their land shares (Table 4.6). In 4% of farm

enterprises the plots corresponding to the individual land shares are marked on the general map. In none of the cases have physical plots of land been allocated to individual shareowners.

Table 4.6. Status of Determination of Land and Asset Shares in Farm Enterprises

	Percent of all farms surveyed (115 farms)		Percent of farms where shares have been calculated	
	Land shares	Asset shares	Land shares	Asset shares
Shares calculated	47	74	100	100
Shares registered with district government	29	17	59	21
Certificates of ownership issued	12	22	24	27

Source: Author's data.

Land shares have been calculated very recently, mostly since October 1995. About 17% of respondents report calculation of land shares in January and February 1996, while the survey was being conducted. Thus, the determination of land shares in Ukraine has just begun, and yet most respondents report that they expect to complete the process in 1996.

Asset shares have been calculated in three-quarters of farm enterprises surveyed, and certificates of ownership (without physical attribution of assets) have been issued in one-quarter of the cases (Table 4.6). Farm managers report that the process of determination of asset shares began back in 1992, when 25% of farms calculated asset shares. The earlier start is probably one of the reasons for the more advanced status of asset share distribution compared to land shares. Asset share determination, based on relatively objective balance-sheet values, is perhaps a less emotionally charged issue than distribution of land, and therefore was allowed to start at a much earlier stage. Most farm managers who have not yet calculated asset shares are confident that they will be able to complete the process in 1996.

There has been a definite progress with distribution of land and asset shares since the previous 1994 survey, but accomplishments have not been very significant. Thus, already in 1994 around 30% of farm managers reported that land shares had been distributed to members and 50% reported that asset shares had been determined. These percentages are lower, but not much lower, than the percentages reported two years later in the 1996 survey (see Table 4.6).

Where land shares have been calculated, 85% of land is allocated to land shares and 15% remains in a common undistributed reserve. With asset shares, 75% of farm assets has been allocated to shares, and 25% remains undistributed, more than a third of it in social assets. Thus, the legal option to keep land and assets in undistributed form is not abused by farm managers. All farms assign land and asset shares to their working members and pensioners living in the village (Table 4.7). Employees of the village social sphere are entitled to receive land shares in about 30% of cases and asset shares in less than 15% of cases. Former workers who still live in the village are entitled to shares in land and assets in about 10%-15% of cases. Former workers who no longer live in the

village sometimes preserve their entitlement to asset shares, but not to land. Pensioners who have left the village lose their entitlement to both land and asset shares in most cases.

Table 4.7. Entitlement to Land and Asset Shares for Different Categories of Beneficiaries (percent of respondents)

	Land shares	Asset shares
Workers	100	98
Pensioners living in the village	97	96
Pensioners not living in the village	10	15
Former workers living in the village	17	9
Former workers not living in the village	2	9
Employees of the social sphere in the village	28	13

Source: Author's data.

The average number of beneficiaries entitled to shares is 730 per farm, of which 680 are working members and pensioners (roughly in equal numbers), and the remaining 50 are rural social employees and beneficiaries from other marginal categories. The are no significant differences in the number of beneficiaries entitled to share land and assets.

The average land share in the sample is 3.6 ha. Working members and pensioners receive the same land share. The average asset share in the sample is about 120 million krb., or $600 at the exchange rate prevailing in the first quarter of 1996. Working members receive a larger asset share than pensioners: the average share value is 137 million krb. ($700) for workers compared to 100 million krb. ($500) for pensioners (the difference is statistically significant).

The methods and procedures for calculating land and asset shares are still fluid. A large proportion of respondents report that they have had to recalculate the shares at least once since the original calculation. Asset shares have been recalculated in 50% of cases, and land shares in 25% of cases. The recalculation rate is lower for land shares probably because determination began in earnest only in 1995. Change of government regulations is the main reasons for recalculating land and asset shares (given by about half the respondents).

Rights of Shareowners

The rights of individuals concerning the disposition of land and asset shares are incorporated in the enterprise statute in over 80% of the cases. On the whole, there are no significant differences between the rights attached to land shares and asset shares (Table 4.8). The only notable exception is the selling of shares within the farm enterprise: asset shares may be sold to other members according to 22% of respondents, whereas land shares may be sold only according to 9% of

respondents. The greater permissiveness is perhaps attributable to the fact that asset shares, unlike land shares, have a well-defined balance-sheet value, which may be treated as the cash sale value.

Table 4.8. Rights of Shareowners (percent of respondents)

	Inside the farm		Outside the farm	
	Land shares	Asset shares	Land shares	Asset shares
Pass in inheritance	82	83	30	40
Sell	9	22	2	1
Give away as a gift	41	40	11	8
Lease out	33	22	9	2
Exchange land for asset shares and vice versa	4	2	--	--
Mortgage	--	--	4	2

Source: Author's data.

There is a curious prohibition on exchanging land shares for asset shares and vice versa. The reported attitude of the managers in this matter contradict explicit legal provisions. The freedom of transaction inside the farm, among shareowners, is much greater than with outsiders. The restrictions seem to apply even to such universal transactions as passing in inheritance, giving away as a gift, and leasing. In general, shares are not tradable and cannot be mortgaged.

When a member dies, the land and asset shares pass to the legal heirs. The land share is always inherited "in kind", whereas the asset share may be redeemed for cash (60% of respondents).

Transactions in Shares

Although current laws and farm statutes allow a wide range of transactions in land and asset shares, the actual frequency of transactions is very low. The reported transactions are primarily investment of land and asset shares in the joint-stock society created from the former collective or leasing of shares to the enterprise. There are no reports of any sales or any leases to individuals or even subdivisions.

Only one-third of farm managers surveyed provide information about the disposition of shares by the individual shareowners. Among the two main groups of beneficiaries, the active farm workers and the pensioners, more than 50% have invested their land and asset shares in the joint-stock society organized on the basis of the farm enterprise (Table 4.9). Legally, this means that the ownership of the underlying asset has passed from the individual shareowner to the corporate structure, and that land and assets in effect remain collectively owned. Some 35% of workers and pensioners lease their land and asset shares to the enterprise. These individuals retain direct ownership of the underlying property, and have only transferred use rights to the enterprise.

Table 4.9. Disposition of Land and Asset Shares by Beneficiaries (percent of shareowners in each category)

	All shareowners		Workers		Pensioners		Social employees	
	Land	Assets	Land	Assets	Land	Assets	Land	Assets
Invested in farm enterprise	52	56	52	52	55	57	17	65
Leased to enterprise	33	33	32	39	31	31	82	28
Other	15	11	16	9	14	12	1	7

Note: Based on positive responses provided by 35% of farm managers surveyed.
Source: Author's data.

The legal distinction between the two categories of shareowners may have far reaching implications in the future. The 50% who have invested their land and assets in the enterprise have no legal claim to withdraw their property in the future, while the 35% who lease their land and assets to the enterprise are legally entitled (at least in theory) to take possession of their property at some time in the future, when the lease expires. Although the employees of the social sphere in the village are a relatively small group, they primarily lease their land share to the enterprise, unlike workers and pensioners, but like all others invest their asset share in the corporate structure. This may be a manifestation of the greater emotional value of land compared with non-land assets to these rural employees.

Land and asset shares are leased to the farm enterprise as an entity. No leasing of shares is reported to subdivisions or to other individuals inside or outside the farm enterprise. Lease payments to members who lease their shares to the enterprise are calculated mainly as a percentage of the output from the leased share of land (35% of respondents), although 10% of respondents report fixed-sum lease payments. The lease term in all cases is more than 1 year, and about one-third of managers report that the land and asset shares are leased by members to the enterprise for an indefinite term, which in practice means in perpetuity. This again highlights the pervasively collective organization of Ukrainian agriculture today: even those who formally retain individual ownership by leasing their shares to the enterprise in practice forgo the use rights for ever.

The individual freedom of choice within the new organization appears to be severely curtailed. Only half of farm managers report that shareowners have the right to shift their land shares across subdivisions. This is consistent with the relatively low proportion of shareowners who maintain control of their property by leasing the shares to the enterprise, instead of investing in the corporate structure. Only 25% of enterprises that allow transfer of land shares across subdivisions leave the decision to the individual shareholder. In most enterprises, the transaction must be approved by no lesser forum than the general assembly of members or at least unanimously by all shareholders in the affected subdivision. These provisions certainly do not contribute to flexible adjustment of land disposition within the farm.

Two-thirds of farm managers surveyed did not respond to the question about disposition of shares by their members. This general lack of response probably indicates that the whole notion of formalizing contractually the arrangements for the use by the enterprise of individually owned shares is still new and quite strange to both farm managers and their shareowners.

Exit from the Farm Enterprise

Individuals who decide to leave the farm enterprise are not always entitled to take their shares of land and assets with them. Less than half the enterprises allow unconditional withdrawal of the land share on exit (Table 4.10). The remainder allow land shares to be withdrawn only by individuals who intend to establish a private farm. The policy concerning non-land assets is more flexible: fully 70% of farm enterprises allow unconditional withdrawal of asset shares on exit. While the land share is mostly withdrawn in the form of a physical plot of land, the share of non-land assets is typically redeemed by the enterprise for cash.

Table 4.10. Right to Withdraw Land and Asset Shares on Exit (percent of respondents)

	Land shares	Asset shares
Unconditional	46	71
Only when leaving to establish a private farm	43	21
Withdrawal in kind	87	11
Withdrawal of cash value	5	73

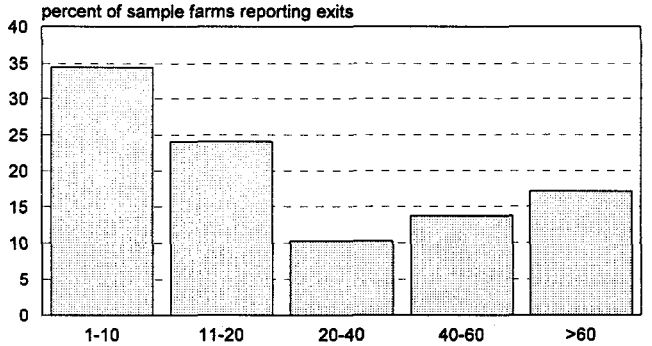
Source: Author's data.

The approval of the general assembly is required for an individual to leave the enterprise with a share of land and assets (70% of respondents). The decision is left to the individual in only 25% of the cases. It is perhaps encouraging to note that neither farm management nor district authorities have official determining powers in this process, although the general assembly probably acts on the recommendations of farm management.

Once the application to leave is approved, the applicant has to wait between one to four months to receive the appropriate share of land and assets. Some farm enterprises, however, do not impose a minimum waiting period on their withdrawing members: there is no waiting period in 35% of farms for withdrawal of land shares and in 25% of farms for withdrawal of asset shares. If members leave without withdrawing their shares, the property is added to the undistributed reserve or is retained in a special balance-sheet account representing the property of former members (about one-third of respondents in each share category).

Exit from the collective organization is not a common phenomenon. Only 25% of respondents report exits of members and families from their farm enterprises. The number of reported exits per farm ranges from 1 to 107, with a median of 15. The distribution of the number of exits per farm is shown in Fig. 4.1. Only 4% of the reported exits are identified as exits with the objective of creating a private farm. The rest are probably out-migration, not directly triggered by considerations of labor redundancy.

Fig. 4.1. Distribution of Exits from Farm Enterprises



Source: Author's data.

The Social Sphere

As part of the reorganization process, farm enterprises are required to shed their traditional responsibility for social assets and provision of social services in the village. It is the local councils that are now expected to maintain the social service infrastructure in rural areas. However, only 25% of farm enterprises in the sample have transferred all their social assets to the local authorities. Nearly half the respondents still retain full responsibility for the social assets, and the remaining one-quarter have transferred only part of the social assets to local authorities. Among those who have retained control of at least some social assets, 55% finance the social sphere with enterprise funds and 33% receive some financing from the local council budget. Self-financing by shareholders or autonomous subdivisions is not common yet. However, 15% of respondents do report that member-shareholders contribute to the maintenance of the social assets, and 7% report that the autonomous subdivisions of the enterprise participate in financing the social sphere.

Table 4.11. Per-Farm Expenditure on the Social Sphere by Year

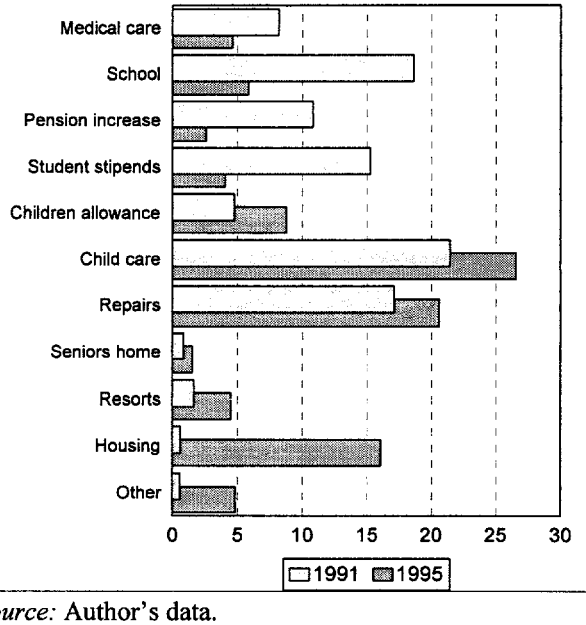
Year	All farms in the sample	Farms that have transferred all social assets to council	Farms that retain all or some social assets	Inflation-adjusted value of expenditure (1991=100)
1991	945	361	460	100.0
1992	1902	713	1398	9.5
1993	163	122	178	8.0
1994	620	429	694	6.0
1995	1815	2009	1772	6.3

Note: The amounts are reported in current values; millions for 1991 and 1992, billions for 1993-1995.
Source: Author's data.

Table 4.11 shows the per-farm average level of expenditure on the social sphere between 1991-1995, reported in current prices. Contrary to expectations, farms that have transferred all their social assets to the local council do not spend less on social services in the last two years than farms that retain at least partial control of the social assets. Much of the expenditure on social services to members and workers is apparently not related to the volume of social assets that the enterprise maintains: thus, the cost of home repairs, heating fuel, and subsidized products to members is independent of whether the farm has transferred its culture club and sports facilities to the care of the council or not.

While differences in expenditures on social services are not significant across farms of different categories, the change over time has been dramatic: in real terms adjusted for inflation, the average per-farm expenditure on the social sphere in 1995 was a mere 6% of the 1991 level. The main change occurred between 1991 and 1992, when the changing economic situation forced farm enterprises to cut social expenditures by nearly 90% in real terms. Thus, the nominal expenditure doubled between 1991 and 1992 (Table 4.11) while the price index increased more than 20-fold. After 1992, the expenditure on social services remained at a low and continuously decreasing level in real terms.

Fig. 4.2. Structure of Expenditure on Social Services: 1991-1995



Source: Author's data.

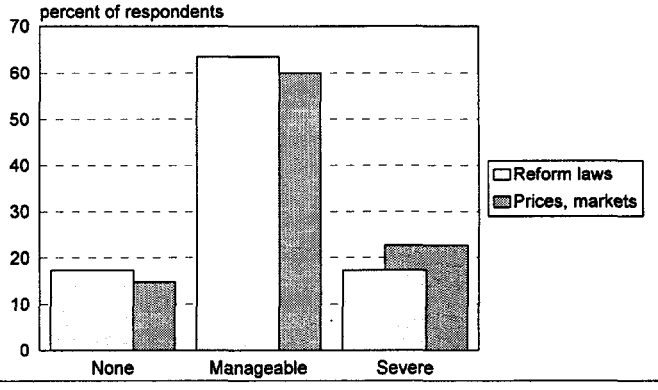
The dramatic reduction in total spending on social services led to a marked change in the structure of expenditure reported by farm managers between 1991 and 1995. Farm enterprises reduced their involvement in medical care, schooling, pensions, and stipends to students, all of which are properly the responsibility of the government budget (Fig. 4.2). On the other hand, they increased the share of total expenditure that goes to support local services, mainly housing and house repairs for their members, and also pre-school child care and children allowances. However, the absolute amounts available for these activities are substantially smaller than in 1991.

Access to Legal and Market Information

Only about 15% of respondents report that they have no difficulties accessing information about reform legislation, prices, and markets (Fig. 4.3). Over 60% report that there are difficulties with access to information, but they have learned to overcome them. About 20% of farm managers characterize their difficulties with access to information as severe. There is a strong correlation

between the views of respondents on difficulties with access to land reform information and access to price and market information. Thus, three-quarters of respondents who report that they manage to cope with access difficulties to land reform legislation also manage to cope with access difficulties to market and price information.

Fig. 4.3. Difficulties with Access to Information



Source: Author's data.

Newspapers are the main source of information about land reform laws, prices, and markets (Table 4.12). Over 80% of respondents rely on this source, and more than half the respondents additionally use radio and television to keep up to date in these areas. The Ministry of Agriculture and the district authorities (the local department of agriculture, land reform committee) are understandably a very important source of information about land reform legislation: between two-thirds and one-half of respondents use these sources.

Table 4.12. Sources of Information (percent of respondents using the source)

	Land reform	Prices, markets
Newspapers	83	83
Radio, TV	62	50
District authorities	54	71
Ministry of Agriculture	66	10
Other farm managers	11	16
Academic institutions	15	6
Commercial consultants and agencies	0	19
Special publications	12	--
Telephone (calls to processors, marketers, suppliers)	--	50

Source: Author's data.

District authorities are also important providers of information about prices and markets (over 70% of respondents), whereas the Ministry of Agriculture plays a much less prominent role. Direct telephone calls to processors, marketers, and suppliers are used by half the managers to obtain pricing and marketing information. Farm managers also resort to commercial agencies for prices and marketing information (19%). Other farm managers and academic institutions play a minor role as sources of information.

5

Employees of Farm Enterprises and Their Families

In addition to collecting the views of farm managers on the process of reorganization, the survey also covered 1674 rural households representing families of employees in the same large farm enterprises (see Preface, Table A). The interviews were generally conducted with the head of the household (63%) or the spouse (27%). Because of their richness, the responses of farm employees are analyzed in two chapters. The first chapter (Chapter 5) describes the life in employee households and the operation of household plots. The next chapter (Chapter 6) discusses the impact of land reform and farm reorganization on employees of farm enterprises.

Demographic Profile of Farm-Enterprise Employees

The average family size in the sample is 3.6, with close to 60% of the families reporting three to four persons and 97% comprising six persons or fewer (Table 5.1). Small families of one or two persons, which are basically families without children and families of elderly people over 60 years of age, account for nearly one quarter (22%) of farm-employee families in the sample. This is significantly higher than the frequency of small families among private farmers, where one- and two-person families account for 8% of the sample (see Chapter 7, Table 7.1). In many families of five or more (another 22% of the sample), adult and married children live with their parents; some respondents report as many as four generations living together as one household. Families typically live in privately owned detached houses (85% of respondents). The farm enterprise provides housing for 10% of families in the survey.

Most family members (61%) are adults of normal working age (between the ages of 18 and 60), and children and youth under the age of 18 account for 30% of family members in the sample (Table 5.1). Seniors over 60 comprise only 9% of all family members in the sample. This is substantially higher than the percentage of seniors in households of private farmers (5.5%; see Chapter 7, Table 7.1), but much lower than nationally. According to national statistics, 25% of the rural population are over 60, and district-level statistics for the villages participating in the survey indicate that 32% are pensioners. The lower percentage of seniors in the sample is due to the fact that the national census captures all persons over 60, whereas the survey focused mainly on economically active households. As a result, the survey captured mostly seniors living with their younger children. Thus, although the dependency ratio in the sample of farm employee households (0.6) is higher than for

private farmer households (0.4), it is much lower than the dependency ratio of 1.1 observed for all the villages in the survey.

Table 5.1. Family Size and Age Distribution of Household Members

Number of members	Percent of households	Age group	Percent of household members
1	3.7		
2	18.5	Children (under 12 years)	17.4
3	22.4	Youth (between 12 and 18)	12.7
4	33.5	Adults (between 18 and 60)	61.2
5	13.6	Seniors (60 years and older)	8.7
6	5.7		
7 and more	2.6		

Source: Author's data.

As families become larger, the proportion of young persons under 18 increases. In families of four and more, children and youth represent over 35% of family members (Table 5.2). The proportion of seniors is relatively high only in small families of one or two. In larger families, the proportion of seniors is around 5%, increasing to 13% in families of six or more. As a result of these trends, and mainly due to the increasing proportion of children and youngsters in large families, the dependency ratio rises steeply from 0.2 in families of three to 1.0 in families of six or more. In such large families, three or four adults of normal working age must support an equal number of children and pensioners.

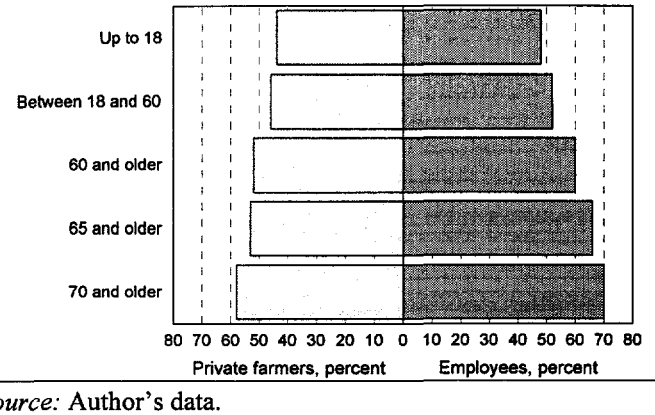
Table 5.2. Age Structure as a Function of Family Size (percent of family members)

Family size	Adults (18-60)	Seniors (60 and older)	Children and youth (under 18)	Dependency ratio
1-2	66	29	5	--
3	73	5	12	0.23
4	61	3	36	0.64
5	56	7	37	0.79
6 and more	50	13	37	1.00
Average family (3.6)	61	9	30	0.64
Village council data	48	32	20	1.08

Source: Author's data.

The gender structure varies across different age groups. In the entire sample, 49% of respondents are male and 51% female. Among persons under 18, males predominate (51% male, 49% female). The proportion of males among rural residents declines with age: for adults between the ages of 18 and 60 the gender structure is about the same as in the entire sample (48% of adults are male, 52% are female), but for seniors over 60 the proportion of males is much lower than the proportion of females (40% male and 60% female). The divergence is even more pronounced for people over 65 (32% male and 67% female). A similar pattern is observed in the sample of private farms in the survey: in both samples, the proportion of females in each age group increases with age, while the proportion of males correspondingly declines (Fig. 5.1). Survey data thus show that the life expectancy of males in Ukraine is substantially shorter than the life expectancy of females.

Fig. 5.1. Proportion of Females Among Household Members: Farm Employees and Private Farmers



Source: Author's data.

Table 5.3. Education Level of Household Members (percent in each age/sex group)

	Adults (18-60)	Seniors (>60)	Adults: males	Adults: females	Seniors: males	Seniors: females
Higher	18	5	20	17	10	2
Secondary	72	23	72	73	35	14
8 grades or less	9	72	8	10	55	84

Source: Author's data.

Among adults between the ages of 18 and 60, 18% have higher or partial higher education and 72% have secondary education (Table 5.3). Less than 10% did not finish high school (8 grades or less). This is a highly satisfactory level of education, although it is lower than the level of education reported by private farmers, where fully 37% of adults have higher education (see Chapter 7, Table 7.2). The beneficial effect of the Soviet regime on education in rural communities is clearly seen from a comparison of the adult age group with the over-60 age group. Among seniors over 60, the proportion with higher education is substantially lower (5% versus 18%) and the proportion with uncompleted secondary education is much higher (72% versus 9%). Moreover, significant gender differences are observed in the senior age group: persons with higher or partial higher education comprise 10% among males over 60 but only 2% among females; the proportion with uncompleted secondary education is much higher among females (84% compared with 55% among males). On the other hand, there are no substantial gender differences in educational attainment among adults between the ages of 18 and 60, because both genders enjoyed equal access to higher and professional training during the more recent decades of the Soviet regime.

The head of household is male in 89% of cases and female in 11% of cases. Women are reported as head of household where families are without males of normal working age: in these families, all males are minors or seniors. A typical male head of household is 45 years old, and his spouse is 42 years old, both with about the same educational attainment (secondary or higher education). When the head of household is female, she is 52 years old and has a lower educational attainment. Thus, 45% of female heads of household have uncompleted secondary education compared with less than 15% among male heads of household.

Table 5.4. Occupation of Family Members (percent of members in each age/sex group)

	Adults (18-60)	Seniors (>60)	Adults: males	Adults: females
Employed by farm enterprise	66.7	9.1	76.5	57.6
managerial staff	8.1	1.2	13.4	3.3
skilled worker	31.7	4.7	46.9	17.5
unskilled worker	8.6	1.6	7.8	9.3
administrative services	15.6	1.6	7.3	23.3
social services	2.7	0.0	1.2	4.2
Village-level social services	8.5	0.5	3.4	13.3
Other services	6.9	0.5	7.4	6.5
Housekeeping	4.5	1.2	0.2	8.4
Pensioner	4.8	88.0	3.1	6.3
Unemployed	3.2	0.7	3.9	2.5
University/college student	5.4	--	5.4	5.4

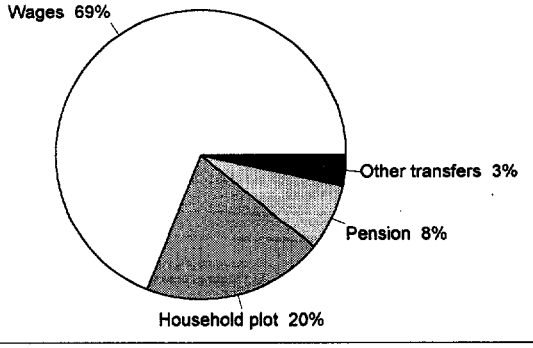
Source: Author's data.

Among adults of normal working age (between 18 and 60), two-thirds are employed by the local farm enterprise (Table 5.4). The percentage of males employed by the farm enterprise is higher than the percentage of females, as fully 13% of females work in village-level social services (as teachers, medical personnel, etc.), which are financed by the state and not the farm enterprise. Males usually occupy managerial and skilled jobs in the farm enterprise, whereas females gravitate toward administrative and social services. Housekeeping work is almost exclusively a female province, but less than 10% of women report housekeeping as their principal occupation. While most seniors over 60 are pensioners, nearly 10% report that they still work in the farm enterprise. These are primarily males, as virtually all females over 60 are classified as pensioners.

Household Income, Savings and Debts

The average family in the survey derives its income mainly from wages and the household plot. Wages account for nearly 70% and the household plot for another 20% of total family income (Fig. 5.2). Wage income is primarily cash, and wages in kind as reported by the respondents represent less than one-tenth of the wage component. This contradicts the prevailing impression of growing "demonetization" of labor relations in the rural economy. Pensions and various social transfers make up the balance of total household income (about 10%). Dividends and lease payments received for land and asset shares entrusted to the farm enterprise or other active producers account for less than 1% of total income.

Fig. 5.2. Sources of Income in Farm-Employee Households



Source: Author's data.

While the wage component is roughly the same across all income levels (about 70% of total family income), the contribution of the household plot is higher in high-income families: it rises from 9% in the first income quartile to 26% in the top quartile (Table 5.5). The household plot probably provides the only supplementary source of income for the families of rural employees, who work full time on the large farm enterprise and have no other job opportunities in the village. This explains the increasing importance of the household plot in generating income above the basic wages.

Table 5.5. Structure of Income by Income Quartiles (in percent of mean income)

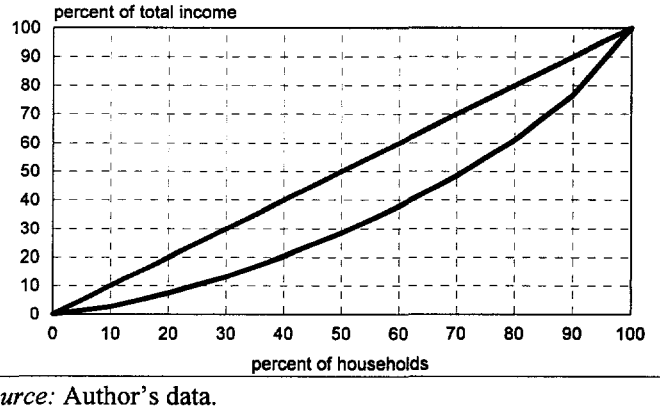
	Total	Q1	Q2	Q3	Q4
Mean income, mill. krb.	153.9	63.4	112.9	161.4	277.5
Wages, %	69.0	68.7	74.4	70.4	65.9
Household plot, %	20.2	9.3	13.0	19.9	25.9
Pension, %	7.5	17.5	9.6	6.0	5.3
Social transfers, %	2.6	3.8	2.4	3.0	2.0
Dividends and lease payments, %	0.7	0.6	0.5	0.7	0.9

Note: Each quartile Q1-Q4 contains 25% of families in the sample in the order of increasing income.
Source: Author's data.

For low-income families, on the other hand, the component of pensions and social transfers is much more important that in the rest of the sample: it accounts for 21% of family income in the bottom quartile compared to only 10% in the entire sample. The low-income quartile is characterized by relatively small families (average family size 2.9 in the bottom quartile compared with the sample average of 3.6) and a relatively high proportion of people over 60 (13% compared with the sample average of 9%). The families in the low-income quartile are thus more limited in their income-generating opportunities and are forced to rely more on the government.

The average family income in 1995 was about 150 million krb., or $1,000 at the then prevailing exchange rate. With average family size of 3.6, the annual per-capita income in farm-employee families is estimated at about $280 in 1995. The average income for top-quartile families was more than four times the average income for bottom-quartile families (280 million krb. compared with 65 million krb., respectively; see Table 5.5). Families in the top decile have average income of 360 million krb., or more than double the average for the entire sample. There is considerable inequality in income distribution across households: the 25% of families with lowest income (below 90 million krb. in 1995) contribute only 10% of total income in the sample, while the 25% of families with highest income (196 million krb. and more) contribute 45% of total income (Table 5.6). Inequality of income distribution by deciles in the sample is visually demonstarted in Fig. 5.3.

Fig. 5.3. Inequality of Household Income Distribution



Source: Author's data.

Table 5.6. Inequality of Income Distribution

Income quartiles, million krb.		Mean income, million krb.	Percent of		Cumulative percent of	
			households	income	households	income
Q1	up to 90	63.5	25	10.3	25	10.3
Q2	90-134	112.9	25	18.2	50	28.5
Q3	134-196	161.4	25	26.3	75	54.8
Q4	196 and higher	277.5	25	45.2	100	100.0

Source: Author's data.

Total income increases with family size: the larger the family, the greater the pool of potential labor and the higher the total income (Table 5.7). The dependence on family size is statistically significant, but there is no dependence on average age of family members, average age of the husband and wife team, or average age of adults in the family. On the other hand, large families have a relatively large number of children, who do not contribute to total income, and the average per-capita income therefore declines with family size (Table 5.7). The decline is also statistically significant: the per-capita income in families of one or two people is significantly higher than in families of three and four people, whose income in turn is significantly higher than in families of five or more.

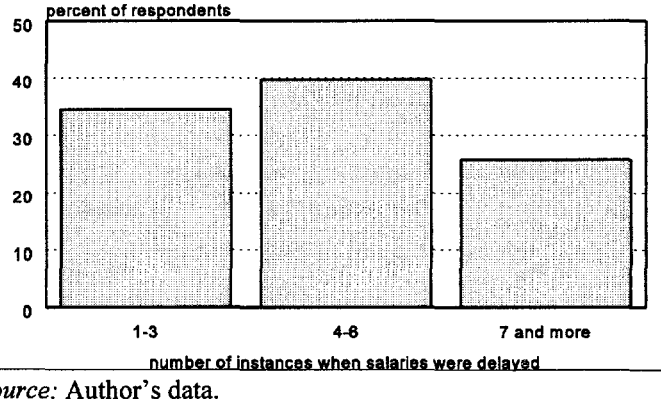
Table 5.7. Income and Family Size

Number of family members	Percent of respondents	Mean income, mill. krb.	Per-capita income, mill. krb.
1	4	63.0	59.8
2	19	118.3	
3	22	148.3	49.4
4	33	165.4	41.4
5	14	178.5	34.5
6 and more	8	208.0	

Source: Author's data.

While cash wages account for two-thirds of family income, they are not an entirely reliable source. Only one-fifth of respondents reported that they did not experience any delays in receiving wages, and 77% reported payroll arrears. Among these, three-quarters reported up to 6 instances of salary delays in 1995, and the rest reported from 7 to 12 months with irregular salary payments in 1995 (Fig. 5.4). Delays in wages emphasize the importance of the household plot as an alternative source of income that ensures a minimum subsistence level for the families.

Fig. 5.4. Salary Delays in 1995



Source: Author's data.

Payments in kind account for less than 10% of total family income, but they are reported by half the households in the sample. The main products received as payment in kind are grain, sugar, and feed for animals (including hay, silage, grass, and tubers). These are the only commodities reported by more than 10% of respondents (Table 5.8). Flour, vegetable oil, and meat are reported by less than

10% of respondents. Two-thirds of farm employees buy additional quantities of the same food products at subsidized prices from the farm enterprise (Table 5.8). These products supplement the household's consumption and are also used for the livestock (animal feed and at least part of the grain). Other products, such as fruits, grapes, vegetables, potatoes, or milk and eggs are produced by households in sufficient quantities for own consumption, and are seldom used as payment in kind or offered at subsidized prices.

Table 5.8. Payment in Kind and Purchase at Subsidized Prices

	Payment in kind		Purchase at subsidized prices	
	Percent of respondents	Mean quantity, kg	Percent of respondents	Mean quantity, kg
Grain	43	1700	52	1700
Sugar	26	200	45	250
Feed for animals	19	2200	18	2200
Flour	7	120	16	80
Vegetable oil	5	90	15	30
Meat	5	40 (slaughter wt.)	14	50 (slaughter wt.)

Source: Author's data.

Household Production

The household plot is the most important source of food products for the family. Nearly 90% of respondents identify own production on the household plot as a channel of food supply (Table 5.9). Farmers' markets, another major source of food supply for rural families, also sell mainly products from household plots, and this further emphasizes the importance of household production as a source of food supply on a national level.

Table 5.9. Sources of Food Products for the Family

Source	Percent of respondent
Own production	89
Stores	74
Farmers' market	54
Farm enterprise	46
Neighbors	6

Source: Author's data.

Households generally diversify their production between crops and livestock. Virtually all respondents grow crops (95%) and keep livestock (93%). Only 10% of respondents specialize

entirely in crops or entirely in livestock (5% in each production category), and fully 90% produce both crops and livestock products.

Crop Production

The household plot of about 0.5 ha is used mainly for growing potatoes, vegetables, and cereals (wheat and barley). Half the average plot is under potatoes and vegetables and one-third is under cereals (Table 5.10). Nearly 8% of the land is sown to industrial crops (sugar beets and sunflower).

Over 90% of respondents report that they grow potatoes and two-thirds grow vegetables. Cereals and fruits are a distant third, produced in less than 20% of the households (Table 5.11).

Most crops are produced for household consumption, and sales are relatively infrequent. Only 25% of respondents report that they sell some of the crops that they produce. Sugar beets are the only crop produced mainly for its cash value: two-thirds of the total harvest in the sample is sold by the households. Other relatively important cash crops are sunflower, wheat, and vegetables, where 20% of the total harvest is offered for sale (Table 5.11). Although potatoes are the most widespread crop among the households surveyed, only 15% of respondents report selling potatoes, and the total quantity of potatoes sold is 7% of the harvest. The main crop is thus primarily consumed within the household, presumably by both humans and animals.

Table 5.10. Cropping Pattern for Household Plots (in percent of average cropped area)

Crop	Percent of land	Crop	Percent of land
Total cropped	100.0	Sugar beets	5.2
Wheat	12.2	Sunflower	2.4
Barley	13.5	Potatoes	38.0
Corn	4.2	Vegetables	9.6
Other cereals	2.2	Fruits	2.8
All cereals	32.1	Other	10.0

Note: Average cropped area is 0.498 ha per household. Crops are grown by 1601 respondents, or 95.6% of the sample.
Source: Author's data.

Household that sell crops produce significantly more than the average (Table 5.11). Thus, the average potato production is 2 ton, while households that sell potatoes average 3 ton, and a similar pattern is observed for other crops. It is households with more land that tend to produce more crops and sell the surplus. Thus, households that report some crop sales average 0.64 ha, whereas households without crop sales average 0.47 ha (the difference is statistically significant).

Table 5.11. Crop Production by Households of Farm Employees

	Households that produce specific crops			Households that produce and sell		
	Percent of households	Harvest, centner	Percent of harvest sold	Percent of households	Harvest, centner	Percent of harvest sold
All cereals	19.2	10.1	5.0	0.5	24.3*	78.1
Wheat	15.7	10.8	20.4	1.7	21.5*	94.6
Barley	18.2	10.1	6.9	0.6	27.9*	76.2
Corn	14.2	6.5	0.0	--	--	--
Sugar beets	11.2	48.7	65.3	3.5	102.4*	97.8
Sunflower	7.8	3.7	21.6	0.4	19.1*	72.1
Potatoes	91.2	21.0	7.1	15.5	30.4*	28.9
Vegetables	67.2	5.4	16.7	6.0	15.7*	61.8
Fruits	17.4	3.7	2.7	0.4	11.1	42.6

* The quantity is statistically significantly higher than the average for all households that produce the crop.
Source: Author's data.

Table 5.12. Crop Yields in Household Plots (those who produce)

	Farms reporting production, %	Sown area per farm, ha	Output per farm, centner	Yield in sample households, centner/ha		Ukraine average*, centner/ha
				Mean	Median	
All cereals	19	0.29	10.1	37	33	
Wheat	16	0.37	10.8	38	33	30
Barley	18	0.35	10.1	34	28	22
Corn	14	0.13	6.5	62	43	29
Sugar beets	11	0.21	48.7	231	200	205
Sunflower	8	0.15	3.7	28	20	14
Potatoes	91	0.20	19.0	99	100	96
Vegetables	67	0.07	5.2	92	80	115
Fruits	17	0.07	3.7	79	60	

*Based on official national statistics for 1995.
Source: Author's data.

Crop yields are difficult to estimate because of the small size of the household plots and the relatively low frequency of producers in each crop category. Table 5.12 presents the yield estimates

for household plots surveyed in comparison with the Ukrainian average for 1995. There is no clear yield advantage for crop production in household plots. The achieved yields for wheat, potatoes, sugar beets, and vegetables are not substantially different from the national averages. While corn and sunflower yields are estimated to be higher than the national average, the yield of vegetables, another major crop product in household plots, is lower. The overall picture is as uncertain as for yields of independent private farmers (see Chapter 7, Table 7.10).

Livestock Production

Practically all households in the survey have livestock (93% of respondents). An average household keeps one head of cattle, two pigs, and about 20 birds (Table 5.13). The number of cows in an average household is estimated at 0.6, which is understandably less than the number of cattle.

Pigs are reported by 87% of households in the survey, and poultry by 79% (Table 5.13). Cattle is a distant third among livestock species in Ukrainian rural households: about 50% of respondents have cattle or cows. The number of sheep, goats, and horses in the sample is negligible. There have been no significant changes in the size of herd or its composition between 1993 and 1995.

Table 5.13. "Herd Composition" for a Household with Livestock: 1995 (average for 1561 households with livestock)

	Number of head	Percent of households reporting animals
Cattle	1.0	52.7
Cows	0.6	49.4
Pigs	2.1	86.9
Poultry	19.2	79.0

Source: Author's data.

Pork, eggs, poultry meat, milk, and beef are the most common livestock products among the households in the survey (Table 5.14). The frequency of producers generally matches the frequency of households reporting the corresponding animals. Milk yields reported by the households average 2,900 liters per cow per year over the last three years. This is certainly better than the Ukrainian average, which declined from 2,700 liters in 1993 to 2,300 liters in 1995, but does not match the yields reported by private farmers in the survey, which increased over time from 3,200 liters in 1993 to 3,500 liters in 1995 (see the section *Livestock Production* in Chapter 7). The egg laying capacity based on reported egg production and number of birds is estimated at 80-90 eggs per year per bird. This is very low even compared to the Ukrainian average and the results achieved by private farmers (around 200 eggs per year per layer), because the number of birds reported includes many different species of fowl, and not only layers that produce eggs.

Eggs and poultry meat are produced mainly for household consumption, whereas beef, pork, and milk are sold in substantial quantities. Thus, the households in the sample sell fully 80% of the beef they produce, nearly 40% of the pork, and over 20% of the milk (Table 5.14). Both the frequency and the volume of sales of livestock products are much higher than for crop products (compare with Table 5.24). Households that sell livestock products produce larger quantities than the households that consume the entire output; for the main products (pork, beef, and milk) the difference is statistically significant (Table 5.14).

Table 5.14. Production and Sales of Livestock Products

	Household that produce			Households that produce and sell		
	Percent of households	Production, centner	Percent sold	Percent of households	Production, centner	Percent sold
Pork	81.8	3.3	38	33.5	5.0*	61
Beef	28.9	3.5	81	22.3	3.8*	94
Milk	44.1	29.3	21	18.9	33.9*	39
Eggs	61.5	1.8	0	2.6	2.3	42
Poultry meat	42.4	0.6	0	0.9	5.7	42

* The quantity is statistically significantly higher than the average for all households that produce the commodity.
Source: Author's data.

Marketing Channels

About one quarter of all households surveyed report sales of crop products. These are mainly potatoes and vegetables, sugar beets, and to a much smaller extent wheat (see Table 5.11). Potatoes and vegetables are sold mainly in the market, while sugar beets are delivered almost exclusively to state procurement organizations. The few households that sell wheat divide it between state procurement organization and private traders.

Livestock sales are reported with substantially higher frequency in the sample: more than half the household surveyed sell pork, beef, milk, or poultry products. Sales of the main products (pork, beef, milk) are classified as profitable by 40%-50% of the households that sell these products (Table 5.15).

Central state organizations are a significant channel only for the sale of beef and milk (Table 5.15). Households rely mainly on the market in the nearby town for sale of their products. This is particularly true for pork and poultry products, for which farmers' markets are the dominant channel of sale, but beef and milk sales in town markets are reported practically by the same percentage of respondents as those who report sales through state channels. The collective enterprise, which traditionally acted as the main outlet for the farm products from household plots, has lost most of

its role. The general pattern is a shift from traditional marketing channels (state procurement and the collective farm) toward commercial channels, such as the farmers' market and commercial firms.

Table 5.15. Profitability and Marketing of Livestock Products

	Producers reporting product profitable, percent	Main marketing channels (percent of producers who sell)				
		state procurement	collective enterprise	commercial firms, stores	market	other
Pork	53	4	1	12	64	19
Beef	36	26	13	15	24	22
Milk	41	36	16	--	35	13
Eggs	44	7	--	7	56	30
Poultry meat	67	7	--	--	73	20

Source: Author's data.

Revenue from Sales of Farm Products

Overall, 62% of respondents earn some income from sales of farm products (crops and livestock combined). The average revenue from all farm sales in 1995 was 55 million krb., or $370 (Table 5.16), most of which (70%) derived from sale of livestock products and the remainder (30%) from crop sales. These are estimates for the 62% of households that earn some income from sales. Allowing for 38% of households that do not report any income from farm sales, the average sales revenue per household in the survey is 34 million krb. ($225). This estimate is consistent with the data presented in Fig. 5.2 above, which indicate that the household plot accounts for about 20% of total family income of 154 million krb., or 31 million krb. per household.

Table 5.16. Sales Revenue and Sales Mix for Household Plots (million krb.)

	All sales	Crops only	Livestock only	Mixed sales
Revenue from crop products	16.4	37.9	--	40.1
Revenue from livestock	38.5	--	45.6	41.9
Total sales revenue	54.9	37.9	45.6	82.0
Number of respondents	1030	138	601	291
Percent of respondents	100	13	58	28

Source: Author's data.

Households of farm employees show a strong specialization in livestock production. More than half the households sell only livestock products, while the number of households that specialize in crop sales (without any livestock) is less than 15%. The remaining 30% of households report mixed crop

and livestock sales. The average revenue from sale of farm products is highest for households with mixed sales; these are followed by households that specialize in livestock sales, and households that sell only crop products earn the lowest sales revenue (Table 5.16).

Table 5.17. Structure of Sales Revenue (based on 1030 respondents reporting sales revenue)

Crop products	Percent of crop revenue	Percent of total revenue	Livestock products	Percent of livestock revenue	Percent of total revenue
Wheat	4.1	1.2	Beef	27.5	19.3
Barley	1.6	0.5	Pork	55.5	38.9
All cereals	5.9	1.8	Eggs and poultry	1.1	0.8
Sugar beets	14.1	4.2	Milk	15.4	10.8
Sunflower	2.2	0.7	Other	0.5	0.4
Potatoes	48.0	14.3			
Vegetables	23.3	7.0			
Fruits and other	6.5	1.9			
All crop sales	100.0	29.9	All livestock sales	100.0	70.1
Total crop revenue	16.4 mill. krb.		Total livestock revenue	38.5 mill. krb.	

Source: Author's data.

Households derive 70% of their sales revenue from livestock products and only 30% from crop sales (Table 5.17). Pork, beef, and milk are the main cash products for farm-employee households: they account for nearly 70% of total sales revenue. The main cash crops are potatoes, vegetables, and sugar beets, which combined account for 25% of total sales revenue. Thus, three livestock products and three crop product earn 95% of total sales revenue. The contribution from sale of all other products (cereals, sunflower, fruit, eggs, poultry meat, mutton, wool, etc.) is marginal.

Table 5.18. Size of Household Plot as a Function of Farm Sales Category

	Percent	Ha
Households that sell	61.5	0.56
Household with mixed sales	17.4	0.67
Household specializing in crop sales	8.2	0.59
Household specializing in livestock sales	35.9	0.50
Households that do not sell	38.5	0.44
All households	100.0	0.51

Source: Author's data.

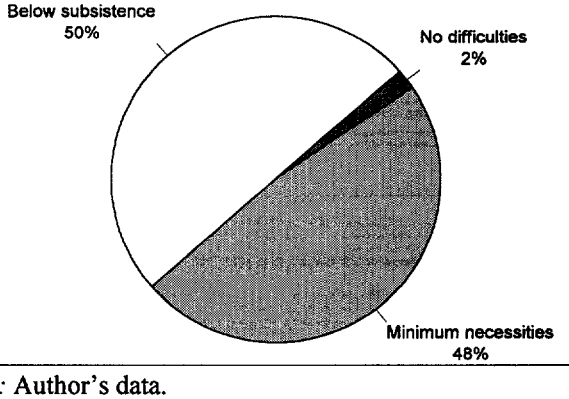
It is households with more land that tend to produce more and thus sell the surplus. Households that sell farm products average 0.56 ha compared to 0.44 ha in households that do not sell (Table 5.18). Households that report mixed sales (both crops and livestock products) are the largest, averaging 0.67 ha, while households specializing in livestock sales are the smallest, with 0.50 ha on average. Livestock production naturally requires less land than crops.

Standard of Living

The household income in the sample was about $1,000 per year in 1995, which gives an average per-capita income of about $280 per year. Respondents estimate that a person needs about $150 *per month* to maintain a normal standard of living, which is roughly 6 times what the households in the sample actually earn. Even if the answers are interpreted as relating to the needs of the entire family, and not per capita, the subjective estimate is almost double the actual family income.

Consistently with this gap between actual and required income, half the respondents report they cannot satisfy even the minimum consumption needs of their family, and almost all the rest report that they make just enough for necessities and cannot afford anything beyond that. Fewer than 2% of respondents report that their families have no material difficulties (Fig. 5.5). There is a clear correlation between the subjective assessment of the family's purchasing power and its income level. Among those who find it difficult to meet the minimum necessities, 60% earn less than the median income. Among those who manage to meet the minimum necessities, 60% earn more than the median income. Finally, 70% of those reporting no material difficulties fall in the top income quartile. Both total and per-capita income are lower for families who do not meet the minimum necessities than for the other families (Table 5.19; the difference is statistically significant).

Fig. 5.5. Sufficiency of Income: Employee Households



Source: Author's data.

Fully 75% of respondents consider their present living standard unsatisfactory, and only 15% report that the living standard is satisfactory. Practically nobody characterizes the present living standard as good. Compared with three years previously, the living standard is worse according to 85% of respondents. Only 7% of respondents characterize the living standard as unchanged and 2% as actually better than three years previously.

Table 5.19. Satisfaction Level and Income

	Percent of respondents reporting income		Mean income (mlln. krb.)	
	below median	above median	total	per capita
Cannot meet basic necessities	62%	38%	131	38
Meet basic necessities	38%	62%	174	52
No material difficulties	27%	73%	279	85

Source: Author's data.

The impression of restricted income is further strengthened by the very low frequency of savings among rural families. Only 18% of respondents report that their family has some savings (Table 5.20). The mean amount of savings in these families is about 10 million krb., compared with 170 million krb. annual income. This is very low, possibly due to inflationary erosion of savings over time. In general, low saving rates are only to be expected in an inflationary environment that does not offer any indexation protection.

Table 5.20. Family Finances

	Percent of respondents	Percent of respondents with income		Mean income (mlln. krb.)	
		below median	above median	total	per capita
Families reporting savings	18%	43%	57%	171	51
no savings	82%	52%	48%	149	44
Families reporting debt	34%	56%	44%	142	41
no debt	66%	47%	53%	159	48

Source: Author's data.

Income constraints sometimes can be alleviated by borrowing. One-third of respondents report carrying some debt. The average debt is about 30 million krb., or $150 at the exchange rate prevailing in the first quarter of 1996. For comparison, the 1995 average income in families reporting debt is 140 million krb., or three times the level of debt. There is thus no evidence of excessive indebtedness among rural households, but the fact that a substantial proportion of rural families admit being in debt is unusual.

As expected, families with savings have higher income levels than families without savings (Table 5.20). By the same logic, families with debt have lower income levels than families that do not resort to borrowing. The differences in income between categories are apparent in mean income (both total and per-capita) and in percentage of respondents above and below the median income (all differences are statistically significant).

Table 5.21. Availability of Vehicles and Home Appliances in Farm-Employee Households (percent of respondents)

	Own	Intend to buy
Vehicles		
Car	26.6	11.8
Motorcycle	19.1	4.9
Bike	42.9	10.6
Tractor, other farm machinery	2.4	8.4
Home appliances		
TV	87.2	9.1
Refrigerator	77.8	14.9
Washer	69.9	15.7
Vacuum cleaner	46.0	15.3
Cassette player	44.0	7.2
VCR	4.7	10.0

Source: Author's data.

Despite the general complaints about financial difficulties, rural families appear to be well endowed with basic home appliances (Table 5.21). About 70% own refrigerators and washing machines, and nearly 90% have a television set. Television has thus completely displaced radio as the basic communication channel in rural areas. Cars are not particularly widespread among farm employees: less than 30% of respondents report that they own a car. Employee households have practically no farm machinery on their small plots: only 2% report a tractor or other mechanized equipment. There are generally no plans to purchase any equipment or appliances in the future. This may be a reflection of financial constraints, high prices, and unavailability of durable goods.

6

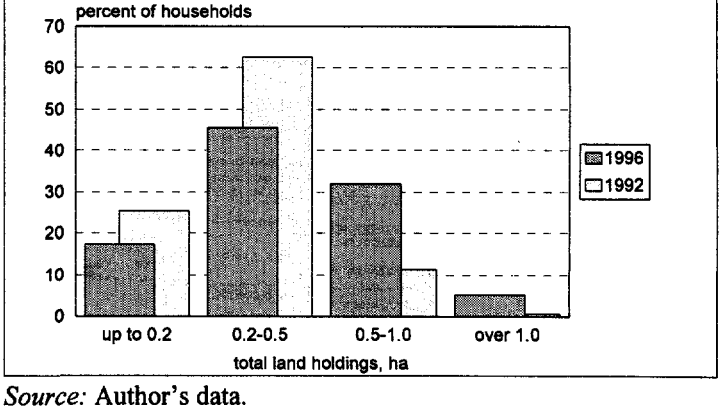
Impact of Reorganization on Employees of Farm Enterprises

Land reform and farm reorganization affect the lives of rural households in several dimensions. First, there is the impact of land reform programs on the size of the household plot, which as we have seen in Chapter 5 is a major source of income for families of farm-enterprise employees. Second, farm-enterprise employees participate in the process of distribution of land and asset shares, which is designed to endow them with property rights and encourage to participate in internal restructuring of their farm enterprises. Third, internal changes at the farm level affect every aspect of family life in the village, and determine the balance between those who decide to remain in the collective and those who prefer to strike on their own as independent farmers. The present chapter analyzes the impact of land reform and farm reorganization on families of farm-enterprise employees based on survey data for the same 1674 rural households that were used in Chapter 5 to profile the household component of the individual farming sector.

Land and Land Tenure

The household plot of farm employees averaged 0.5 ha in 1996, up from 0.3 ha in 1992, an increase by a factor of nearly 1.5. Over 60% of household plots do not exceed 0.5 ha, and only 5% of respondents report more than 1 ha (Fig. 6.1). This, however, constitutes a substantial improvement compared with 1992, when nearly 90% of household plots did not exceed 0.5 ha and there were virtually no plots bigger than 1 ha (Fig. 6.1).

Fig. 6.1. Distribution of Household Plots by Size



Source: Author's data.

The size distribution of household plots in 1992 was fairly uniform across provinces. Since then, a clear differentiation of household plots by size had emerged in three groups of provinces (Table 6.1). Donetsk and Kherson are characterized by the smallest household plots (0.3 ha in 1996), which

increased on average by a factor of 1.4 compared with 1992. Kiev, Cherkassy, Sumy and Vinnitsa constitute the middle group, with plots of 0.5 ha equal to the Ukrainian average (the average household plot in these provinces also increased by a factor of 1.4 compared with 1992). Poltava, Khar'kov, and Ternopol' have the largest household plots, which average 0.6 ha and are 1.8 times bigger than in 1992. There is no relationship between the size of the household plots in 1996 (or their increase since 1992) and the land endowment per person across provinces. For example, in the group with the smallest household plots, Donetsk has very low land endowment per person while Kherson has the second highest in Ukraine. The greatest change since 1992 is observed in Khar'kov, where the household plots increased by a factor of 2.1 from 0.30 ha in 1992 to 0.63 ha in 1996. Yet Khar'kov has a below-average land endowment per person. The size of household plots and the change since in 1992 are apparently determined by local provincial politics, and not so much by availability of land.

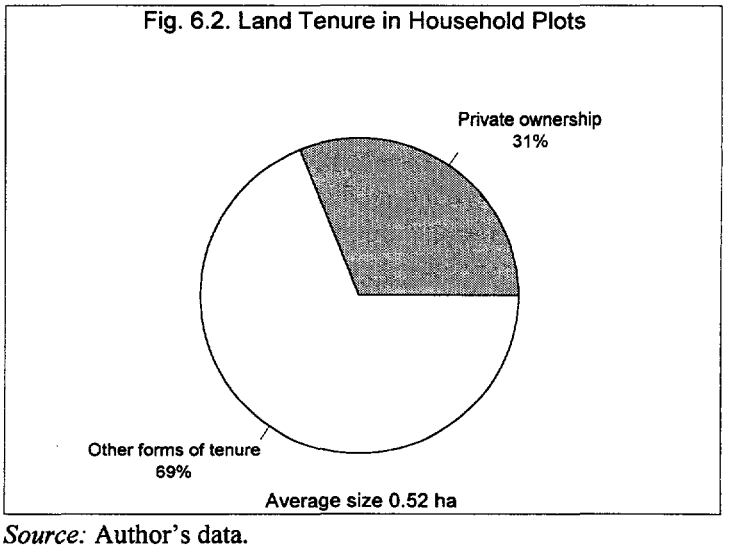
Table 6.1. Size Distribution of Household Plots Across Provinces

Provinces	Percent of respondents	Size of household plot, ha		1996/1992
		1992	1996	
1 Donetsk, Kherson	18	0.24	0.34	1.4
2 Kiev, Cherkassy, Sumy, Vinnitsa	46	0.35	0.49	1.4
3 Poltava, Khar'kov, Ternopol'	36	0.34	0.62	1.8
All Ukraine	100	0.35	0.52	1.5

Note: The size differences are statistically significant between groups of provinces and are not statistically significant between provinces within each group.
Source: Author's data.

According to current laws, household plots are regarded as private land. Presidential decrees and cabinet resolutions in recent years clearly stipulate that all land allotted to household plots is to be transferred from state to private ownership. Yet the respondents indicate that only 31% of the land in their household plots is privately owned, while the remaining 69% is still in use rights from the state (Fig. 6.2). This is basically the same as in the previous World Bank survey conducted in 1994. Moreover, 74% of respondents do not have any certificate of ownership for their household plot. Among those who report that their land is privately owned, only one-third have an official certificate of ownership (the

Fig. 6.2. Land Tenure in Household Plots



Source: Author's data.

same percentage as in the 1994 survey). Thus, there has been no change since 1994 in the degree of implementation of previous decisions about privatization of land.

The majority of respondents are satisfied with both the quality and the quantity of their land. Two-thirds of respondents report that their land is of satisfactory quality, and only 38% indicate that they would like to increase their holdings. On the whole, it is households with smaller land holdings that express demand for additional land: households that desire additional land currently manage 0.45 ha on average, while households that do not desire additional land manage 0.57 ha on average (the difference is statistically significant). The mean demand is for an additional 2.8 ha, which is six times the average land holdings among those who would like to get more land. While the total demand for additional land increases with the increase of present holdings, the demanded percentage increase is much greater for household with relatively small land plots (Table 6.2). Thus, households with plots of up to 0.2 ha of land demand an additional 2.2 ha, or 17 times their present average holdings. Households with more than 0.5 ha demand an additional 4.0 ha of land, but this constitutes only 5 times their present average holdings.

Table 6.2. Demand for Additional Land

Actual land holdings category	Percent of respondents	Mean holdings, ha	Additional demand, ha	Mean ratio of additional demand to present holdings
All sample	36%	0.44	2.8	9.4
Up to 0.2 ha	10%	0.13	2.2	17.6
0.2-0.5 ha	15%	0.36	2.3	7.8
Over 0.5 ha	11%	0.83	4.0	4.4

Source: Author's data.

Respondents apparently believe that local authorities and perhaps the collective farm enterprise are the only sources for additional land. Only 8% indicate that they are allowed to purchase land from other individuals, and only 9% report that they are allowed to purchase the use rights of land shares from other members of the farm enterprise. The rural population appears to be misinformed on both these counts. First, the cabinet decree "On Privatization of Land Allotments" of December 1992 allows free transactions in privately owned land of household plots. Second, presidential decrees of 1994 and 1995 allow individuals to sell their land shares to other members of the farm enterprise. Misinformation regarding the rights to transactions in land is not limited to the rank-and-file, however. Among managers of large farm enterprises participating in the present survey, only 9% reported that land shares could be sold and bought within the enterprise (the same percentage as among their employees). In addition to speeding up privatization, it is essential to ensure better dissemination of relevant information in the rural areas.

Farm Reorganization

Reorganization typically involves re-registering the farm enterprise as a new organizational form with a new legal name. Thus, before the beginning of reforms in agriculture, 90% of the farms in the sample were organized as kolkhozes (collective farms), and the rest as sovkhozes (state farms). In 1996, at the time of the survey, 60% of the farms were identified by respondents as KGSP, i.e., collective farm enterprise, the direct successor of the traditional kolkhoz, which is no longer recognized as a legal form. Among the rest, 23% were identified as closed joint-stock societies, and 5% remained registered as state farms (Table 6.3).

Table 6.3. Farm Organization: 1990 and 1996

Organizational form	1990	1996
State farm	10	5
Collective farm	90	--
Collective farm enterprise	--	59
Joint-stock society	--	23
Agricultural cooperative	--	7
Agro firm	--	4
Association	--	2

Source: Author's data.

In total, 83% of respondents reported that their farm had reorganized, up from 75% in the 1994 World Bank survey (Table 6.4). The main wave of farm reorganizations took place in 1992-1993, and more than 60% of reorganized farms had completed the process by the end of 1993 (Fig. 6.3).

Table 6.4. Reorganization as Reported by Farm Employees (percent of respondents)

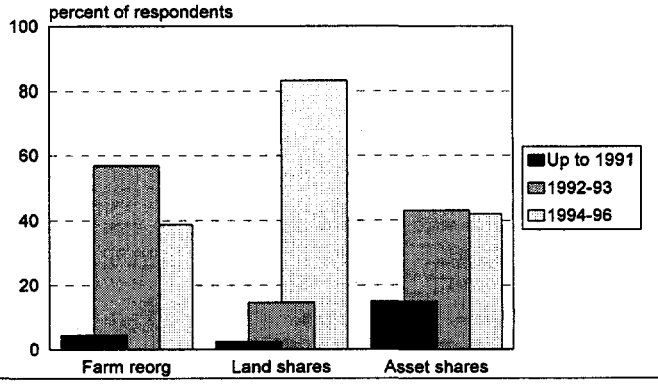
	1994	1996
Farms reorganized	75	83
Land shares determined	27	42
Asset shares determined	54	64

Source: Author's data.

The first stage of farm restructuring, which involves a formal change of organizational form, is followed by distribution of land and assets by the enterprise to individual members and workers in the form of "conditional shares," or paper certificates of entitlement to a share of land and assets. Distribution of paper shares is an interim phase, and it is ultimately expected to lead to physical distribution of land plots and assets in kind. Respondents report that by 1996 land shares had been determined on 42% of the farms and asset shares on 64% of the farms. This is a definite increase

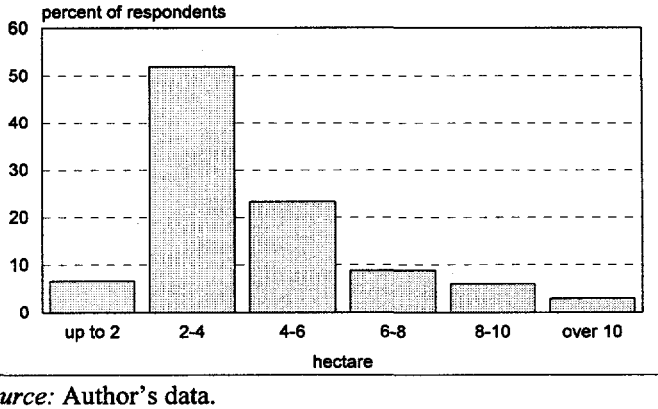
compared to the situation in the 1994 World Bank survey (Table 6.4), but roughly half the population are still without any certificates of entitlement to land and assets of the former collective enterprise. A look at the reorganization time scale (Fig. 6.3) shows that the determination of land shares lags behind the other components of the process: while most farm reorganizations had been completed by the end of 1993 and nearly 60% of farms had determined asset shares by the end of that year, the determination of land shares practically began only in 1995, after the enabling presidential decrees had been signed.

Fig. 6.3. Progress of Farm Reorganization



Source: Author's data.

Fig. 6.4. Distribution of Land Shares by Size



Source: Author's data.

The average land share in the sample is 4.5 ha, with the bottom quartile of respondents reporting land shares up to 3 ha and the top quartile reporting land shares greater than 5 ha. For 10% of respondents, the land shares are 8 ha and more. The size distribution of land shares in the survey is shown in Fig. 6.4. Farm employees report larger land shares than farm mangers (3.6 ha; see the section *Land and Asset Shares* in Chapter 4), possibly because they have included the household plot in their responses about land share size.

Since land shares are determined locally according to the specific conditions in each region, there is considerable variability of land share sizes across provinces (Table 6.5). Three groups of provinces are distinguished: provinces where the average land share is around 3 ha (Cherkassy, Ternopol', and Vinnitsa), provinces with land shares of around 4 ha (Kiev and Sumy), and provinces with land shares approaching 6 ha (Kherson, Poltava, and Khar'kov). The differentiation among provinces is determined by the quality of land and the density of rural population. Thus, Donetsk stands out with very large land shares of 7.4 ha because the rural population in this industrial district is small relative to the urban population and the agricultural land is of poor quality.

Beneficiaries appear to be uninformed about the rights attached to land shares. Thus, only 8% of respondents with shares report that it is allowed to sell land shares, only 22% report that land shares may be leased out, and only 26% report that shares may be received in the form of a plot of land

when the individual leaves the farm enterprise to establish a private farm (Table 6.6). In fact, all these options are perfectly legal, although selling of land shares is still allowed only within the enterprise. On the other hand, most respondents (80%) know that they are allowed to "invest" their land shares in the farm enterprise, thus becoming shareholders of a new corporate entity. This option is recognized by almost all respondents probably because it has been repeatedly emphasized by farm managers, who very conveniently have omitted to mention the other legally available options for internal restructuring.

Table 6.5. Distribution of Land Share Sizes by Province

Province	Number of respondents	Average land share, ha
1 Donetsk	32	7.4
2 Kherson	41	5.9
Poltava	77	5.8
Khar'kov	54	5.6
3 Sumy	207	4.2
Kiev	70	4.1
4 Ternopol'	36	3.2
Cherkassy	67	3.0
Vinnitsa	43	2.8
5 Ukraine	627	4.5

Source: Author's data.

Table 6.6. Rights Associated with Land Shares and Planned Use of Land Shares (percent of respondents)

	Rights	Plans reported by respondents		
		all respondents (100%)	single choice (75%)	multiple choices (25%)
Pass in inheritance	60			
Invest in a collective enterprise	79	65	69	77
Lease out	22	32	23	60
Sell	8	2	1	6
Give as a gift	15	12	1	50
Exit with land to establish a private farm	26	5	2	19
Enlarge household plot		7	4	16

Source: Author's data.

Farm managers are apparently the main source of information about land reform for the rural population, as most peasants naturally do not follow the latest (and rapidly changing) legal developments, and those who do still need somebody to interpret the legal language for them. Although nearly 40% of respondents (50% among those with land shares) report that they are familiar with the latest key presidential decrees concerning land shares, this is not reflected in their knowledge of their rights.

In line with the limited awareness of the available options, two-thirds of the respondents indicate that they plan to invest their land shares in the enterprise. This is the most preferred option. It is followed by the option of leasing the land shares to the enterprise, which is chosen by more than 23% of respondents reporting a single choice. Very few respondents plan to sell their land share or use it to create an independent private farm. A somewhat greater number of households intend to use their share to increase the household plot (4% of respondents reporting a single choice), although the plot size for these households is not smaller than for the rest.

Asset shares have been determined according to 64% of respondents (see Table 6.4). Unlike the determination of land shares, which began mainly in 1995, the determination of asset shares has been spread uniformly over the years since 1991 (see Fig. 6.3). Although the process has been going on for five years, only 15% of respondents report that they hold an official document certifying their share of assets. The average asset share is 150 million krb., or about $750 at the exchange rates prevailing in the first quarter of 1996 (this average is calculated over 936 respondents reporting nonzero asset shares). For 50% of respondents, the asset share does not exceed 85 million krb., or about $450. In the 1994 survey, respondents reported asset share values averaging $300-$400, although on a different sample. The asset share values reported by farm employees in the present survey are consistent with those reported by farm managers, who indicate that workers are entitled on average to an asset share of 137 million krb., or $700 (see the section *Land and Asset Shares* in Chapter 4).

Impact of Reorganization

Farm reorganization has not produced significant benefits for employees of farm enterprises. The employees were asked to assess the impact of reorganization by a number of measures incorporating organizational, behavioral, and economic factors. These measures included the general situation in the farm enterprise, discipline and organization of work, relations within the collective, individual work load, and motivation or interest in one's work. Reorganization is naturally expected to produce a positive change by all these measures.

It is perhaps encouraging to note that more than half the respondents report that there has been no deterioration by each of these measures (Table 6.7). Yet only about 10% identify a definite improvement, while the majority report no change compared to the pre-reorganization state. Fully one-third of the respondents report no change by at least four of the five measures. Thus, so far, reorganization has not achieved its goals in the eyes of the employees. On the plus side, relatively

few respondents identify an outright change for the worse by the respective measures (Table 6.7), and the number of respondents who report that the situation is now worse by at least four of the five measures is negligible (about 4%).

Table 6.7. Assessment of Changes Following Reorganization of Farm Enterprise (percent of 1384 respondents in reorganized farms)

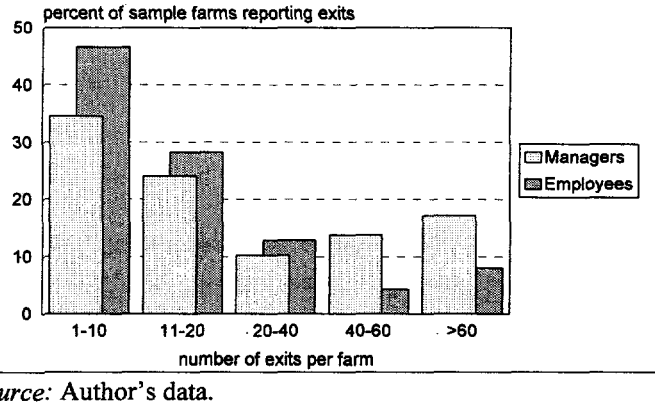
	Worse	Better	Unchanged
General situation	29	11	41
Discipline and organization of work	21	15	48
Relations within the collective	15	14	52
Work load	26	5	55
Interest in your work	16	13	53

Source: Author's data.

One positive outcome of reorganization is the marginally greater involvement of employees in decision making at the farm level. Thus, 54% of respondents report that they now participate in decisions, compared to 48% before reorganization (the difference is statistically significant by the chi-square test). Among those who did not participate in decision-making prior to reorganization fully 20% report that they are now involved in farm-level decisions.

Reorganization has produced some changes in labor force in farm enterprises. More than half the respondents report that some employees have left their enterprise. In 50% of cases, the number of departures is between 5 and 20, with a median of 12. About 10% of respondents report between 60 and 200 departures from their farms. It is not clear, however, if this has been the result of intentional layoffs or simply natural out-migration. The distribution of exits reported by employees is consistent with the pattern reported by farm managers (Fig. 6.5).

Fig. 6.5. Distribution of Exits from Farm Enterprises As Reported by Managers and Employees



Source: Author's data.

Starting a Private Farm

Only 6% of rural residents surveyed indicate that they would like to exit the farm enterprise with their share of land and assets and establish a private farm. The rate is not higher among respondents

on farm enterprises where land shares have been determined. Nearly half the respondents (47%) are opposed in principle even to the right of exit with land and asset shares, although this right is protected by existing legislation. About one-quarter of respondents support the right of exit, but mostly with qualifying conditions ("later," "when the economy has stabilized," "when the legal framework for private farming is in place," "if machinery is available," "if government provides support programs for machinery and credit," etc.).

The reluctance to leave the collective enterprise can be understood by examining the capital and land resources that are needed, in the view of the rural population, for the establishment of a private farm. Respondents believe a private farm can be established on 50 ha of land. Although 15% of respondents report that 100 ha and more are needed, 50 ha is a magic number: fully 30% of answers focus on this exact figure. Overall, the responses are concentrated in a fairly tight range, with 60% of respondents citing between 20 ha and 60 ha as the minimum required to establish a private farm.

It is more difficult to obtain a meaningful estimate of the minimum value of assets required to start a private farm. There are serious problems with the values recorded during the interviews, and the units of measurement are not always clear. As a result, the distribution spans an extremely broad range, from 5 million krb. to well over 100 billion krb. The median capital requirement is 10 billion krb., or $50,000 at the exchange rate prevailing in the first quarter of 1996, while 75% of respondents report capital requirements of 2.5 billion krb. and higher ($12,500 and higher).

Land requirements of 50 ha per farm exceed by a substantial margin the total family entitlement, which includes the household plot (0.5 ha) and two or three land shares (10-15 ha, representing the entitlement of the husband and wife team, with the possible addition of an adult offspring or one of the grandparents). Rural residents thus do not envisage any possibility of establishing a private farm without acquiring land from additional sources, which in the absence of land markets are not readily identifiable or available. The capital requirements cited by the respondents are even a more daunting obstacle: with annual family incomes of $1,000 and asset shares valued at about $750 per adult person, a capital base of more than $10,000 for a new farm is inconceivable (Table 6.8).

Table 6.8. Resource Availability of Rural Households and Resource Requirements for Private Farming

	Land, ha	Assets (million krb. and $ at 1995 rate)	
Household plot	0.5		
Total entitlement to shares*	11.5	215-375	$1,400-$2,500
Annual income		150	$1,000
Total resources available	12 ha	350-525	$2,400-$3,500
Estimated resource requirements	50 ha	over 2,500	$12,500

* Based on an estimate of 2.5 adults per household, average land share of 4.5 ha, and average asset share value of between 85 million krb. and 150 million krb.

Source: Author's data.

Respondents' views are probably influenced by estimates that are often published in newspapers and magazines. These estimates typically come from experts of the old school, who are used to thinking in terms of large-scale capital-intensive farms. These experts cannot imagine a farm without its own tractor and a full complement of other "essential" machinery. Hence the truly exorbitant estimates of startup capital. These experts are used to traditional farms of 2,000-3,000 ha, and they ridicule the idea of a farm with less than 50 ha to 100 ha. Hence the "popular wisdom" (in Russia and Ukraine) which claims that a farm must have 100 ha to be economically viable. The estimates of resource requirements that emerge from the survey are not truly independent estimates by peasants, but these numbers certainly influence their thinking and their decisions, restraining motivation for change in the traditional organization of farms.

Attitudes to Private Property and Land Markets

Rural residents are not overwhelmingly supportive of the notion of private ownership of land and farm assets. Around 50% express positive attitude to private property, whereas 20% are opposed, and the rest are undecided or indifferent (Table 6.9). There are no significant differences in the attitudes toward land and non-land assets. The attitude toward private ownership of land is not affected by distribution of land shares to individuals. Distribution of asset shares, on the other hand, produces a slight (but statistically significant) shift toward a positive view of private ownership of non-land assets: the proportion of respondents who support private ownership of assets is 55% among households with asset shares and 44% among households without asset shares (Table 6.9).

Table 6.9. Attitudes to Private Property (percent of respondents)

	All sample		Respondents with shares		Respondents without shares	
	Yes	No	Yes	No	Yes	No
Land	48	22	54	22	48	22
Non-land assets	50	22	55	20	44	26

Source: Author's data.

Rural residents on the whole have a grim view of land markets (Table 6.10). Nearly three-quarters of respondents believe that permission to buy and sell land will lead to speculation, and close to one-half of respondents are of the opinion that land markets will result in accumulation of land in the hands of absentee landlords ("those who do not want to cultivate their land"). Only one-quarter of the respondents support the view that markets will allow land to flow to the more efficient farmers.

There is a strong correlation between the views on speculation and the ultimate concentration of land in the hand of efficient farmers or absentee landlords (Table 6.10): those who believe that land markets will lead to speculation in land are mainly of the opinion that absentee landlords will take over most of the land (50% of respondents in this category); those who are not concerned about speculation are of the opinion that land will accumulate in the hands of the more efficient farmers

(75% of respondents in this category). Similarly, those who support private ownership of land tend to believe that land will flow to the more efficient farmers, whereas those who oppose private ownership of land hold the view that land will accumulate in the hands of absentee landlords (Table 6.10).

The deep opposition to buying and selling of land is evident from the fact that even among those who support private ownership of land nearly 70% believe that this will lead to speculation in land (Table 6.10). This is a very high proportion of respondents, although it is less than the percentage among those who oppose private ownership of land, where 87% claim that land markets will result in speculation.

Table 6.10. Expected Consequences of Allowing Buying and Selling of Land (percent of respondents)

	All sample	Respondents reporting there will be		Respondents whose attitude to private property is	
		speculation	no speculation	positive	negative
Speculation	74	100	0	68	87
Land will flow to efficient producers	24	16	75	36	7
Land will flow to absentee owners	45	50	10	38	53

Source: Author's data.

Consistently with the attitudes toward land markets, more than half the respondents (54%) oppose the notion of buying and selling the household plot. Those who explain their view are mainly afraid of spreading speculation and chaos (40%). Another group of respondent take an even more ideological view: they in principle regard land as a non-tradable commodity (20%). A third sizable group of respondents regard the household plot as the main source of subsistence that must be kept in the family as a safeguard against poverty and starvation and passed on to the next generation in order to preserve the traditional life style (25%).

The negative attitude toward transactions in land extends also to transactions in land shares, those paper certificates of ownership. Less than 20% support the right to sell their land and asset shares even to other members of the collective. The view of farm employees that land and asset shares are absolutely non-tradable matches the view of farm managers (see Chapter 4, Table 4.8). Both groups of respondents are thus misinformed about current legal provisions.

7

Private Farmers

Private farmers are a new phenomenon in the individual farming sector that began to emerge since 1991. While household plots are cultivated by families of members and employees of farm enterprises, so-called private or peasant farms are established as independent legal entities outside the collectivist framework. This chapter is based on a survey of 127 private farmers in 11 provinces (see Preface, Table A). Most private farms in the sample (67%) were registered in 1992 and 1993, with another 25% registered in 1991 or 1994. There were practically no farm registrations prior to 1991, and the sample included very few farms registered in 1995 and later. At the time of the survey (January-March 1996), the farms were thus more than one year old.

Demographic Profile of Private Farmers' Households

The average family size among respondents is 4.2, with 60% of the families reporting 3-4 members and 94% comprising 6 members or fewer (Table 7.1). Nearly 70% of family members are adults of normal working age (between the ages of 18 and 60), and the dependency ratio is thus a comfortable 0.4. This is sharply at variance with the situation for the general rural population, i.e., mainly the population in farm enterprises, where according to village council data pensioners account for 32% of the population and the dependency ratio is 1.1.

Table 7.1. Family Size and Age Distribution of Household Members

Number of members	Percent of households	Age group	Percent of household members
1-2	7.9	Children (under 12 years)	12.4
3	16.5	Youth (between 12 and 18)	13.3
4	44.1	Adults (between 18 and 60)	68.8
5	15.7	Seniors (60 years and older)	5.5
6	9.4		
7	4.7		
8 and more	1.6		

Source: Author's data.

Overall, males slightly outnumber females in the sample (54% males versus 46% females), primarily due to the higher proportion of males in the dominant group of adults between the ages of 18 and 60. The proportion of males, however, declines with age, and it is females that account for more than 50% of household members in the over-60 group (and approach 60% in the over-70 group). This is a reflection of the generally shorter life expectancy of males in Ukraine (see Chapter 5, Fig. 5.1).

Table 7.2. Education Level of Household Members by Family Status, Age Group, and Gender

	Head of farm	Spouse	Adults (18-60)	Seniors (≥60)	Adults: males	Adults: females	Seniors: males	Seniors: females
Higher	47	31	37	11	41	32	21	0
Secondary	49	65	60	39	56	64	29	50
8 grades and less	4	4	3	50	3	4	50	50

Source: Author's data.

Private farmers are well-educated: 37% of adults between the ages of 18 and 60 have higher or partial higher education and 60% have secondary education (Table 7.2). Only 3% report having completed eight grades or less. This is in contrast to employees of farm enterprises in the same age group, where only 18% have higher or partial higher education and 9% have completed eight grades of less. Among senior family members aged 60 and older, only 11% have higher education and 50% finished eight grades of less. The younger generation obviously enjoyed greater opportunities for education during the decades of the Soviet regime. There is a pronounced gender bias in the achieved level of education in both age groups. In the 18-to-60 age group, 40% of males report higher education, compared with 30% of females. In the over-60 age group, only males have higher education, while all females report secondary and elementary education.

Table 7.3. Employment on Family Farm by Age Group and Family Status

	Adults	Seniors	Children and youth	Head of farm	Spouse
Full-time	54.1	35.7	3.9	96.9	40.2
Part-time	35.5	53.6	30.4	3.1	46.4
Not employed on the farm	10.4	10.7	57.8	0.0	13.4
Total	100.0	100.0	100.0	100.0	100.0

Source: Author's data.

The head of farm is typically 45 years old, male (98% of respondents), and works full time on the farm (97% of respondents). The spouse is 42 years old, and generally diversifies her occupation between the farm and other work (Table 7.3): 40% of spouses work full time on the farm, 46% work part-time on the farm, and 13% do not work at all on the farm. The main off-farm occupations of spouses are in the social sphere: 40% of spouses who are not employed full time on the farm work as teachers, medical nurses, and employees of other social services in the village or in the local

collective enterprise. Seniors in farm households are far from retired: nearly all of them work to some extent on the farm (Table 7.3). However, the pensioners do not report any off-farm occupations, and they basically work part-time, as is appropriate for their age and social status.

Practically all respondents (87%) live in a family-owned house. Ukrainian private farmers generally do not build their home on the farm, and only 20% of respondents actually live on the farm. The majority of private farmers live with their families in the nearby village (55% of respondents) or even in the district town (20%). Farming thus involves daily travel to the farm, which is located up to 4 km away from the family home for 50% of farmers and up to 10 km away for 80% of farmers.

Creation of Private Farms

Two-thirds of respondents report that they became private farmers to be independent. Prior to taking up private farming, the head of household was typically an employee of the local collective or state farm (55% of respondents). In the remaining cases, the farmer used to work in rural services in the village (13%) or had a managerial position in the district center (18%).

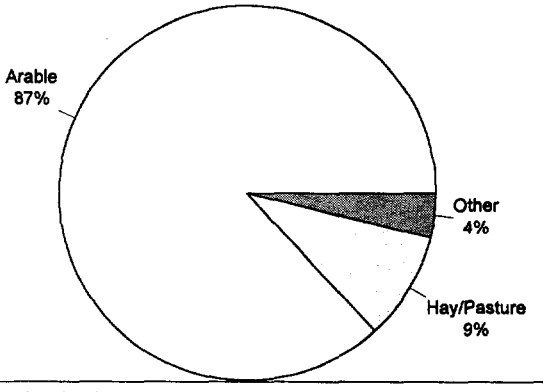
Over 80% of farmers who previously worked in the local collective or state farm report that, contrary to current laws, they did not receive anything on exit from the collective. About 10% explain that the determination of land and asset shares in their former collective has not yet been completed, but practically nobody in the sample left the collective farm with a share of land and assets. As a result, the survey of private farmers does not provide any information on value of asset shares, size of land shares, and procedures for withdrawal of shares on exit.

Farmers report that the minimum requirements to start a private farm typically include from 50 ha to 100 ha of land and a capital of 5 billion to 20 billion krb. The capital requirement is between 5 times and 20 times the sales revenue reported for 1995 (see Chapter 8, Table 8.7), which is very high from considerations of payback. In dollar terms, the reported capital requirement is equivalent to $25,000-$100,000 at the exchange rate that prevailed in the first quarter of 1996, and looks highly exaggerated by Ukrainian standards. These estimates are consistent with the startup requirements reported by employees of farm enterprises, who suggest 50 ha of land and median capital of 10 billion krb., or $50,000 as the minimum for a viable farm (see *Starting a Private Farm* in Chapter 6). Consistency of estimates provided by two different groups of respondents does not necessarily prove their validity: both groups may be strongly influenced by figures frequently published in newspapers and magazines that everybody reads.

Land and Land Tenure

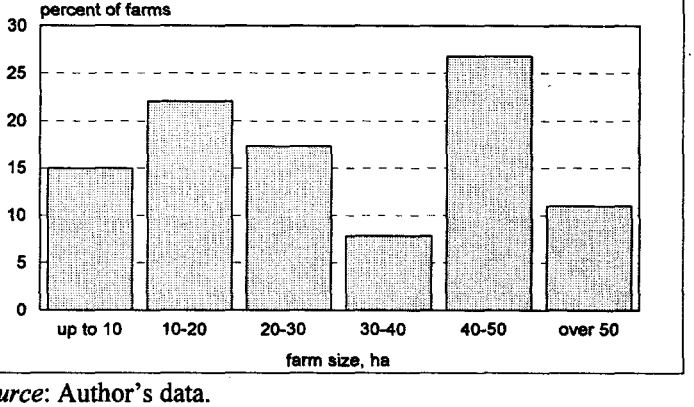
An average private farm in the sample has 33 ha, of which 87% is arable land (including a very small area under orchards) and 9% is pasture and hay meadows (Fig. 7.1). The average farm size increased over the years from 27 ha at the time of creation to 33 ha at the time of the survey (the difference is statistically significant). The distribution of farms by size is distinctly bimodal (Fig. 7.2): there is a relatively large number of farms with 10-20 ha of land and a similar number with 40-50 ha (20%-25% of farms in each group). About 10% of farms have more than 50 ha of land.

Fig. 7.1. Structure of Farm Land in Private Farms



Source: Author's data.

Fig. 7.2. Size Distribution of Private Farms



Source: Author's data.

Half the farmers are satisfied with the quality of their land, but 40% of the farmers report dissatisfaction. Opinions are evenly divided between those who regard their land as being of average quality and those who regard their land as being below average (none of the respondents said their land was of above-average quality). The survey certainly does not support the prevailing opinion that farmers get the worst possible land from the collective enterprise or the district authorities.

Although the farms surveyed are registered private farms, less than 10% of their land is privately owned. The privately owned component is about 3 ha, which is roughly equal to the size of the average land share as reported by managers of farm enterprises. Most land on private farms (83%) is still in the old tenurial form of lifetime inheritable possession and permanent use (Table 7.4). About 8% of the land (on average 2.5 ha per farm) is leased. There is no real pressure from the farmers to get their land registered in private ownership. Two-thirds of respondents identify private ownership as the preferred form of land tenure, but 30% still prefer the traditional form of lifetime inheritable possession.

Table 7.4. Structure of Land Tenure in Private Farms

	All sample	Farms w/out leased land	Farms with leased land
Number of farms	127	109	18
Average farm size	33.1 ha	33.0 ha	34.1 ha
Privately owned land	8.8%	8.7%	9.2%
Lifetime possession and permanent use	83.2%	91.3%	46.1%
Leased	8.0%	--	44.7%

Source: Author's data.

Land for private farms comes from two main sources: the district government and the village council. Each of these sources provides roughly 50% of the holdings on an average farm. The village council is also the source for half the leased land in farms surveyed. The other half, however, is leased from the local collective enterprise. Individuals, including farmers and shareowners of collective enterprises, are not a source for leasing land.

About 15% of the farmers surveyed lease land. However, the average farm size is practically the same for those who lease and for those who do not lease land (Table 7.4). The component of privately owned land is also the same in farms of both categories, at just below 3 ha per farm, or less than 10% of total holdings. In farms that do not lease land, the remaining 90% is identified as being in lifetime inheritable possession and permanent use. In farms with leased land, the remaining 90% is equally divided between lifetime possession and permanent use, on the one hand, and leasing, on the other. It thus seems that leasing of land is used by some farmers as a stopgap measure: they lease from the local collective farm a plot of land that they will eventually get from the state reserve through the district government. Leasing is not practiced as a mechanism to increase the farm size above average.

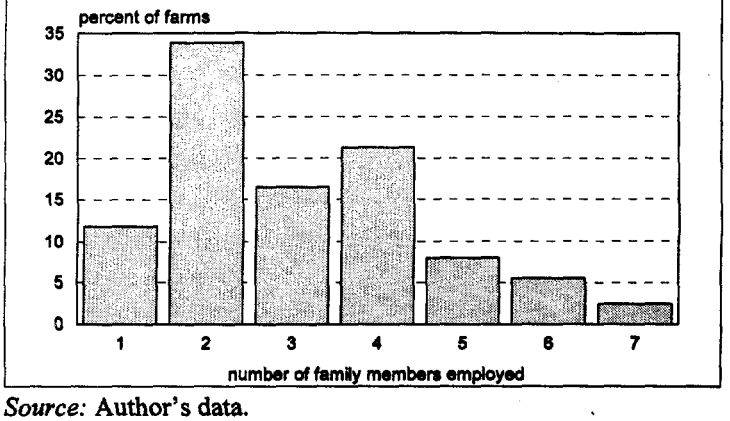
Over 80% of farmers would like to increase their land holdings, typically by 50-100 ha. The mean enlargement desired is 85 ha. Those few who do not wish to increase their farm complain about lack of machinery, equipment, and capital needed to support larger holdings (about 65% of respondents in this group). Three-quarters of those who wish to increase their farm are already taking active steps to acquire more land, mainly through the village council (40%), from the state reserve (20%), or by renting land shares from farm-enterprise employees (10%). They run into difficulties with bureaucracy and resistance of local authorities to distribution of land for private farming (35%) or with inadequate legislation and limited allocation of land shares to employees (25%). In some cases (30%), the state reserve has been exhausted and no land is left for distribution to private farmers.

Nearly 60% of respondents report that land may be leased from other private landowners, but half the respondents report that it is prohibited to buy privately owned land or even land shares. Only about 30% of respondents believe that land or land shares may be purchased from private owners.

Labor

A typical farm employs between one and five family members. This includes on average 1.6 family members working full time on the farm and 1.4 family members working part time. The average number of family members employed on the farm (full or part time) is thus 3.0 out of an average family of 4.2. The distribution of the number of family members employed on the farm is shown in Fig. 7.3.

Fig. 7.3. Family Members Employed on Farm



Source: Author's data.

In addition to family members, farms also employ hired workers. Analysis of labor costs shows that the payroll cost of hired hands in 1995 was practically equal to the cost of family labor imputed in farm financial statements (40 million krb. for each group of workers, before social benefits). It is therefore reasonable to assume that an average farm employs three hired workers in addition to three family members, and there are a total of six people working full time or part time on the farm. Given that an average farm has 33 ha of land, this works out roughly at one worker per 5.5 ha (there is no statistically significant relationship between farm size and the number of family members employed).

For comparison, in traditional collective farms one worker supported between 7 ha and 8 ha of cropped land. The official statistics for collectives, however, were based on full-time worker equivalents. If we assume that half the workers in private farms work full time and the rest work half-time (this assumption is based on the average number of full-time and part-time family members given above), then the average number of full-time equivalents per farm is 4.5, and each full-time equivalent supports 7.3 ha in private farming, which is about the same as for large-scale collectives. These very crude estimates are highly sensitive to the specific assumptions about hired labor. They serve to show, however, that at this stage there are no clear-cut differences in labor intensity or the land-to-labor ratio between new private farms and traditional collectives.

Farm Machines

Practically all farmers in the sample have a tractor, and on average there are two tractors per farm (Table 7.5). Half the farmers have combine harvesters and nearly 60% have trucks or other vehicles. Farmers with combines or trucks report on average about one combine or one truck per farm. Nearly 40% of farmers report that they have all three kinds of equipment: a tractor, a combine, and a truck. Another 30% report that they have two of the three machines (a tractor plus a combine or a truck).

Table 7.5. Availability of Farm Machinery Among Private Farmers in the Sample

	Percent of farmers reporting machinery	Average number per farm	Range
Tractor	94%	2.1	1-7
Combine harvester	48%	1.2	1-4
Truck	56%	1.3	1-3
Cultivator	16%	1.3	1-2
Trailer	15%	2.2	1-15
Seeder	7%	1	1
Plow	8%	1.5	1-3

Source: Author's data.

Given the land endowment of farmers in the sample, there is one tractor per 14.5 ha of arable land and one combine harvester per 48.5 ha of arable land (Table 7.6). These land-to-machines ratios for private farms in the sample are surprisingly generous compared with the national average for collective and state farms in Ukraine, which in 1995 stood at 66 ha per tractor and 311 ha per combine harvester.

Table 7.6. Availability of Farm Machinery: Sample Farms and National Average

	Inventory of farm machines, units		Land-to-machines ratio, ha/unit	
	Sample	Ukraine	Sample	Ukraine
Tractors	247	437,000	14.5	65.6
Combine harvesters	74	92,000	48.4	311.8
Trucks	91	289,000	39.4	99.2
Arable land, ha	3,583	28,682,000		

Source: Author's data.

The machines are usually purchased privately with farmers' own funds (Table 7.7). Machines acquired with asset shares on exit from the collective represents a very small percentage of the farm machine inventory in the sample. Joint or cooperative purchase of farm machinery by several farmers is not widespread either. The relatively expensive combine harvesters are an exception to a certain extent: 16% of combines in the sample are reported to be jointly owned and operated.

Over 40% of farmers plan to purchase some machinery or equipment in 1996. The percentage of respondents who plan to purchase machinery decreases as the current inventory of farm machines increases (Table 7.8). Thus, among farmers without any tractors nearly 60% plan to purchase a tractor next year, whereas among farmers with one tractor only 25% plan to purchase an additional

tractor in 1996. Farmers who currently own four tractors or more have no plans to purchase new tractors next year. A similar pattern of declining demand for machinery with the increase of current inventory is observed also for combines and trucks.

Table 7.7. Sources of Machinery in Private Farms

	Privately purchased	Cooperatively purchased	Acquired against asset shares
Tractors	93%	4%	4%
Combine harvesters	81%	16%	3%
Trucks	84%	7%	9%

Source: Author's data.

Table 7.8. Plans to Purchase Farm Machines in 1996 for Farmers with Different Levels of Current Mechanical Inventory (percent of respondents)

Current inventory of farm machines, pieces	Tractors	Combines	Trucks
0	57%	17%	30%
1	25%	14%	11%
2	18%	10%	0%
3	14%	0%	
4	0%		

Source: Author's data.

Auxiliary Buildings

Nearly half the respondents (46%) report that they have various auxiliary buildings on the farm. The most common structure, reported by one-third of respondents, is an enclosed or open shed that serves for storage, repairs, or packing, and sometimes as a garage for vehicles and machines. About 20% of respondents report some livestock buildings on their farm, mainly barns for cows or pigs. In the overwhelming majority of cases, the buildings were acquired or built with own funds. There is only one instance of a livestock barn acquired in exchange for asset shares and three instances of buildings acquired jointly with other farmers (two open sheds and one processing unit).

About 40% of respondents, all of them without auxiliary buildings on the farm, planned to build barns and enclosures for livestock, as well as various open or enclosed sheds during 1996. There are no large plans for new construction among farmers who already have some farm buildings.

Storage Capacity

One-quarter of respondents report availability of storage space for grain on their farms. The average storage capacity is 80 ton of grain, and farmers report that on average they need a capacity for 17 ton more. Only about one third of this additional capacity (6 ton) is planned to be built in 1996. In addition to farmers with grain storage capacity, some farmers (about 8% of respondents) report storage space for potatoes, legumes, and other products. The capacity for non-grain products is less than 10 ton, and farmers report that they need to double the existing capacity.

Among farmers who are currently without any storage capacity, the average need is for about 100 ton, and there are plans to build two-thirds of the required capacity (about 65 ton) during 1996. Most of the demand is for grain storage (30% of respondents), but some farmers intend to build storage space for potatoes or fruits (9%).

Processing

Only 7% of respondents report that they have any processing capacity. Most of these process grain, either milling flour or baking bread. The average milling capacity per farm is about 500 ton per year. The average bread-baking capacity is 35 ton per year. A small number of farms (2%) press between 10 ton and 100 ton of vegetable oil per year.

Farmers who have already invested in processing have no plans to expand their existing capacity. About 20% of respondents (all of them without processing capacity) would like to invest in grain processing. Plans include milling, baking, and also feed mixing. The average planned capacity is about 200 ton per year per farm, but less than half this capacity will be built during 1996. Some farmers (about 5% of respondents) plan to build vegetable oil presses averaging about 70 ton per year. Most of them report that the oil plant will be constructed in 1996.

Relations with Neighbors and Cooperation

Three-quarters of farmers characterize their relations with other villagers as good and 20% as neutral. Less than 2% of farmers indicate that their relations with neighbors in the village are bad. Similarly, 60% of respondents have good relations with the local collective farm and only 10% describe their relations with the collective farm as bad. Over 30% of farmers do not maintain any relations with the collective farm. These findings explode the common myth that there is pervasive animosity between villagers and collective farm managers on the one hand and private farmers on the other.

Mechanical services are the main point of contact between private farmers and the local collective. About 40% of farmers rent machinery and equipment for field work from the collective farm. About 12% rent transport from the collective farm, and 15% use the mechanical repair and maintenance shops on the collective farm. Reliance on the local collective farm for mechanical services and

transport is not restricted to farmers without any farm machines. A substantial proportion of farmers with tractors, combines, and trucks still rent machinery services from the collective. Thus, fully 90% of farmers owning a tractor and 25% of those owning both a tractor and a combine rent mechanical services from the local collective; nearly 40% of truck-owners rent transport services. The assets available to private farmers are thus insufficient to cover all farm work, which is quite normal when farm services can be purchased through alternative market channels.

Nearly 90% of farmers report that they use their machinery and equipment to help neighbors with field work or other activities. There are instances of cooperative or joint purchase of farm machinery, mainly the more expensive items, such as combines, tractors, and trucks (see Table 7.7). However, the phenomenon is not widespread: the Ukrainian farmers are individualists who like to purchase their own equipment.

Cooperation is still undeveloped among private farmers in Ukraine. Only 18% of respondents are members in some service cooperative Yet fully 70% of respondents report that they would like to be a member in a service cooperative, if such a cooperative were established. The expressed need is equally divided among service cooperatives of different profiles, such as processing, product storage or marketing, input and machinery purchasing, provision of technical services.

Over 60% of farmers report that they are involved in solving the social problems of their village. The main assistance from farmers to the village comes in the form of financial contributions to village needs, donations of food and farm products to schools, hospitals, and the elderly, and provision of transport when required.

Crop Production

All respondents grow crops. Wheat and barley are the most popular cereals in the sample, both in terms of the proportion of land sown on an average farm (Table 7.9) and in terms of the percentage of farmers growing these crops (Table 7.10). Buckwheat ranks third among cereals, with close to one-third of farmers growing this grain. Overall, more than 70% of land on an average farm is under cereals, and 90% of respondents report that they grow some cereal.

Two typical industrial crops, sugar beet and sunflower, are also quite prominent in the sample. Nearly a quarter of the land on an average farm is under these crops, and 60% of respondents report that they grow sugar beet or sunflower. Sugar beet, however, is much more widespread than sunflower: only 19% of farmers report that they grow sunflower, compared with 48% growing sugar beets. This product mix differs sharply from that of household plots, where on average only 8% of land is sown to industrial crops (see Chapter 5, Table 5.10). Potatoes and vegetables, the main staple of household plots, are much less prominent among private farmers, where only 28% grow these crops. The crop mix of private farms thus emphasizes cash crops (cereals, sugar beet, sunflower) at the expense of crops traditionally used for family consumption (potatoes and vegetables).

Table 7.9. Cropping Pattern for Private Farms (in percent of average cropped area)

Crop	Percent of land	Crop	Percent of land
Wheat	29.7	Sugar beet	17.1
Barley	21.6	Sunflower	6.2
Buckwheat	9.3	Potatoes and vegetables	4.2
Other cereals	11.9	Total sown	100.0

Source: Author's data.

Private farmers in the sample do not achieve consistently higher yields compared with the national average. While the yields calculated from survey data for wheat, barley, and sunflower are not substantially higher than the Ukrainian average, the results for sugar beet and potatoes are quite favorable for private farmers (Table 7.10). This comparison should be approached with caution, because the yields in Ukraine show considerable fluctuations in recent years, and a proper analysis should be based on a comparison of long-term averages, which are not yet available for private farmers.

Table 7.10. Crop Production and Yields in Private Farms: 1995

	Farms reporting production, %	Sown area per farm, ha	Output per farm, ton	Average yield, kg/ha	
				sample farms	Ukraine*
Wheat	66%	11.1	33.0	3,130	2,970
Barley	58%	9.2	26.5	2,580	2,180
Buckwheat	29%	7.9	8.5	1,100	760
Corn	9%	16.3	68.1	3,880	2,920
Oats	7%	3.7	6.3	2,070	1,990
Millet	6%	8.2	14.9	2,350	1,700
Rye	5%	11.7	15.8	1,820	2,000
Sugar beets	48%	8.8	174.0	27,630	20,500
Sunflower	19%	8.2	11.3	1,390	1,420
Potatoes	20%	1.2	16.6	14,830	9,620
Vegetables	13%	4.0	49.6	12,640	11,540

* Based on official national statistics for 1995.

Source: Author's data.

Table 7.11. Relationship Between Profitability Assessment and Production Characteristics for Main Crops

	Producers reporting crop is profitable	Harvest, ton		Yield, kg/ha	
		Profitable	Unprofitable	Profitable	Unprofitable
Wheat	80%	33.8	30.9	3,240	2,800
Barley	59%	22.3	33.7	2,700	2,470
Buckwheat	62%	9.5	6.8	1,220	900
Sugar beet*	82%	191.2	84.6	29,400	20,600
Sunflower*	71%	13.6	5.9	1,590	920

* Differences of harvest and yield between profitable and unprofitable categories significant at 5% level

Source: Author's data.

All the main crops are judged profitable by 60%-80% of respondents (Table 7.11). Profitability assessment of the main crops is positively related to yields and total harvest. On the whole, respondents who judge the main crops profitable report larger total harvests and higher yields than those who judge the same crops unprofitable (Table 7.11). The relationship is statistically significant for industrial crops (sugar beets and sunflower), but not for cereals.

Table 7.12. Future Plans for Crop Production by Profitability Assessment (percent of producers in each category)

	Profitable			Unprofitable		
	Increase	Unchanged	Reduce	Increase	Unchanged	Reduce
Wheat	48	31	13	31	31	12
Barley	25	34	32	14	31	38
Buckwheat	30	47	9	14	21	57
Sugar beets	46	38	6	33	33	33
Sunflower	41	41	0	29	14	14
Potatoes	65	25	5	0	80	0

Note:The percentages in each profitability category do not add up to 100% because of undecided and missing values.

Source: Author's data.

Future plans regarding crop production are related to profitability assessment (Table 7.12). The percentage of respondents who plan to increase crop production during 1996 is substantially higher among those who judge the corresponding crop profitable. The percentage of those who plan to reduce production is substantially higher among those who judge the corresponding crop unprofitable. Yet even among those who judge crop production unprofitable in 1995 there are many who intend to increase production in 1996, possibly because they believe that profitability will

improve when the volume of production is larger. This view is supported to a certain extent by the results presented in Table 7.11 above.

Livestock Production

While all farmers surveyed produce crops, only 35% produce livestock. Among those who do not produce livestock, two-thirds give lack of facilities and shortage of capital as the reasons. Less than 20% cite depressed prices and low profitability as reasons for avoiding livestock production.

Farms with livestock are generally less endowed with land than farms that produce only crops: an average mixed farm producing both crops and livestock has 28 ha, while an average farm that specializes in crops has 38 ha (the difference in size is statistically significant). Also farms with livestock are characterized by larger families: 4.6 people on average compared with 3.8 on crop-specialized farms. It is of course impossible to establish a relation of causality, but the observed finding is consistent with the fact that livestock production requires less land and more labor than production of crops.

Table 7.13. Livestock Numbers in Private Farms

	Percent of farms reporting animals	Number of animals per farm		Range
		Mean	Median	
Cattle	34%	4.5	2	1-40
Cows	32%	2.3	1	1-26
Pigs	35%	7.7	4	1-50
Sheep and goats	4%	5.4	4	2-12
Poultry	28%	60.0	40	3-600
Horses	10%	4.8	2	1-40

Source: Author's data.

The percentage of farmers who keep some animals or birds (40%) is slightly higher than the percentage of those who report livestock production (35%). The small inconsistency is probably due to the fact that some farmers with only one cow or a few chickens, used entirely for household consumption, did not classify themselves as livestock producers. Cows and pigs are the most popular among private farms: one-third of respondents report that they keep animals in each of these categories (Table 7.13). Poultry is reported by slightly less than 30% of farm households, while sheep and goats are kept by very few in the sample. The low frequency of sheep and goats is consistent with the small area of grazing land available to private farmers.

Table 7.14. Livestock Production in Private Farms

	Farms reporting production, %	Output, ton	Profitable, % of producers	Production plans for 1996		
				Increase	Unchanged	Reduce
Beef	14%	1.5	56%	39	28	6
Pork	22%	1.0	68%	54	21	7
Poultry	6%	0.6	57%	43	29	14
Eggs(pcs)	8%	4,000	60%	20	30	10
Milk	20%	9.3	46%	27	31	19

Source: Author's data.

The main livestock products are pork, milk, and beef. The product mix is consistent with the composition of livestock in private farms. Nearly 60% of farmers with livestock report that livestock production is profitable. Profitability assessment by product is presented in Table 7.14, where milk is seen to receive a lower profitability rating than other livestock products. On the whole, farmers intend to increase livestock production or keep it unchanged. Only a small proportion of farmers report that they intend to reduce production. These are mainly farmers who rate livestock production as unprofitable (Table 7.15), but even in this category not more than 25% of respondents intend to reduce production of the main livestock products.

Table 7.15. Future Plans for Livestock Production by Profitability Assessment (percent of producers in each category)

	Profitable			Unprofitable		
	Increase	Unchanged	Reduce	Increase	Unchanged	Reduce
Beef	60	20	0	13	37	13
Pork	68	21	0	25	25	25
Milk	33	25	17	23	38	23

Note: The percentages in each profitability category do not add up to 100% because of undecided and missing values.

Source: Author's data.

Milk yields average 3,300 liters per cow per year during the recent years, with a slight increase over time from 3,200 liters in 1993 to 3,500 liters in 1995. This is higher and better than the Ukrainian national average, which declined from 2,700 liters in 1993 to 2,300 liters in 1995. Egg laying capacity is around 200 eggs per layer per year, which is comparable to the Ukrainian national average in recent years.

Market Services

Commercial supply channels are gaining in importance among private farmers, gradually supplementing or even displacing the traditional state channels. Farmers purchase their inputs and supplies mainly from two sources: the state-controlled district supply depot (60%) and commercial firms (55%). The local collective farm and the farmers' union supply less than 10% of respondents each. Farmers' cooperatives are not active as a supply channel for farmers. Private farmers overwhelmingly support the idea of establishing equipment rental centers (nearly 90% of respondents).

A similar shift toward private trade is observed with marketing of farm products, although here the state marketers still retain a clearly dominant role. Farmers sell their products mainly through state channels (90% of respondents) and in local town markets (over 50% of respondents). About 20% of respondents report that they sell directly to processors, and about 15% sell to commercial firms. Remarkably, nearly 5% of respondents sell through their own sales outlet, such as a shop, a kiosk, or a roadside stall.

For 50% of farmers, the farm is located up to 15 km from the district center and the railway station, and up to 20-25 km from the main sales outlet for farm products. Sale of farm products thus involves time-consuming travel for the farmer in a country where private vehicles are not very common. Alternatively, the farmer must rely on intermediaries to collect produce at the farm gate. There is still no evidence that such intermediaries are rapidly developing in Ukraine, but as noted above, 70% of respondents recognize the need for service cooperatives, which are ideally designed for marketing intermediation in remote farming communities (see the section *Relations with Neighbors and Cooperation*).

Farmers can turn to a growing range of sources for extension services, specifically for consultation on production-related topics. Two-thirds of respondents still use the district department of agriculture as a source of extension information, but 20% communicate directly with scientific organizations and 30% use the services of the farmers' union. The provincial department of agriculture, another state-controlled source, is used by only 10% of respondents for this purpose.

Practically all private farmers report that they are familiar with the latest laws and decrees concerning land reform. When necessary, farmers turn mainly to the district department of agriculture and the farmers' union for legal advice about land laws (one-third of respondents to each of these sources). However, private market services are emerging also in the legal field: lawyers and legal counselors are used as a source of information by over 20% of respondents.

Family Well-Being and Social Services

Farmers are on the whole satisfied with the performance of their farm and their family welfare. Thus, nearly 60% rate the performance of the farm in 1995 satisfactory, and 25% rate it good. Only about 15% rate farm performance as poor. Similarly, family welfare is rated by 65% of respondents as satisfactory or good, and by 30% as poor.

As a clear indication of a generally satisfactory family situation, about 50% of farmers are planning to build a new house or a road to their farm in the immediate future. Nearly 20% are planning to build both a house and a road, and the rest are evenly divided between those who plan to build a new house and those who plan to build a new road.

Access to social services remained largely unchanged for farmer families after the establishment of the private farm (67% of respondents). Only 13% complain that the access to social services became worse, mainly through loss of some benefits traditionally provided by the collective enterprise (such as subsidized prices, free childcare, etc.), while 19% actually report improved access to social services, mainly due to higher family income.

8

Farm Finances

Farm finances were analyzed using accounting data for a sample of large farm enterprises and a sample of family farms. Large farm enterprises routinely prepare annual financial reports, including a balance sheet and a profit and loss statement. These reports are based on Russian accounting standards, and have always served various purposes, such as financial accounting, cost accounting, tax authorities, and official statistical agencies. A private family farm is by law a registered legal entity. Private farmers therefore have a bank account and keep records of their revenues and expenses for tax purposes. Although private farmers do not prepare a full set of financial reports, they fill a standard form with a fairly detailed income statement, which serves a variety of users of information. Farm enterprises provided full financial data for three years, 1993-1995, whereas private farmers provided only income statement data for one year, 1995.

Farm Enterprises

Managers of 118 farm enterprises provided financial results for the years 1993-1995. The information included balance sheet data, such as assets, liabilities, and equity, as well as income statement data, such as sales, costs, and profit. These data made it possible to analyze the changes in the financial situation of farm enterprises over the last three years.

Sales and Profitability

The financial results reveal a picture of deteriorating economic situation between 1993 and 1995. Already a simple count of farm enterprises that report accounting losses shows an overall decline in profitability: in 1993, all farms surveyed were profitable, whereas in 1995 over 20% reported losses (Table 8.1). The profitability of farm enterprises as measured by the ratio of gross profit to sales revenue (profit margin on sales) dropped from an average of 44% in 1993 to 10% in 1995. The low average profitability in 1995 is naturally affected by the high proportion of farms with negative profit margins, but even for farms that report profits the margin in 1995 was 19% compared to 44% in 1993.

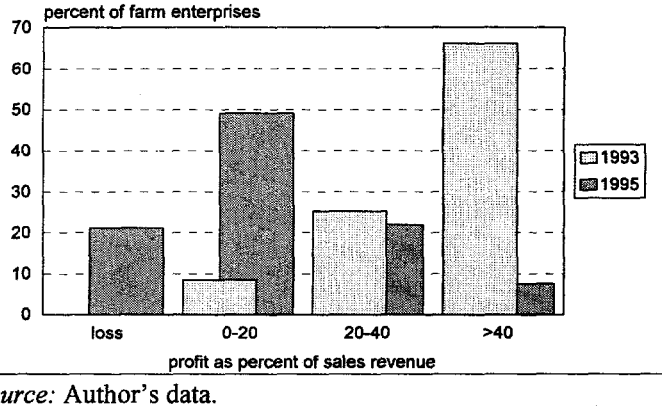
Table 8.1. Profit and loss in farm enterprises: 1993-1995

	1993	1994	1995
Number of farms reporting losses	0	6	25
Number of farms reporting profit	118	112	93
Margin of gross profit on revenue	44%	30%	10%
Share of subsidies in revenue	16%	5%	0%

Source: Author's data.

The entire distribution of profit margins shifted markedly toward lower values between 1993 and 1994 (Fig. 8.1). In 1993, over 40% of farm enterprises surveyed reported profit margins higher than 50% of sales revenue. In 1995, there were less than 2% of farms in this profitability category. At the other extreme, the number of farms with low profitability rates between 0% and 20% of sales increased from 8% of farms surveyed in 1993 to nearly half the sample in 1995. Moreover, the number of farms with negative margins (i.e., losses) reached 21% in 1995, up from zero in 1993.

Fig. 8.1. Distribution of Profit Margins: 1993-1995



Source: Author's data.

One of the reasons for declining profitability is probably the "price scissors" effect noted in Chapter 3 (see Fig. 3.5): profits were eroded by input prices increasing faster than farm gate prices of products. A clear manifestation of the adverse change in terms of trade is provided by the abrupt elimination of a major component of state support to agriculture: the share of price subsidies declined from 11% of farm revenue in 1993 to zero in 1995.

As a result of the "price scissors" effect, production costs increased 28 times between 1993 and 1995, while sales increased 21 times and total revenue (including the shrinking price subsidy component) increased only 18 times (Table 8.2). Yet even these nominal increases translate into a dramatic shrinking of production volume in terms of real, inflation-adjusted values. It is very difficult to estimate the general change in the level of prices between 1993 and 1995 that is relevant for assessing the real growth of sales and revenues. A very conservative estimate suggests that average prices changed by more than 100 times between 1993 and 1995. Based on this estimate of the inflation rate, the real volume of sales in 1995 dropped to less than 20% of the 1993 level. The sales and revenues of the farm enterprises thus shrank in real terms by over 80% between 1993 and 1995 (Table 8.2).

Table 8.2. Change in Operations and Prices: 1993-1995

	Nominal change	Real change
Growth of revenue 1995/1993	x18	-86%
Growth of sales 1995/1993	x21	-84%
Growth of costs 1995/1993	x28	-78%
Growth of total assets 1995/1993	x33	-74%
Consumer price index 6.95/6.93	x128	

Source: Author's data.

Balance Sheet Structure and Financial Ratios

While reported sales and profitability point to unfavorable changes between 1993 and 1995, the structure of the farm balance sheet remains on the whole healthy by standard measures. Long-term debt is negligible, current liabilities (mainly accounts payable, not bank credits) stand at less than 20% of total assets, and equity accounts for over 80% of the balance sheet (Table 8.3).

Table 8.3. Balance Sheet Structure: 1993-1995 (in percent)

Assets	1993	1995	Liabilities and Equity	1993	1995
Fixed assets	54.5	59.8	Equity	80.3	83.6
Inventories	23.8	33.5	Long-term debt	0.2	0.0
Financial current assets	20.1	4.9	Current liabilities	18.7	16.4
Total assets	100.0	100.0	Total liabilities	100.0	100.0

Source: Author's data.

The high proportion of equity is in part a direct result of repeated revaluations of fixed assets, which accordingly account for nearly 60% of all assets in the farm balance sheet. Yet examination of uses and sources of funds between 1993 and 1995 (Table 8.4) shows that a substantial part of equity accumulated through retention of earnings, and together with increase in current liabilities was used to finance the increase in current assets (inventories and accounts receivable).

The total assets reported by farm enterprises increased by a factor of 33 between 1993 and 1995. This is an inevitable outcome of asset revaluation based on inflationary prices changes. Yet the change in assets is much less than the change in the general price index (over 100 times between 1993 and 1995), and in real, inflation-adjusted terms the asset base of farm enterprises shrank by 70% or more between 1993 and 1995 (see Table 8.2).

Table 8.4. Composition of Uses and Sources of Funds Between 1993 and 1995

Uses	Percent	Sources	Percent
Increase in fixed assets	60.0	Increase in equity	83.7
Increase in inventories	33.8	Increase in long-term debt	0.0
Increase in financial current assets	4.3		
Increase in all current assets	38.2	Increase in current liabilities	16.3
Total uses	100.0	Total sources	100.0

Source: Author's data.

The reduction in assets is less than the reduction in sales and revenues, however. This is clear from examination of the ratio of revenues to total assets and the ratio of revenues to current assets, both of which declined substantially between 1993 and 1995 (Table 8.5). This means that farm enterprises not only underwent a reduction in real size and volume of operations, but also suffered from a decrease in efficiency as measured by the value of sales generated by each unit of assets.

Table 8.5. Financial Ratios: 1993-1995

	1993	1995
Revenue to total assets	0.64	0.36
Revenue to current assets	1.58	0.95
Credit years by sales	0.64	0.56

Source: Author's data.

Farm Debt

Despite the generally deteriorating situation of farm enterprises, they do not appear to suffer from a crushing accumulation of debt. The current liabilities are mostly suppliers' credit, not bank credit, and they are more than adequately covered by inventories: the ratio of current liabilities to current assets is 0.4, which implies that the value of current assets (mainly inventories) is more than double the outstanding current liabilities. If inventories are sellable, there is no danger of farms defaulting on their current liabilities.

Another indication of a reasonably low level of debt is provided by the so-called "credit years" measure. This is the ratio of outstanding liabilities to annual sales. It expresses the level of indebtedness by the number of years it would take to repay the outstanding liabilities from current sales (assuming that all sale revenues are used to repay debt). The level of indebtedness of farm enterprises is at around 7 months of sales, which is by no means excessive (see Table 8.5). Moreover, it did not change significantly between 1993 and 1995.

In a normally functioning economy, low debt levels are usually a sign of financial health. The analysis of farm enterprises in Ukraine shows that low debt levels are observed concurrently with drastic curtailment of operations and downsizing of the asset base. It thus could be argued that reduction of the scale of operations is the result of credit constraints. Perhaps infusion of debt in the form of bank credit or credit from other sources would reverse the downward trend and restart real growth. This argument is by no means conclusive, however, as there are also strong indications of declining efficiency of production, which is not necessarily related to credit constraints.

Private Family Farms

Income Statements

This section is based on detailed income statement data for 1995 collected from 114 private farmers in the course of the survey. In round figures, the average total revenue from sale of products and services is 1,000 million krb. per farm and the total production costs are 600 million krb., leaving an accounting profit of 400 million krb. per farm, or a margin of 40% on sales. The only factor that affects revenues in the sample is the size of land holdings: on average, the revenue increases by 23 million krb. for each hectare of arable land. There is no relationship between revenues and the size of the family, the number of family members employed on the farm, and whether or not the farm keeps livestock.

Table 8.6. Structure of Production Costs in a Sample of Private Farms: 1995 (million krb. and percent)

	Million krb.	Percent of total cost
Farm inputs	201.36	34.1
Maintenance and repairs of capital assets	98.84	16.7
Production services from outside providers	51.45	8.7
Hired labor	40.09	6.8
Farm members' labor	39.31	6.7
Social benefits, pension, social security	22.89	3.9
Depreciation	53.84	9.1
Lease payments	4.10	0.7
Obligatory insurance payments	21.26	3.6
Interest payments on bank credit	35.84	6.1
Other expenses	21.47	3.6
Total cost of production	590.46	100.0

Source: Author's data.

Profit of course is very strongly correlated with sales revenue and increases with the increase of land holdings. Large farms thus report a higher profit than small farms, but there is no significant relationship between profit and other farm characteristics. It is impossible to say, for instance, if mixed farms that keep livestock are more or less profitable than farms that specialize in crops. Moreover, neither revenue nor profit increase systematically with the number of employed on the farm, so nothing useful can be said about revenue or profit per farm worker.

The detailed structure of production costs is shown in Table 8.6. The main component is the cost of farm inputs, which account for 34% of total production costs. Capital maintenance and depreciation expenses account for another 26% of production costs. Labor costs (including hired labor and the labor of farm members) are 17% and interest charges are 6% of total production costs.

To complete the picture of farm cash flows, sales revenue should be augmented with other inflows not related to production activities of the farm (e.g., revenue from sale of assets or stocks, dividends or lease payments received, interest income on deposits, etc.), and outflows should be increased to include capital investment in buildings, machines, and livestock (Table 8.7). Other inflows from non-operating income average 50 million krb. per farm, adding 5% to sales revenue. The average capital investment is 180 million krb. per farm, which amounts to a substantial 45% of farm profit. Net surplus after investment is thus about 300 million krb., or 30% of sales revenue.

Table 8.7. Calculation of Net Surplus for Sample Farms (million krb.)

Revenue from sale of products	1020	
Other revenue	50	
Total inflow		1070
Production costs	590	
Capital investment	180	
Total outflows		770
Net surplus		300

Source: Author's data.

The living expenses of the farm household, as in any family business, have to come out of this net surplus. The survey data available for this item are very weak. Only 44 of 114 respondents (less than 40% of the sample) provided information about the amounts withdrawn from net surplus for family expenses. Based on this small subsample, farm families consume about half of the net surplus, and the remaining half is ploughed back into the farm. Including the payment for farm members' labor, an average family thus withdrew around 180 million krb., or $1,000, from the farm.

Unfortunately, these profit and surplus calculations are based on historical accounting, and do not necessarily represent the real earnings in an inflationary environment. All accounting records are kept in values that actually applied at the date of each transaction. If inputs were purchased in

February 1995 for 1 million krb., this is the value that was subsequently included in accounting for 1995 production costs. If products were sold six or seven months later, in September 1995, the accounting profit was calculated by subtracting February values for costs from September values for revenues. While this procedure is perfectly valid in an environment with relatively stable prices, it leads to a dramatic overstatement of accounting profit in an environment with galloping inflation.

The inflation in Ukraine during 1995 approached 200%: the price index changed from 100.0 in December 1994 to 281.7 in December 1995. Based on the month-by-month series of prices changes, the average prices in the last quarter of 1995 (October-December) were about 100% higher than the average prices in the first quarter of 1995 (January-March). If we roughly assume that all farm revenues were earned in the last quarter of 1995, while all production costs were incurred in the first quarter of 1995, then production costs expressed in prices of the last quarter of 1995 are double their accounting value. Adjusting for inflation in 1995 under highly simplifying assumptions, we see that the average farm actually ends with a small loss instead of a 40% profit on sales (Table 8.8).

Table 8.8. Adjustment of Accounting Profit for Inflation in 1995

	Accounting values, million krb.	Average price index in corresponding quarter	Values adjusted to prices in Q4, million krb.
Revenues earned in Q4	1,020	257 (Q4)	1,020
Costs incurred in Q1	590	130 (Q1)	1,166
Profit	430		-146

Note: Based on assumption that all costs are incurred at the average prices of the first quarter (Q1) and all revenues are earned at the average prices of the fourth quarter (Q4) of 1995. Price index based on Dec. 1994=100.
Source: Author's data.

The objective of this exercise is not to demonstrate that Ukrainian private farms lose money: there simply is not enough information for an exact calculation. However, this example should make it perfectly clear that the accounting profit margin of 40% on sales (or the even more impressive margin of 73% on costs, which is the profitability measure traditionally used in Ukraine and the rest of FSU) is a totally imaginary figure that does not take into account the timing differences between costs and revenues. These timing differences (as well as further delays between the date of sale and the collection date when actual cash is received) are crucial for correct estimation of profitability in an inflationary environment.

Credit

Only 20% of respondents report that they carry outstanding debt at the time of the survey. The reported amounts range from 16 million krb. to 2,000 million krb., with median debt of 200 million krb. per farm (about $1,100). Averaged over the entire sample, including farms that do not report any debt, the outstanding loans are less than half this amount: 94 million krb., or about $500 per farm.

Practically all farmers complain about difficulties with access to credit. Half the farmers feel that their access to credit is more restricted than the access of large-scale collective farms, although one-third of respondents feel that the access is about the same for both categories of producers. Fully 90% of respondents report that they cannot borrow all that they need, mainly because the interest rate is too high (45%) and because shortage of credit leads banks to refuse farmers' applications (25%).

Despite these complaints, a total of 59 farmers or 46% of respondents, report receiving credit at least once between January 1992 and January 1996. Among these, 7 farmers borrowed on two occasions and 3 farmers borrowed four or five times. A total of 94 loans is reported. Most farmers did not indicate the source of credit, but among those who did, AIA and Farmers' Support Fund are the main sources. Banks are the source of credit for very few farmers in this period. Purchase of farm machinery or equipment is practically the only purpose for borrowing identified by respondents.

There was practically no borrowing prior to 1992, because the big wave of new private farming began only in 1992. This wave was supported by various credit programs for private farmers, and 70% of the loans reported in the survey were indeed raised in 1992 and 1993. After that the availability of credit to private farmers became restricted, and the number of loans declined dramatically: only 25% of all loans were raised in 1994-1996.

Although credit was used mainly for investment purposes (purchase of machinery and equipment), 70% of the loans were short-term, for up to one year. Less than 25% of the loans were made for terms of 2 to 3 years. A small number of loans raised in 1992 were actually for a term of 5 years, with repayment due in 1997. The term of the loans became progressive shorter over time as credit conditions for farmers deteriorated. The average term declined from about 2 years in 1990-1992 to about 6 months in 1995-1996. The short-term nature of borrowing may explain why only 20% of farmers report that they have outstanding debt at the time of the survey.

Table 8.9. Characteristics of Farm Credit Over Time

Year	Percent of all reported loans	Average term, years	Interest rate, % per annum		
			Average	Median	Upper quartile
1990-1991	4%	2.0	13.0	5	24-40
1992	30%	1.9	26.8	20	40-75
1993	40%	1.2	85.7	70	75-300
1994	15%	0.9	96.5	70	150-250
1995-6	11%	0.4	110.6	83	115-360

Source: Author's data.

The interest rate increased over time from 1990 to 1996. The average interest rate on loans in the sample rose from 13% per annum in 1990-1991 to 111% per annum in 1995-1996 (Table 8.9). The

average interest rate is consistently higher than the median, because a small proportion of the loans each year were raised at relatively high interest rates. Thus, one-fifth of all loans in the sample carried interest rates between 80% and 360% per annum. Despite the almost ten-fold increase over time, the interest rates did not catch up with inflation and borrowers continued to enjoy deeply negative real interest rates, although admittedly on a shrinking volume of credit.

Because of inflation it is very difficult to estimate the average per-farm borrowing over time. For the nine farms that borrowed in 1995-1996 (Table 8.10), the average loan was 960 million krb., or about $6,000. To put this borrowing in context, the average loan can be compared to the average sales revenue or the average profit, which respectively were 2,100 million krb. and 700 million krb. for these farms. On the basis of these figures, it would take less than half a year of sales or less than a year and a half of profits to repay the loan. Since the farms do not report other outstanding loans, the burden of debt is far from crushing.

Table 8.10. Loans Compared to Sales and Profit in 1995

Farm	Loan	Sales	Profit	Loan-to-sales	Loan-to-profit
1	3200	4300	1260	0.74	2.54
2	2270	3000	1000	0.76	2.27
3	825	2200	164	0.38	5.03
4	530	3000	1741	0.18	0.30
5	330	800	271	0.41	1.22
6	300	160	0	1.88	NA
7	150	650	204	0.23	0.74
8	100	2401	968	0.04	0.10

Source: Author's data.

Lack of collateral does not appear to be a problem among farmers. Farmers mortgage their crops in the field (25%) or their machinery and equipment (20%). Land and the house are not offered as collateral. Fully 40% of farms report that they use guarantees of the State Farmers' Support Fund to obtain loans from the banks. As a result, two-thirds of respondents express a positive view of the activities of the State Farmers' Support Fund.

In addition to acting as a guarantor, the State Farmers' Support Fund provided 41 loans to 31 farmers in the sample (24% of respondents) between 1992 and January 1996. Among these, six farmers received multiple loans (from 2 to 4 each) at different times. Between August 1994 and January 1991, nine farmers received an average amount of 400 million krb. per recipient, or between $2,000 and $3,000 depending on the specific timing of the loan. One of these farmers received two loans from the fund, one in August 1994 (186 million krb.) and another one slightly more than a year later, in October 1995 (330 million krb., which adjusted for inflation is much less than the first loan).

Accounts Receivable

About 40% of respondents carry accounts receivable, mostly amounts owed by state-affiliated purchasing organizations for farm products (Table 8.11). The median level of accounts receivable is 185 million krb., or about $1,000, like the median level of debt, but there is no matching whatsoever between the amounts owed to farms by buyers and the outstanding loans that farms carry. Farms with accounts receivable do not offset customer credit by borrowing, and farms that borrow do not use debt to cover accounts receivable.

Table 8.11. Sources of Accounts Receivable

	Percent of respondents reporting receivables in each category	Percent of total amount in accounts receivable
Purchasing organizations	64	66.7
Processors	14	10.1
Trade	10	6.9
Individuals	8	2.2
Other	18	14.1

Source: Author's data.

Comparison of the level of accounts receivable with annual sales for farms reporting receivables indicates that the average collection period is about 4 months. This is extremely long in an inflationary environment, where the rate of inflation runs at about 10% a month. A four-month delay between the time of sale and the time when cash is actually received erodes the accounting revenue by nearly 50%. Thus, 1,000 million krb. of sales recorded in September is worth only 500 million krb. in real terms when it is collected four months later in December. The long collection period has a strong adverse effect on the true economic profitability of Ukrainian farms.

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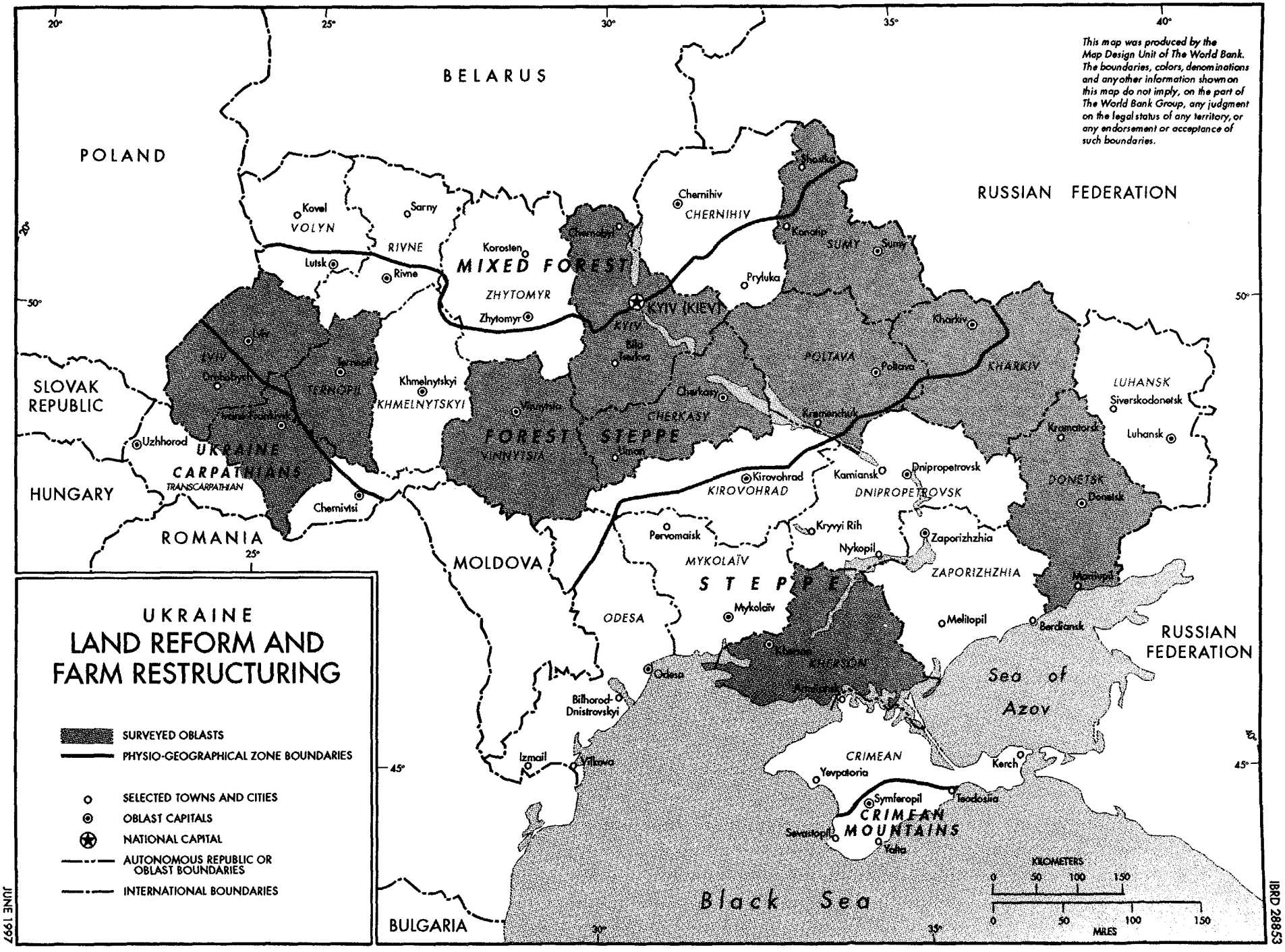
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