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Land Reform and Farm Restructuring in Transition Countries

The Experience of Bulgaria, Moldova, Azerbaijan, and Kazakhstan

Nora Dudwick

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THE WORLD BANK

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Washington, D.C.

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Executive Summary

Over the past decade, the rural sector in nearly all the countries of Central and Eastern Europe (CEE) and the Commonwealth of Independent States (CIS) has undergone a shift from a predominantly collective agriculture to a more individualized agriculture. Over a 10-year period, between 1990 and 2000, more than 145 million hectares of land were transferred to private ownership. This transfer is considerably larger than previous land reforms in other countries, including Mexico (which lasted nearly a century from 1917 to 1992 and transferred about 100 million hectares), Brazil (which lasted 30 years and transferred 11 million hectares), and Japan (which transferred about 2 million hectares), as well as the Republic of Korea and Taiwan (China) (which transferred 0.5 million and 0.2 million hectares) (Deininger 2003). Despite the significance of land reform in those countries, there are few comparative studies of how different policies have resulted in different apparent outcomes in the regions affected.¹

Though the dimensions of land reform are impressive and the changes many, land reform does not yet seem to have lived up to its potential in many CEE and CIS countries.² There are at least two potential long-run benefits from distributive land reform and farm restructuring—both an improvement in farm production efficiency and an improved access to land for poor rural inhabitants. In many countries of the region, the contrast between those widely acknowledged potential benefits of land reform and the rural realities could hardly appear wider. The years since 1990 have seen the largest fall in agricultural production, yields, and rural employment on record in many of those countries. Poverty rates in Central and Eastern Europe and the CIS rose greatly in the 1990s; for most of those countries, poverty headcounts are higher in rural areas. Furthermore, the deterioration and then dissolution of collective and state farms was accompanied by a significant drop in rural public services.

The contrast between the potential and the reality have led many to question to what extent land reform itself has been responsible for such negative developments and why land reform does not appear to have fulfilled its promise of pro-poor growth in rural areas. There is, therefore, a great need for a critical review—a stocktaking—of land reform and farm restructuring to document what is known about the apparent effects of land reform and farm restructuring and to understand why land reform has not lived up to its potential in many of the CEE and CIS countries.

A stocktaking of land reform and farm restructuring must be realistic as to what it can achieve and what it cannot. Obviously, it cannot offer a complete impact analysis of land reform policies, because of the difficulties of establishing causation. A stocktaking can, however, offer a structured and comparative review of some key aspects of land reform and farm restructuring policies. It can document important differences in policies between countries and some of their immediate effects. One such effect covered in this study is the change in crop and livestock yields that resulted from the physical transfer of land from

1. Lerman, Csaki, and Feder (2004) is perhaps the most recent study and has an excellent bibliography.
2. On the promise of land reform, see Deininger (2003, 2005).

corporate to individual farms. A stocktaking is much less reliable, however, in establishing longer-term harmful or beneficial effects of land reform.

This paper presents such a stocktaking of land reform and farm restructuring in four countries (Azerbaijan, Bulgaria, Kazakhstan, and Moldova) that have had particular difficulties with land reform, farm restructuring, farm performance, or rural poverty. It is organized by case studies, each of which is designed to analyze a central conundrum about land reform and farm restructuring in an individual country. Much of the information presented in this review derives from farm and household surveys conducted in each of the four countries during 2003 and 2004. The surveys were designed to provide information that would be comparable across countries. Surveys were supplemented by individual and focus group discussions.

Analysis of land reform and farm restructuring in this way suggests the following series of conclusions with implications for policy. Conclusions of a general nature are followed by country-specific ones.

Land reform does not seem to have been responsible for the fall in agricultural production and productivity observed in the countries in this survey.

The distribution of land in the three CIS countries (Azerbaijan, Kazakhstan, and Moldova) for the most part followed the decline in gross agricultural output (GAO) and deterioration in agricultural yields and labor productivity. In Bulgaria, approximately 30 percent of the decline in production, 50 percent of the deterioration in labor productivity, 17 percent of the decline in crop yields, and the entire decline in animal yields preceded the beginning of land restitution.

The fall in agricultural production before land reform contrasts with the growth in production and productivity (in nearly all the countries surveyed) after land restitution and distribution. For most indicators and for most countries, performance after land reform began was considerably better than before. In Azerbaijan, there was positive growth in every indicator after land reform began in 1996.

These two facts—that agricultural production began to deteriorate before land reform and that production began to grow only after land reform—seem to indicate that land reform is more likely a part of the solution than a part of the problem in those countries. In the absence of land reform, the deterioration in output that characterized the early 1990s might well have continued, because much of the root of the problem was a deteriorating collective farm system. The choice that governments faced in Azerbaijan (in 1996), Kazakhstan (in 1998), and Moldova (in 1998) was not one of rural “developed socialism” of the Brezhnev era versus land distribution and farm restructuring. It was one of a deteriorating agricultural sector under halfway reforms versus land distribution and farm restructuring. Thus, the counterfactual of no land distribution and farm restructuring was continued deterioration. It is not surprising that governments chose reform under such circumstances.

Though land reform may potentially contribute to pro-poor growth by increasing farm efficiency and by distributing land widely, it is only one of many important complementary reforms and cannot be expected to stimulate sustainable pro-poor growth by itself.

This survey has illustrated that the transfer of agricultural production from corporate to individual farms in the three CIS countries contributed to improved sector performance by increasing both crop and livestock yields. This improvement is largely because yields in individual farms were higher than those in corporate farms (with the exception of livestock

yields in Moldova). This change has been the immediate effect of land reform in those countries, but it does not do justice to the potential of land reform in the long run.

Moreover, land reform is not sufficient by itself to ensure better farm performance. In each of the countries considered, a number of complementary policies were identified that shaped the enabling environment for agriculture either positively or negatively. Macroeconomic instability in the early 1990s led to a fall in gross domestic product (GDP) in each of the countries. For most of the 1990s in Azerbaijan, Bulgaria, and Moldova, agricultural producer prices were significantly below export prices, thus providing a production disincentive. Those price differences seem to be a result of government restrictions on trade in agricultural commodities. Falling GDP and low producer prices created a poor environment for growth in agricultural yields or production. The macroeconomic and enabling environment for agriculture in the countries considered here improved by the mid to late 1990s. Inflation rates fell and GDP began to grow. Internal and external agricultural prices grew closer. In Bulgaria, both the macroeconomic and the enabling environment improved after 1997–98. In Moldova, the macroeconomic record improved after 2000, but the enabling environment for agriculture is still poor. In Azerbaijan, the macroeconomic environment improved after 1996, though the enabling environment for agriculture remains poor. In Kazakhstan, the macroeconomic environment improved after 1996, but the enabling environment for agriculture has improved mostly for large farms.

None of the governments of the countries covered in this survey have met the challenge of ensuring a good and truly sustainable enabling environment for agriculture to ensure that farms will be competitive in world markets. Bulgaria has gone the furthest in ensuring an enabling environment for agriculture. However, there is no evidence to indicate that Bulgarian corporate farms have been forced to reduce labor rolls in order to reduce costs of production, as can be observed in the competitive corporate farms of Central Europe. In Azerbaijan and Moldova, producers seem to be taxed by internal and external trade barriers and by ad hoc interventions by the government in agricultural markets. In Kazakhstan, enabling policies seem to favor large farms over small ones.

The lack of a sustainable enabling environment for agriculture in the CIS countries has two sides: a lack of support policies that foster competitive producers and a proliferation of support policies that tend to support large farms without fostering efficiency increases. First, governments of the countries surveyed have failed to take sufficient steps toward restructuring government and public institutions to serve the needs of private agriculture. This failure is evidenced by the lack of an active extension program, of reshaped food safety regulatory policies, of rural farmer early retirement schemes, of rural development programs, and the like. Second, government policies instead aim to support farm enterprises directly by having loose credits or state support; by eliminating the possibility of bankruptcy; and by imposing restrictions on marketing, production, and employment policies. Those policies usually concern corporate and large farms, because they are the most visible and employ the most people, and because their managers often have close links to government. Such farms themselves usually lobby for such support. The policies tend to reinforce old-style large corporate farms with little attention to efficiency increases.

In the Czech Republic, Hungary, and the Slovak Republic, many corporate farms have improved their performance; thus, they perform as well as family farms. This achievement required a sustained policy environment of complementary reforms that are quite challenging for governments, particularly in CIS countries. There are perhaps three complementary reforms that have facilitated better performance of corporate farms in those countries.

First, there seems to have been a true break with soft budget policies so the government does not favor large corporate farms with subsidies, easy credit programs, marketing restrictions, bankruptcy policies, or other special treatment.

Second, in the Czech Republic and the Slovak Republic, expensive rural pensions and unemployment programs support agricultural labor laid off from large corporate farms. Those nonfarm income sources both offer an incentive to leave farming and compensate for earnings when workers are laid off. Thus, labor can be shed from corporate farms in those countries without local authorities and former workers raising havoc.

Third, corporate farms in those countries are interested in reducing costs of production in order to remain competitive because they have no choice. They must compete on European markets with Western European producers who have low costs of production, or they will not survive. Even before the Czech Republic and the Slovak Republic were part of the European Union (EU), both the governments and corporate farm managers knew accession was coming, and the farms adjusted their behavior to fit the circumstances.

Those complementary reforms are difficult to reproduce in the CIS countries and other poor countries, particularly if they are not in line for EU accession. At present, the political economies in the countries would not support such reforms. In the absence of such conditions in Azerbaijan and Kazakhstan, and in view of the fact that governments in those countries pursue policies that do not facilitate the kind of changes that corporate farms require to increase their competitiveness, there are reasons to believe that corporate farms will not perform as well as family farms. In fact, the World Bank survey showed that the total factor productivity of family farms was consistently higher than that of corporate farms in Azerbaijan and Kazakhstan.

The predominant farming technology is also of critical importance to the ability of land reform to foster pro-poor growth.

We know from the experiences of China and Vietnam that land reform by itself can have a major effect on productivity and incomes, in particular in economies with labor-intensive farming and where land is a relatively scarce commodity (Rozelle and Swinnen 2004). Those effects are most likely to emerge if land is given in kind in clearly delineated plots to rural households. Such factors drove the rapid gains in productivity in countries like China and Vietnam and later in Albania. The documented results of land reform lead us to believe that the same factors should apply in Azerbaijan, Moldova, and southern Kazakhstan. In labor-intensive agricultural systems, such as those in Azerbaijan and Moldova, there are important equity benefits to land distribution as well, because employment in agriculture is typically nearly universal and because the egalitarian distribution of land, therefore, creates widespread benefits for the rural, often poor, population.

In less labor-intensive agricultural systems, such as those of Bulgaria and northern Kazakhstan, the incentive gains of individual farming are still important but economies of scale are also key. There are large efficiency costs to the fragmentation of farm holdings, and the lack of access to finance and capital technology of small-scale farming is more costly in such an environment. Hence, privatization of land by itself may not result in strong and widespread rural income growth.

In the absence of mitigating factors, the privatization of farms in less labor-intensive agricultural systems should also have different equity results. The potential gains from mechanization should induce privatized large farms to gain efficiencies by laying off surplus workers, as was the case in Central Europe. The layoff of low-skilled farm workers will cause

extensive rural unemployment and will increase rural poverty, unless there is either a strong social welfare system—as in some countries in Central Europe—or alternative employment. In countries such as the Czech Republic and the Slovak Republic, restitution worked relatively well, because in those countries fewer people were still employed in agriculture and the countries were much richer.

Bulgarian land restitution falls between the labor-intensive, land distribution model of poorer countries and the capital-intensive, high–social security model of Central Europe. In rural areas, restitution allocated land to older households, which were least able to start up large-scale family farms and which had few opportunities for alternative employment. Without significant welfare benefits or alternative employment, the income and poverty problems of the rural population in Bulgaria were particularly bad. Hence, in such an environment, the availability of alternative employment opportunities is crucial. In those conditions, the most dynamic and able migrated to the cities, leaving the countryside disproportionately populated by older and low-skilled people.

In many countries, including Kazakhstan, the Russian Federation, and Ukraine, mitigating factors often prevent privatized large farms from gaining efficiencies by laying off surplus workers. There may be explicit or implicit state (central or local) policies to prevent rural unemployment, rent seeking by large farms that encourages them to maintain large numbers of employees, a sense of community obligation by management to maintain employment, or soft budget constraints—to name a few. Those factors are not absolute. Corporate farms in each of the countries have restructured, improved their performance, shed workers, and incorporated new capital and management, often as a result of being bought out or taken over by outside owners. However, we found no evidence in Kazakhstan of the widespread labor shedding that took place in Central European corporate farms and is a key indicator of substantial farm restructuring.

Northern Kazakhstan, therefore, provides a slightly different model of land reform from that found in Central Europe and Bulgaria. Northern Kazakhstan would have large efficiency costs in fragmented farms, because such farms would encounter significant problems related to access to finance, capital, and marketing channels. The added difficulties in such an environment argue for the importance of larger farms that are vertically coordinated with processors and traders to ensure such access.

In Kazakhstan, scale economies are used to justify and support the maintenance of vertically coordinated corporate farms that are far larger than such considerations would merit, many of which operate at a loss. An average corporate farm in Kazakhstan in 2002 was 12,000 hectares, far larger than the largest farms in the United States (798 hectares). Farms of such size would normally be expected to suffer from extreme diseconomies of scale connected with difficulties of governance. This hypothesis seems to be borne out by the profit performance of such farms. The subsidies available to such farms address the effects of poor performance rather than the causes. Moreover, they tend to create a problem of moral hazard that would not seem to improve performance.

Raising the welfare of rural residents is about raising labor productivity, . . .

It is well known that there is a strong negative correlation between, on the one hand, the portion of the labor force employed in agriculture and, on the other hand, GDP and rural incomes. The “agricultural transition” is about how rural incomes and GDP increase as agricultural employment decreases. Survey data on disposition of land suggest that key factors in raising rural incomes are nonfarm employment opportunities and rural pensions.

Not only do these factors provide additional income to rural farming households, but also they tend to reduce agricultural employment.

Information on changes in income and nonincome measures of well-being of households in Azerbaijan suggests that households assess their well-being by considering more than income. For instance, Azerbaijan had the best sector performance of any of the countries considered. Yields improved, production increased, and rural poverty fell. However, households were quite pessimistic (compared with those in other countries) about changes in their well-being, with only 18 percent of them believing that well-being had improved over the preceding three years. One key to this disparity is the substantial deterioration in rural services in Azerbaijan compared with services in urban areas. Another apparent reason is that fully 66 percent of incomes in Azerbaijani households derived from farming and only 11 percent from wage employment. This portion of income from farming is considerably higher than that found in the other countries. This risk aversion may explain why households prefer to maintain employment in large farms, instead of becoming commercial farmers themselves. It is also why the creation of nonfarm employment in rural areas is so important.

... considering the predominant farming technology, ...

The propensity of households to farm their land also appears to depend on the labor intensity of the farming environment. In labor-intensive agricultural environments, those households that farmed land received during land reform earned higher incomes. Thus, in Azerbaijan and Moldova, most households farmed at least some of the land they received. In less labor-intensive farming environments such as northern Kazakhstan or Bulgaria, however, pensions and nonfarm income seem to play a greater role. In Kazakhstan, where those who did not farm land had large salary income that more than compensated for sales of agricultural products, families that used land actually had lower overall incomes on average. In Bulgaria, pensioners could do nearly as well by collecting their pensions and leasing out their land as by farming the land received from land restitution. We did not control for other factors in making this judgment, so it is not robust. However, it certainly suggests that rural pensions and nonfarm employment opportunities are key factors for agricultural policy in those countries.

... and improving rural services.

This survey of land reform and farm restructuring has shown that the deterioration of the collective farm system also implied a deterioration of rural public services. The renovation of such services depends critically on the establishment of a financially viable local government. No country has solved the problem of public funding for local government. In general, although the experience of both industrial and transition countries is that local rural services cannot be supported by local taxes, no country has been able to develop the political will within government to make rural development and maintenance of rural services a high priority. Certainly, this is an area where donors could assist in setting up working local government institutions. However, the operation of local government is something that cannot be carried out by donors. The need must be felt within the government for development of this matter, something that seems to have yet to occur.

Thus, raising the welfare of rural residents requires assistance from the government in the form of rural development, rural pensions, and social support.

In addition to ensuring an enabling environment for private agriculture, if the government is interested in raising the welfare of rural residents, one of its roles should be to

assist the transition from high-employment, low-wage agriculture to low-employment, high-wage agriculture. This change can be done through rural development, rural pensions, social support for those shed from corporate farms, and other social services. It could also be accomplished by assisting young people in acquiring skills for alternative employment.

Legislation and procedures that appear gender neutral because they do not make a distinction between the rights of men and women may, nevertheless, affect men and women in very different ways, given how traditional gender relations and stereotypes affect access to information, resources, and power. Thus, legislation as well as administrative procedures for establishing rights may need to involve special outreach to women. . . .

Female-headed households in each of the countries surveyed used less land, had lower perceived well-being, and were more likely than male-headed households to believe that their well-being had deteriorated in the preceding three years. Though female-headed households owned about the same amount of land as male-headed households in all countries, they were likelier than male-headed households to rent out land; on average, they used significantly less of the land received from privatization than did male-headed households.

It is not completely clear why such differences exist, but qualitative interviews suggest that although formal legislation and procedures are largely gender neutral in all four countries, women's access to information and legal recourse is substantially lower than men's. Likewise, female-headed households may be less well positioned to use land beyond the household plot for a combination of reasons: less labor power, less access to heavy equipment, and heavier household responsibilities. The deterioration of rural service provision has increased women's responsibilities for child and elder care, thereby increasing the women's domestic workload and making it harder for them to enter the labor market.

. . . Thus, if women are to benefit from growing opportunities both on and off the farm, governments will have to pay attention to providing adequate social services, thereby reducing some of the barriers that women, in particular, experience.

The Bulgarian land reform and farm restructuring present a bit of an enigma. Many positive factors would seem to contribute to the success of land reform there. Compared with indicators in the other three countries being considered, Bulgarian indicators of overall governance as well as of complementary agricultural reform policies are good—and they improved sharply after 1997. The Bulgarian local government reform was the most thorough and most democratic of the four considered in this study. Despite those positive factors, the perceived level of well-being of rural households in Bulgaria was by far the lowest of the four countries surveyed, and a considerably higher portion of households in Bulgaria indicated that their level of well-being had deteriorated over the preceding three years.

Bulgarian rural households seem to perceive their well-being to be significantly worse than in the other countries covered in this survey because land was restituted predominantly to older households that were ill suited to farm it. This perception is partly because older households may not have the entrepreneurial abilities of younger households. But small household farms in Bulgaria, in general, face significant start-up costs, because farming is relatively capital intensive. Moreover, older household heads have another significant source of income, pensions, which may diminish their incentive to farm. For such reasons, households overwhelmingly chose not to farm the land they received. Deterioration of rural services and benefits and the deterioration of the sense of community add to the rather bleak perception of well-being of households in Bulgaria.

Both agricultural and macroeconomic policies in Bulgaria most likely had the effect of exacerbating the difficulties felt by the rural population because those policies made growth in agricultural production and yields very difficult through 1998. Though caution should be used in attributing causality, it is difficult to escape the conclusion that policy failures bore much responsibility for the 40 percent fall in both GDP and agricultural production in Bulgaria after 1989.

In 1998, Moldova achieved a political and institutional breakthrough that appeared to resolve the farm debt problem, that dissolved former collective farms, and that distributed land and nonland assets to farm employees in a fair and transparent manner. It was hoped that resolving those issues would lead to production and efficiency increases that would raise the welfare of rural people. But despite a decisive land reform shaped greatly by aid agencies, Moldovan agriculture has not shown the degree of success that might have been expected. Gross agricultural production fell through 2000, although it turned up in 2001 and 2002 after the completion of reform, along with GDP. Crop and livestock yields have been in a secular decline since 1989 or 1990.

Our explanation of this enigma is that land reform—interpreted as the transfer of production from corporate to individual farms—had few immediate potential yield gains to exploit in Moldova. With so few gains to be made, it is not surprising that there has not been more apparent improvement in productivity. For crops, yields in individual farms were only 21 percent higher than those in corporate farms over the entire period from 1990 to 2002. Although there appear to have been few potential immediate yield gains to be made, it is doubtful that crop yields would have improved without land reform. A naïve estimate of the course of crop yields in the absence of land reform amounts to a continued fall rather than a modest improvement.

A possible underlying reason for the relatively small difference between individual and corporate farm performance is the continued poor enabling environment in Moldova for farming. Continued ad hoc intervention in markets by the government kept—and keeps—yields in both individual and corporate farms low. The improvement in yields and the increase in agricultural production after 2000 came during a period of lessening of interventions. This improvement changed in 2003 after a very damaging drought, with renewed interventions in grain markets accompanied by controls on processing margins for millers.

Eight years after the beginning of agricultural reforms in Azerbaijan, the results are beyond most people's expectations. Agricultural production has grown steadily since 1996, save for one year. Crop yields have also increased steadily, and GAO has recovered to three-quarters of its 1991 level. For a country in which rule of law, control of corruption, and regulatory quality have been low for many years, it all seems difficult to explain.

In fact, Azerbaijan seems to illustrate that overwhelming political will is often more effective in carrying out reform than the on-again, off-again reforms that come with a parliament divided between two opposing factions. Moreover, the single-minded individualization of Azerbaijani agriculture suggests that the Moldova and Bulgarian reforms, which resulted in a mix of corporate and individual farms, were truly formed of political compromise. Land reform in Azerbaijan aimed most decidedly at creating private, owner-operated farms, in contrast to the other three countries where this aim did not have the same weight. As a result, 96 percent of cultivated land was farmed in individual farms in 2002.

Azerbaijan has also had very positive sector performance following land reform and farm restructuring. This change is partly a result of the very large potential for yield improvements in performance from land reform in Azerbaijan, much larger than in Moldova or even

Kazakhstan. However, the yield increases do not seem to have been derived solely from land redistribution. Private and corporate farm yields continued to rise even after land was redistributed.

Despite this very good growth of agriculture, there have been few downstream improvements in processing in Azerbaijan that lead to growth in food processing. Investment and contracting have been limited by the poor business environment and the lack of regulatory policies and contract enforcement (World Bank 2005a).

Good sector performance has also not translated into sizable increases in the subjective well-being of farming households. Though farming households that use the land they received under land reform seem to earn about 20 percent more than households that do not farm the land received, farming households have few other sources of income in Azerbaijan. This lack of income diversification in a country where farming is labor intensive means that the risk-adjusted income stream from farming is probably lower than it is in other countries, where income is more diversified.

The case of Azerbaijan also seems to illustrate the significance of governance in implementing rural reforms. Low levels of governance in Azerbaijan did not seem to prevent the proper implementation of land reform. The World Bank supplied technical guidance needed in the implementation of land reform, backed up by a government with political will. However, rural inhabitants in Azerbaijan have seen the most severe deterioration in rural public services of any of the countries surveyed, and attempts at organizing local government have been more difficult and taken longer in Azerbaijan than in Bulgaria or Moldova. This difficulty seems to indicate that low levels of governance present more problems for day-to-day maintenance of public services than for a one-time land reform, for which expertise can be imported.

By most accounts, Kazakhstan's land reform has excessively emphasized preservation of large farms, many of which have been bought by vertically integrated private grain companies (Esirkepov 2001). Preservation of large farms resulted in maintenance of the extremely uneven allocation of land from Soviet times, while "share privatization" made implicit promises to farm employees about land distribution that were not kept. Kazakhstan officials maintain that the land reform has favored efficiency over equity in an effort to avoid the fragmentation of land ownership observed in other countries. However, the skewed distribution of land, it is argued, carries with it a skewed distribution of income, which will preserve rural poverty. It is, therefore, surprising to find that the perceived well-being of farmers in Kazakhstan greatly exceeded that in other countries studied. And the highest portion of households indicating that well-being had improved in the preceding three years was found in Kazakhstan. Moreover, production of crops and livestock has increased in Kazakhstan nearly every year since 1998, and rural farming households are more satisfied with rural public services than in other countries. Perhaps most surprising of all, 78 percent of agricultural production now originates in individual farms. What have the critics of land reform missed?

As noted in the other countries surveyed, we cannot put in a separate category the contributions of land reform and of farm restructuring as we examine improvements in farm performance in Kazakhstan. Improvements in crop and livestock yields in Kazakhstan since 1993 seem to have been a consequence of a combination of factors, including movement of production to individual farms (which also outperform corporate farms), rising GDP and agricultural prices, and perhaps improvements in weather. Beyond the issue of performance, though, the combination of Kazakhstan land reform and farm restructuring appears to

have achieved some of what land reform has achieved in Moldova and Bulgaria but without the dissolution of corporate farms. Some 78 percent of GAO was produced in individual (family and household) farms in 2002 in Kazakhstan. In Moldova, 71 percent of GAO was produced in individual farms in 2002. Some 90 percent of livestock inventories were in individual farms in Kazakhstan in 2002, compared with 91 percent in Moldova and about 90 percent in Bulgaria. A bit less land was held in individual farms in Kazakhstan in 2002—41 percent—compared with 56 percent in Moldova (2002) and Bulgaria (2000).

At the same time, Kazakhstan's reform has maintained many of the features of the large farm system that made it unprofitable but reduced rural dissatisfaction. Salaries constitute a higher portion of the income of rural farming households in Kazakhstan (46 percent) than in Moldova or Bulgaria. About half of those salaries derive from employment in large farms, the other half from nonfarm sources. Compare that figure with Moldova and Bulgaria, where only 33 and 34 percent of salaries are derived from nonfarm income. Kazakhstan's large farms also maintain some of the rural service and social benefit functions that were formerly covered by collective farms, in contrast to the situation in Moldova and Bulgaria.

The more important underlying reason, however, for positive perceptions of land reform may be Kazakhstan's oil boom, revenues from which helped fund rural services and allowed the government to continue supporting unprofitable large farms. It also raised the overall wage level, so that although land reform deprived people of assets, the people could enter the labor market with relatively higher wages. The combination of two positive factors to ensure that farm households have access to salaries—rural development and maintenance of the large farm system—may provide some explanation of why Kazakhstan's farming households did not rate the severely unequal distribution of land in Kazakhstan or the lack of government decentralization as negatively as expected. Perceived well-being of Kazakhstan's farming households appears to be positively correlated with their portion of salary income. Kazakhstan's farming households note that the level of rural public services has improved since land reform, particularly the supply of gas and electricity in rural areas. This positive factor is in stark contrast to the changes in rural services seen in Azerbaijan, Bulgaria, and Moldova. Both the decline in and the level of rural services in Azerbaijan are the worst of those considered here. Although some rural municipal services have improved in Moldova, they have severely deteriorated in Bulgaria.

There are considerable drawbacks to the course of land reform and farm restructuring in Kazakhstan. Nearly half of corporate farms remain unprofitable, and the government supports corporate farms with subsidies and credits. This support casts doubt on the government's claim that maintaining large corporate farms stresses efficiency over equity. Although the portion of unprofitable corporate farms in Kazakhstan is actually slightly smaller than in Moldova, in neither country has farm restructuring solved the problem of corporate farm profitability. Kazakhstan's corporate farms also seem distorted in ways that neither Bulgaria's nor Moldova's farms are. In contrast to corporate farms in Bulgaria and Moldova, those in northern Kazakhstan are larger than even the largest farms in the United States. A further drawback to the Kazakhstan approach to land reform and farm restructuring has been that the enabling environment for agriculture seems to be supportive of large farms, though quite a bit less supportive of small farms. This fact is emphasized by the World Bank assessment that restructuring of government and public institutions to serve the needs of private agriculture is still lacking in Kazakhstan.

Introduction

Over the past decade, the rural sector in nearly all the countries of Central and Eastern Europe (CEE) and the Commonwealth of Independent States (CIS) has undergone a shift from predominantly collective agriculture to more individualized agriculture. Over a 10-year period, between 1990 and 2000, more than 145 million hectares of land were transferred to private ownership. This transfer is considerably larger than previous land reforms in other countries, including Mexico (which lasted nearly a century, from 1917 to 1992, and transferred about 100 million hectares), Brazil (which lasted 30 years and transferred 11 million hectares), and Japan (which transferred about 2 million hectares), as well as the Republic of Korea and Taiwan (China) (which transferred 0.5 million and 0.2 million hectares) (Deininger 2003). Despite the significance of land reform in these countries, there are few comparative studies of how different policies have resulted in different apparent outcomes in the region.³

Though the dimensions of land reform are impressive and the changes many, land reform does not yet seem to have lived up to its potential in many countries of the region.⁴ There are at least two potential long-run benefits from distributive land reform and farm restructuring—improved efficiency in farm production and improved access to land for poor rural inhabitants. Land reform can contribute to the efficiency of farm production by establishing secure individual property or use rights over land. Secure tenure rights can improve the investment climate in rural areas, improve access to credit for rural residents with land titles, increase demand for land, and widen the scope for local tax revenues.

3. Lerman, Csaki, and Feder (2004), perhaps the most recent study, has an excellent bibliography.

4. On the promise of land reform, see Deininger (2003, 2005).

Those changes should foster the growth of agricultural production. Land reform can increase access to land for poor rural inhabitants if distribution or restitution of land in rural areas is widespread. Access to land provides a social safety net in rural areas, allowing rural residents to ensure their own food security. Furthermore, land distribution can provide rural inhabitants who have entrepreneurial skills with the wherewithal to become commercial farmers. Land reform can, therefore, contribute to poverty alleviation by supporting sustainable, pro-poor growth in rural areas.

In many countries of the region, the contrast between the widely acknowledged potential benefits of land reform and the rural realities could hardly appear sharper. The past decade and a half has seen the largest falls in agricultural production, yields, and rural employment on record in many of the countries of the region. Poverty rates in this part of the world rose greatly in 1990s; in most of those countries, poverty headcounts are higher in rural areas. Furthermore, the deterioration and then the dissolution of collective and state farms were accompanied by a significant drop in rural public services.

The contrast between the potential and the reality in many of the region's countries has led many to question to what extent land reform itself has been responsible for the negative developments and why land reform does not appear to have fulfilled its promise of pro-poor growth in rural areas. There is, therefore, a great need for a critical review—a stocktaking—of land reform and farm restructuring to document what is known about the apparent effects of land reform and farm restructuring and to understand why land reform has not lived up to its potential in many of the region's countries.

A stocktaking of land reform and farm restructuring must be realistic about what it can achieve and what it cannot. It cannot offer a complete impact analysis of land reform policies because of the difficulties of establishing causation. First, it is difficult to isolate the effects of land reform and farm restructuring from the effects of other policy changes and economic trends that took place during this period. Particularly in the early 1990s, inherited distortions of the previous system may have had more to do with observed economic declines and social difficulties than with land reform and farm restructuring, which were introduced rather late in those countries. Second, the length and divisiveness of the political process of introducing land reform and farm restructuring and the implementation of complementary reforms also had critical consequences for the economic and social results of reforms. Generally, the longer and more acrimonious the reforms, the more likely they were to be obstructed by lawmakers, local elites, or farming interests and the more likely the scope of complementary reforms would be limited. Third, agricultural reforms and their effects should not be viewed in isolation from the rest of the economy. Important spillover effects from the rest of the economy have constrained or benefited the performance of agriculture in this period.

A stocktaking of land reform and farm restructuring can, however, offer a structured and comparative review of some key aspects of land reform and farm restructuring policies. It can document important differences in policies between countries and some of their immediate effects. It is much less reliable in establishing longer-term harmful or beneficial effects of land reform. For example, a stocktaking can point out that the distribution of land in Azerbaijan had the immediate effect of increasing the average land holding of rural inhabitants by one hectare and caused the distribution of landholding to become significantly more equal in rural areas. However, it is much more difficult to attribute the subsequent growth of crop production exclusively to land

distribution, because gross domestic product (GDP) in Azerbaijan increased at the same time.

Although a stocktaking recognizes the difficulties of causal arguments about land reform, this recognition does not mean that the stocktaking should not try to evaluate land reforms in each of the countries. In our opinion, the overall purpose of land reform was to improve farm performance, thereby leading to an increase in the well-being of the rural population. We use the growth in crop and livestock yields and in labor productivity as overall indicators of changes in farm performance. We also analyze differences in farm performance in corporate and individual farms by comparing crop and livestock yields in the two sectors over time and by analyzing productivity measures in family and corporate farms at a single point in time while using survey data. Therefore, we analyze corporate farm performance over time by comparing official statistics on profitability. Each of the measures has limitations, and it may be argued that none of the measures is adequate for understanding the extent of farm restructuring. So we have tried to be conservative in our interpretations of the data. For the measurement of the well-being of rural households, we rely on subjective perceptions of household well-being and on changes in well-being gathered from World Bank household surveys in each of the four countries covered in this study.

This paper presents a stocktaking of land reform and farm restructuring in four countries of the European and Central Asian region that have had particular difficulties with land reform, farm restructuring, farm performance, or rural poverty. The evaluation is organized in case studies, each of which is designed to analyze a central conundrum about land reform and farm restructuring in an individual country. In each country, the current apparent outcomes following land reform and farm restructuring are different, though it is not always clear why. We start with two countries, Bulgaria and Moldova, where the apparent outcomes seem to be poor, though the reforms themselves appear to have been good. We then address two other countries, Azerbaijan and Kazakhstan, where agrarian reforms seem to have been carried out poorly or where there seems to have been little capacity to implement them competently, but where agricultural productivity and the subjective well-being of rural residents suggest a relatively positive outcome. Each case study is organized to answer basic questions of land reform and farm restructuring, such as (a) the context of land reform; (b) the design and implementation of land reform and farm restructuring policies; (c) the portion of land and livestock inventories in individual (owner-operated) farms; (d) the disposition of land by farming households; (e) the development of local government capacity to take on the public service functions formerly handled by collective and state farms; (f) the growth in production and productivity of farms; (g) the farming household members' perceptions of their well-being; and (h) the changes in rural public services, social benefits, and community life.

Much of the information presented in this review derives from farm and household surveys conducted in each of the four countries during 2003. The surveys were designed to provide information that would be comparable across countries. The household surveys covered 500 to 700 households in each country, and the farm enterprise surveys covered 60 to 200 family and corporate farms. Surveys were supplemented by individual and focus group discussions. More information about the survey methodology, the terminology, and the limitations of the information derived is contained in Appendix B.

Box 1. Agricultural Producer Terminology

For the purposes of this study, agricultural producers fall into three categories.⁵ The first is that of so-called corporate farms. Those farms are either descendents of state and collective farms or are farms formed after the breakup of such farms. After 1991 in Bulgaria, 1993 in Kazakhstan, 1995 in Azerbaijan, and 1998 in Moldova, corporate farms became a mixture of reformed state and collective farms, joint stock companies, limited liability companies, partnerships, closed or open corporations, and cooperatives.

The second category, individual farms, consists of two subcategories: family farms and household farms. To be considered a family farm, the farm had to be registered. The difference between household and family farms was based solely on registration, rather than on the size of the farm. Household farms were defined as rural households engaged in farming without being formally registered.

5. The definitions used by the statistical offices' definitions apply when referring to official statistics.

Bulgaria

With Good Overall Prospects, Good Agricultural Policy, and Good Governance Indicators, Why Are Bulgarian Rural Households So Badly Off?

The Bulgarian land reform and farm restructuring present a bit of an enigma. There are many positive factors that would seem to contribute to the success of land reform. Compared with the other three countries considered, Bulgarian indicators of overall governance, as well as of complementary agricultural reform policies, are good and improved sharply after 1997. The Bulgarian local government reform was the most thorough and most democratic of the four considered in this study. Despite those positive factors, the perceived level of well-being of rural households in Bulgaria was by far the lowest of the four countries surveyed, and a considerably higher portion of households in Bulgaria indicated that their level of well-being had deteriorated over the past three years. How can this condition be explained?

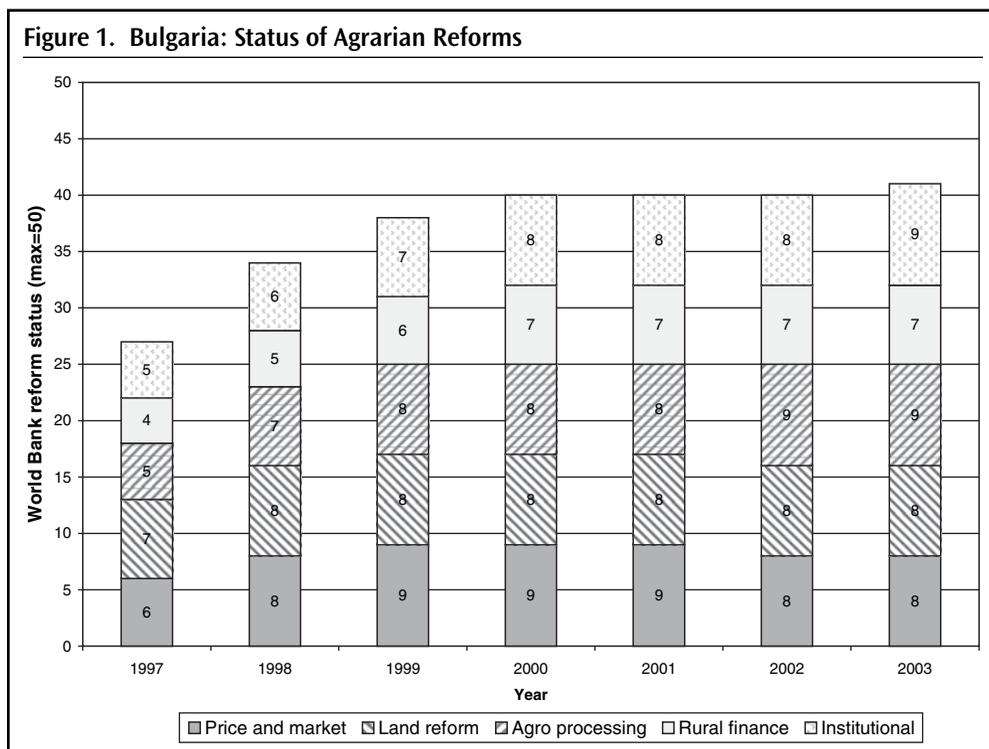
The Context of Land Reform

The policy context for agriculture in Bulgaria can be separated into two distinct periods: before 1998 and after. Agricultural and macroeconomic policies between 1991 and 1998 heavily taxed agriculture after many years of subsidies. Producer support, as measured by the percentage Producer Support Estimate (PSE) was -40 in 1991 and was negative each year until 1998 (OECD 2002). The primary reason for this type of implicit taxation of agriculture was that domestic farm-gate prices for agricultural products were controlled and were significantly below world prices, as indicated by nominal protection coefficients for agricultural producers of less than unity. Taxation of agriculture had a negative effect on purchases of agricultural inputs. Fertilizer consumption per hectare of sown and permanent cropland in Bulgaria fell from a peak of 220 kilograms per hectare

(1988) to just under 120 kilograms per hectare in 1991 and to just over 20 kilograms per hectare in 1995 (Sedik 2004).

The Bulgarian macro environment was quite unstable through 1998, with inflation at more than 50 percent per year in each year starting in 1991. Growth in GDP was also negative, turning positive only in 1998. The Bulgarian government attempted to offset the effects of rising prices for consumers by imposing price controls on food and agricultural commodities, as well as by imposing export duties on cereals. The new government organized after the 1997 parliamentary elections stabilized the currency, liberalized prices and trade, and pushed through many structural reforms in the Bulgarian economy. Starting in 1998, percentage PSEs turned slightly positive (+1 to +3); nominal protection coefficients, which measure the ratio of domestic to world commodity prices (at the farm gate), were approximately 1, indicating policy neutrality.

The effect of these pre-1998 agricultural and macroeconomic policies was to depress agricultural production. It is difficult to imagine growth in agricultural production when domestically grown commodities could be sold for between 60 and 75 percent of world prices and when GDP was continually falling. Both crop and livestock production in Bulgaria began to fall before the beginning of land restitution along with GDP and continued to do so until 1999, with the exceptions of 1994 and 1995 (see figure 1).



Note: The indexes measure the status of agrarian reforms in five key areas, with each index ranging from 1 (centrally planned economy) to 10 (completed market reforms). For a detailed explanation of ratings, see Csaki and Zuschlag (2004).

Source: Csaki, C. and H. Kray (2005).

The change in agrarian reform policies of 1998 can be seen in the indexes compiled by the World Bank on the status of agrarian reforms. Those indexes measure the status of agrarian reforms in the Bulgarian economy in five key areas, with each index ranging from 1 (centrally planned economy) to 10 (market economy) (see figure 1). Between 1997 and 1999 the sum of the reform indexes jumped by 10 points, with the main improvements in the areas other than land reform.

Agricultural Production and the Design and Implementation of Land Reform

It would be difficult to claim that the design of the land reform in Bulgaria or its implementation was seriously flawed compared with that of other countries. In Bulgaria, land was to be restituted to owners of land, as defined by the 1946 Agrarian Reform Law, or to their heirs. Though Bulgaria is the only country considered in this study that chose restitution as the method of privatizing socialized land, most of the Central and East Europe (CEE) countries chose the same method. In contrast to some of the Central European countries, though, land reform in Bulgaria was very controversial, and its cause was advanced only through considerable political struggle between the Bulgarian Socialist Party (BSP) and the Union of Democratic Forces (UDF). The original law was amended more than 25 times between 1991 and 2000, causing considerable confusion in the process.⁶

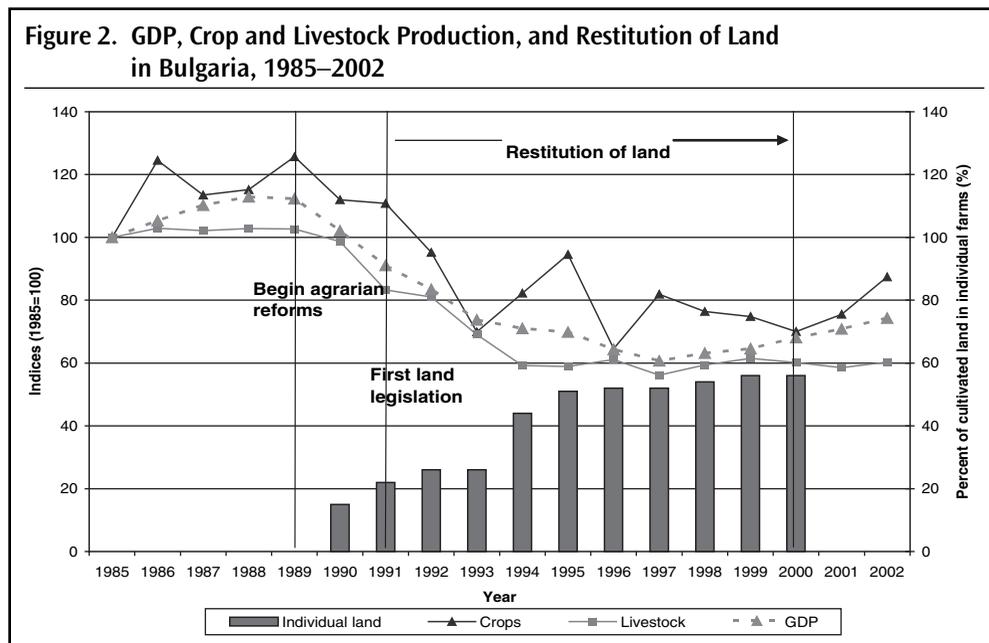
In countries such as the Czech Republic and the Slovak Republic, restitution worked relatively well. Strong land rights were created through restitution, soft budget constraints were eliminated, and farms were forced to restructure, including by shedding labor. Those farms gained labor efficiency, and laid-off workers were protected by relatively generous pension and social security systems or were able to find employment in other sectors, including an emerging rural service sector. Those countries differ from Bulgaria in that fewer people are employed in agriculture and the GDP per capita is much higher.

Only after April 1997, when the UDF achieved a majority in Parliament, was the government able to stabilize the economy and to strengthen and further structural reforms, including those in agriculture. However, most restitution took place during the period of political struggle, which shaped the nature of the entire reform. By 1998, almost 80 percent of land titles had been allocated, and the process was largely completed by 1999. On general matters of institutional governance, Bulgaria scores well—the best of the four countries considered here, though not quite as well as the most advanced country of the new European Union (EU) East European states, which is the Czech Republic (see Appendix A, Table A.1). But government effectiveness in Bulgaria was low until 1998 because of the political struggle between the socialists and UDF through that year.

The effect of political struggles in Bulgaria can be seen in figure 2. The jump in the portion of land in individual farms between 1993 and 1994 was achieved as a result of policy changes by the UDF. After the Bulgarian Communist Party gained a majority in December 1994, the portion of land in individual farms stagnated. After April 1997, with parliamentary control back in the hands of the UDF, it began to rise again.

Both crop and livestock production in Bulgaria began to fall before the beginning of land restitution, along with GDP (see figure 2). Though livestock production seems to have

6. See Kopeva, Noev, and Evtimov (2002) and Swinnen (1997) for details.



Source: Statistical yearbooks.

begun a slight recovery in 1998, following the recovery in GDP, crop production fell overall through 2000.

Local Government Reforms and Public Service Funding

Bulgaria, in part motivated by the requirements of EU accession, has moved the furthest of the countries considered here toward decentralizing decision making within the government. Bulgaria's 263 municipalities are governed by municipal councils whose members are directly elected for four-year terms; executive power is vested in an elected mayor. Municipalities are to provide a range of social and municipal services, many of which had previously been supported by state farm enterprises. Those services (including education, health care, municipal sanitation, social assistance, public works, and utilities) are to be financed through a complex system of subsidies and tax sharing.

Municipal government in Bulgaria is chronically short of resources with which to fund local public services. Moreover, the gap between mandated services and available resources continues to undercut the autonomy of local governments and their ability to respond to constituents' service needs. In the absence of strong independent institutions and adequate service, personal relationships, contacts, and initiatives often direct service delivery (Shahriari 2003).

Disposition of Land Received

In Bulgaria, as in many other CEE countries, restitution resulted in a significant portion of land being leased out to new cooperatives or joint stock companies. Under the restitution

law, recipients were allowed to use the land themselves or to lease or sell their land to newly formed corporate farms (primarily cooperatives, but also joint stock companies) or to private persons. In 2000, only 56 percent of cultivated land was in individual (owner-operated) farms (see figure 2). Rural households that received restituted land in Bulgaria put it to different uses than in the other (Commonwealth of Independent States, or CIS) countries surveyed. Comparatively few households (38 percent) used it themselves (see Appendix A, Table A.3). Most preferred to lease it out, either to large farms or to cooperatives. More than 40 percent of rural households in Bulgaria interviewed in the World Bank survey leased out land. A similar portion of respondent households leased out land in Moldova, a figure far higher than in Azerbaijan or Kazakhstan (see Appendix A, Table A.3).

Restitution according to the 1946 Agrarian Reform Law meant that land was granted predominantly to the older population. In rural areas, where nearly 33 percent of the population is of retirement age, land ownership became concentrated in older people, with important implications for entrepreneurship (see Appendix A, Table A.2). Only 5 percent of the heads of households receiving land in the Bulgarian household survey sample were younger than 40 years old. Restitution also meant that the land distribution in Bulgaria was relatively limited when compared with CIS countries, which distributed land much more widely. Only 60 percent of rural households interviewed in the World Bank survey actually received land (see Appendix A, Table A.3). In Azerbaijan and Moldova, nearly all respondent households received land.

Restitution also resulted in considerable abandonment of land—a 2003 survey of three regions in Bulgaria found that almost 40 percent of households had abandoned at least one parcel, averaging one hectare (Noev, Swinnen, and Vranken 2003). However, one important reason for abandoning the parcels turned out to be poor land quality. Another reason was the aged rural population, with no interest in cultivating or renting land, combined with poorly defined property rights that have retarded development of an efficient land market and that surely reduced overall sector performance.

Unlike in Moldova and Azerbaijan, the involvement in Bulgaria of rural households in farming other than for subsistence is rather limited. Of the entire sample of rural households surveyed, only 23 percent both received land and used it themselves. The reluctance of households in Bulgaria to farm restituted land may make sense. It is true that households that received land through restitution had higher monthly per capita expenditures than those that did not receive land. However, the difference between households that used land received and those that did not is small (see Table 1). Households that used land reported higher well-being and were more likely to report that their well-being had improved over the previous three years. However, Table 1 seems to indicate that a pensioner family might do nearly as well by collecting a pension and leasing out land, rather than farming it. Certainly, the profile in Table 1 is not conclusive, because it does not isolate the effect of land use from other factors, as could be done in regression analysis. However, it is not clear which way causality runs, and the functional form of such a regression would be difficult to define with certainty.

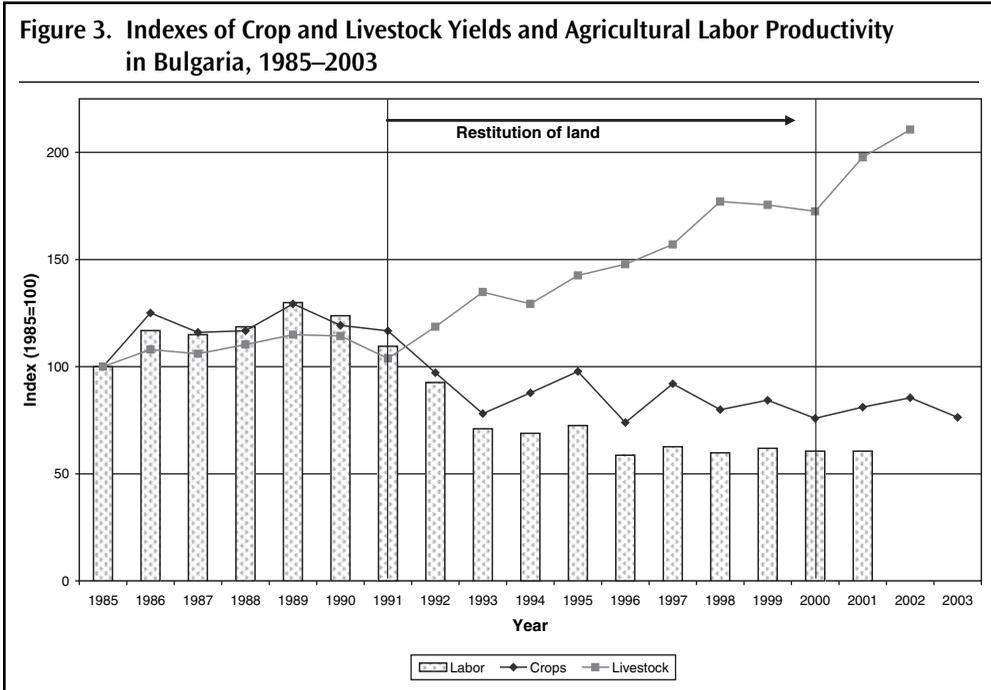
Though relatively few rural households received restituted land and fewer still chose to farm the land they received, semisubsistence farming is widespread in rural Bulgaria, using predominantly nonrestituted land. A World Bank survey of rural development needs found that 69 percent of rural households engage in farming, typically cultivating less than 0.5 hectares with household labor. Few households have evolved into commercial farms in the past few years (World Bank 2004a).

	Households that received land through privatization			Households that did not receive land through privatization
	Using land received through privatization	Not using land received through privatization		
Monthly per capita expenditure (lev)	120.6	114.1		90.5
Perceived well-being (% of households rating today's well-being as high or very high)	10.4	5.9		3.3
Percent of households indicating that well-being improved in preceding three years	17.8	8.1	***	7.1
Percent in total income				
Total salary from wage employment (cash and in kind)	31.3	32.1		37.1
Value of farm production consumed in the family	19.2	7.9	***	4.0
Sales of farm products	11.5	2.6	***	3.3
Rent or lease payments received (for land and assets)	1.0	7.3	***	0.5
Total revenue from other private nonfarm business	2.5	2.5		2.8
Pensions	26.1	41.1	***	26.9
Social assistance	2.4	2.9		19.0
Gifts and remittances	1.3	2.0		3.0
Other	4.0	1.6	***	3.1

Note: Asterisks mark significant differences between households that use land they received through privatization and households that do not use the land that they received through privatization. ***, **, * differences are significant at the 1, 5, and 10 percent significance level. *Source:* Data comes from the survey undertaken for this study, henceforth referred to as the World Bank survey of farms (2003).

Economic Performance of Farms

The economic performance of farms in Bulgaria differs greatly depending on whether one considers the crop or the livestock sector (see figure 3). Livestock yields more than doubled from 1991 to 2002, while crop yields and labor productivity fell quite rapidly from 1989 to 1993. Since 1993, crop and labor productivity have been relatively steady. The large increase in livestock yields appears to be related to the movement of livestock from corporate to



Source: Statistical yearbooks.

owner-operated farms. By the end of 2001, 88 percent of cattle, 90 percent of cows, 95 percent of sheep, and 100 percent of goats were in farms owned and run by individuals (Ministry of Agriculture and Forestry of Bulgaria 2002).

One must be careful about using agricultural labor (and labor productivity) information, because estimates of agricultural labor are notoriously difficult to make and are subject to changes in definition. Nonetheless, it is notable that Bulgaria has not seen the steep decreases in agricultural labor seen in countries such as Estonia, the Czech Republic, Hungary, and the Slovak Republic (see Appendix A, Table A.4). This finding suggests that labor shedding in corporate farms, normally a necessary part of farm restructuring and vital to their competitiveness, has yet to occur in Bulgaria.

Information on the individual and corporate farming sectors in Bulgaria is very difficult to come by. The Ministry of Agriculture began Farm Structure Surveys only in 2000/2001. A comparison between corporate and family farms based on the World Bank survey in Bulgaria shows that family farms tend to perform better on a per hectare basis, with higher output and profit per hectare (see Table 2). Corporate farms have higher labor productivity. Overall total factor productivity (the ratio of the value of output to total costs) was higher on corporate farms.

It is difficult to derive conclusions from these two figures, because it is not clear whether the productivity differences result from differences in scale or from differences in organizational form. In the World Bank survey, family farms were concentrated in the smaller size categories, while corporate farms were predominantly large. In most countries surveyed, including Bulgaria, labor productivity (measured as output per average work unit)

Box 2. Crop and Livestock Yield Indexes

To track crop yield changes in the countries of this study, we use an index of crop yields showing current-year (2002) weights derived from the distribution of cultivated area among crops. Current-year weights are used because they probably better reflect the distribution of land area under market conditions. To make the indexes more comparable, we chose a subset of crops raised in each country for the index. The crops used in the index covered 83, 85, and 95 percent of the area of sown and permanent crops in Kazakhstan, Azerbaijan, and Moldova in 2002. The index leaves out various types of animal feed crops.

To track livestock yield changes, we use an indicator of the efficiency of meat production. For this purpose, an index of meat production per inventory animal (using end-of-year stock figures) was constructed. This index can be thought of a rough indicator of gross return to the grain cost of maintaining capital stock. The numerator is a measure of meat production in kilograms, while the denominator is a measure of animal inventories in cow terms, weighted according to the relative grain consumption of each animal. For instance, if cows and horses receive a weight of 1.0, the weight for cattle is 0.6, for sheep and goats 0.1, and for poultry 0.02. This system is not a perfect indicator of efficiency by any means, but it has the advantage that it can be calculated for each of the CIS countries.

The drawbacks of this indicator are evident during periods of large declines in the inventories of corporate farms, indicating sizable transfers to individual farms. During those periods, meat production by corporate farms continues its slow decline, but inventories decline rapidly. Thus, it appears that corporate farms' meat production efficiency jumps.⁷ This increase is because livestock inventories in the denominator, when measured at the end of the year, reflect the transfer, in contrast to meat output, which does not yet reflect the transfer.

Table 2. Productivity Measures for Farms Surveyed in Bulgaria, by Type

Farm type	N	Total factor productivity (Output/ total costs)	Labor productivity		Land productivity	
			Output	Profit	Output	Profit
			(1,000 LCU)/ AWU	(1,000 LCU)/ AWU	(1,000 LCU)/ ha	(1,000 LCU)/ ha
All farms	57	4.9	24.0	10.0	1.7	0.70
Family farms	23	3.1	9.1	4.5	3.4	1.26
Corporate farms	34	6.2	34.3	15.1	0.5	0.19

Note: AWU = average work units; LCU = local currency units. Indicators that are statistically different at the 20 percent or greater level are in bold italics.

Source: World Bank survey of farms (2003).

varied positively with the size of farm, while output per hectare varied negatively with farm size (see Appendix A, Table A.5). Small farms, whether corporate or family, have lower labor productivity but they use land more efficiently. This finding indicates the familiar labor–land tradeoff as farm size increases, regardless of organizational form.

7. Another difference between land and livestock distribution in the CIS countries is that animals could be exported. In the early 1990s, corporate farms appear to have exported large quantities of livestock. The evidence for this exportation is to be found in the large reductions in livestock inventories that were not transferred to individual farms. If this reduction in inventories signified distress slaughter, one would expect a temporary increase in meat production. However, there is no evidence of increased meat production in those periods. This phenomenon was most pronounced in Kazakhstan, where corporate farms appear to have exported the equivalent of 2 million cows per year from 1994 to 1996.

There seem to be productivity advantages to larger (200 to 500 hectare) farms in Bulgaria (see Appendix A, Table A.5). Though the sample size is quite small, farms in this size category and larger have higher total factor productivity, output per hectare, and output per labor unit than smaller farms. One such advantage may be the less labor-intensive nature of farming in Bulgaria. The prereform ratios of agricultural labor per hectare in Bulgaria and Kazakhstan were 0.13 and 0.008, while those in Azerbaijan and Moldova, where farming is more labor intensive, were 0.20 and 0.27 (Macours and Swinnen 2002). Less labor-intensive agriculture means that there may be significant start-up costs for smaller farmers, with the result that larger farms may have higher productivity. Such capital-intensive farming is typical in areas where field crops such as wheat and oilseeds are grown widely.

Well-being of Rural Households

Of the four countries surveyed, Bulgarian households ranked their well-being lowest by far (see Appendix A, Table A.6). Nearly 70 percent rated their current level of well-being as low, while in the three other countries surveyed, only 20–35 percent of households were so pessimistic. Only 10 percent of Bulgarian households believed that their well-being had improved over the preceding three years, compared with 18–36 percent of households in other countries. Bulgarian household pessimism extended to perceptions of the enabling environment as well. Bulgarian households rated the enabling environment for farming more difficult than did households in other countries. The differences between ratings appear to be most pronounced for marketing of agricultural produce, access to veterinary services, access to pasture land, and access to loans for investments.

Box 3. Perceptions of Intermediaries by Small and Large Farmers in Bulgaria

Small Bulgarian farmers felt that middlemen (intermediaries) were forcing small producers out of the market by pressuring them not to sell directly to processors, even using physical violence for this purpose. Larger farmers, however, found intermediaries useful for providing otherwise scarce pricing information and for negotiating large contracts with the processors, thereby providing the farmers with some security. Small farmers in Dobrich alleged that the local state-owned enterprise paid lev 0.16 per kilogram for wheat the previous year, but subcontracted two companies to buy it directly from the farmers. The companies offered the farmers only lev 0.10 per kilogram. Farmers who tried to bypass middlemen by bringing their trucks directly to the storage facilities to sell their grain were beaten. Although one farmer hired bodyguards and passed the barricades, the state enterprise refused to purchase his wheat.

Source: Focus group discussions.

It is not clear whether Bulgarians' pessimism about their lot is the result or cause of their ratings of their enabling environment. Both across countries and within countries, there is a strong correlation between perceptions of the enabling environment for farming and the perceived well-being of rural households. Households that perceive their well-being as high rank their enabling environment for farming consistently better than households that perceive their well-being as low. Households with a lower perceived well-being have lower incomes and consider the enabling environment for farming worse.

Comparatively low household perceptions of well-being in Bulgaria may reflect the significantly more capital-intensive nature of farming in Bulgaria compared with that in Moldova and Azerbaijan. Whereas in countries (or regions) where agriculture is more labor intensive and the start-up costs of farming are comparatively small, in more capital-intensive farming countries—such as Bulgaria or (northern) Kazakhstan—small (and new) farmers are at a significant comparative disadvantage. Larger start-up costs imply that household farms, which tend to be small, are at a disadvantage compared with larger-scale (family or corporate) farms. Larger-scale farms may have better access to farm machinery, finance, and other inputs associated with scale.

This hypothesis may be supported by the comparatively more pessimistic views of the enabling environment in Bulgarian households relative to Bulgarian enterprises (family and corporate farms) in Bulgaria, when compared with other countries surveyed (see Appendix A, Table A.7). Enterprises in all four countries rated their enabling environment better than did households. However, whereas the enabling environment was rated as only 7 percent better by enterprises in Moldova and Kazakhstan and 40 percent better in Azerbaijan, enterprises in Bulgaria rated their enabling environment 50 percent better. Those differences were even more pronounced in ratings of access to loans for farm investments and access to agricultural equipment.

Another explanation for the greater pessimism of Bulgarian households may lie in the greater age of household heads. Pensioners may find more capital-intensive farming more difficult because of the greater start-up costs. They also may have less incentive to farm land because they have another income source. The structure of incomes of surveyed households in Bulgaria compared with that in the other countries in the survey illustrates the importance of pensions there (see Appendix A, Table A.8). Whereas pensions accounted for only 14 to 23 percent of household income in the other countries, they accounted for 32 percent of household income in Bulgaria and were the second largest income source.

A comparison between households that reported high overall well-being and those that reported low overall well-being points to important differences (see Appendix A, Table A.9). Bulgarian households that reported higher overall well-being tended to have younger and better-educated household heads. Such households were also overwhelmingly Bulgarian, rather than from an ethnic minority. Households reporting high well-being also had a (statistically) significantly higher portion of male-headed households. Heads of households who reported low well-being were older, less educated, and more likely to not be of Bulgarian ethnicity (primarily Roma or Turk).

Rural Services, Social Benefits, and Community Life

The inability of local governments to provide for rural public services and social benefits had a significant effect on how Bulgarian households rated the provision of rural services (electricity, drinking water, and telephone access) and social benefits. Bulgarian households believe that the level of those services (except gas) has deteriorated since land restitution, (see Appendix A, Table A.12. However, the absolute level of satisfaction with rural services (except for gas) is generally higher than in other countries. Social benefits—such as compensation for price increases, subsidies for education, and utilities and public transportation—have all deteriorated in the opinion of rural households (see Appendix A, Table A.13).

Medical services have deteriorated greatly, while pensions have significantly increased (though they are still low compared with average salaries) and heating fuel subsidies have improved. Of course, more limited access to social benefits is to be expected, because social benefits are usually subsidies and because part of the purpose of reform was to limit social subsidies that are fiscally unsustainable.

Bulgarian households believe that community life has significantly deteriorated since land restitution (see Appendix A, Table A.14), leading to diminished trust and social cohesion. In the countries studied, Bulgarian respondents evinced the greatest mistrust toward other members of their community (particularly those from the Roma minority) and the least inclination to place trust in traditional leaders.

In the opinion of households, alcohol use among adults and youth and the levels of crime and domestic abuse have all increased. Compared with male-headed households, female-headed households were likelier to feel their well-being had deteriorated in the previous three years (see Appendix A, Figure A.1). At the same time, informal interviews found a greater degree of gender equality within the household. This opinion may be attributed partly to the high degree of cooperation required for survival in conditions of serious poverty and partly to the increasing importance of family relations as social relations break down. Box 4 provides typical comments on the level of depression, distrust, and sense of abandonment.

Box 4. Perceptions about Community Relationships

“We get together for coffee and a cigarette, but all we ever talk about are our money problems so it is like an epidemic depression. People trust each other less than before. We trust our own family, and we all stay to ourselves.”

“When I came here with my husband 40 years ago, there was a very active social life . . . everyone was singing and dancing . . . doing traditional activities. Now it is all gone. The elders are too old and the youth are leaving. There are streets in town where three or four houses in a row are empty. There are no people.”

“We used to trust everyone . . . neighbors would lend each other money and equipment and trust people to give it back . . . not today. Trust has been lost.”

Source: Focus group discussions and household interviews.

Heavy migration from rural areas is both a result and perhaps a cause of such feelings. Young people and those with higher education, in particular, leave the countryside more often than others. In contrast to countries from which people leave to earn money but plan to return (as in Moldova), Bulgarians consistently stated their intention to leave permanently with their families. A municipal economic development officer noted that 90 percent of students who left to study did not return.

Conclusions

Bulgarian rural households seem to perceive their well-being to be significantly worse than in the other countries covered in this survey because land was restituted predominantly to

older households who were ill-suited to farm it. This perception is partly because older households may not have the entrepreneurial abilities of younger households. But small household farms in Bulgaria, in general, face significant start-up costs because farming is relatively capital intensive. Moreover, older household heads have pensions—another significant source of income that may diminish their incentive to farm. For those reasons, households overwhelmingly chose not to farm the land they received. The deterioration of rural services and benefits and the deterioration of the sense of community add to the rather bleak perception of well-being of households in Bulgaria.

By making growth in agricultural production and yields very difficult through 1998, both agricultural and macroeconomic policies in Bulgaria most likely had the effect of exacerbating the difficulties felt by the rural population. Though caution should be used in attributing causality, it is difficult to escape the conclusion that policy failures bore much responsibility for the 40 percent fall in both GDP and agricultural production in Bulgaria after 1989.

The peculiarities of land restitution in Bulgaria resulted in a structure of land use in which 44 percent of land is cultivated by reformed cooperatives and joint stock companies. Despite the fact that effective land reforms and farm restructuring started early in Bulgaria, those farms do not seem to have undergone the labor shedding found in other CEE countries, which is so vital for competitiveness. Labor shedding in other CEE countries allowed farms to reduce labor costs and to raise expenditures on other inputs, thus increasing crop yields. This change may explain part of the persistent stagnation in crop yields in Bulgaria, while livestock yields have risen dramatically (nearly exclusively on individual farms).

There are certainly advantages to the structure of land use in Bulgaria. Compared with Romania and Albania, where land ownership and use are highly fragmented, leasing in Bulgaria allows land to be cultivated by larger farms that are better suited to the capital-intensive farming conditions. Landowners, who are predominantly older (at least in rural areas), receive lease payments, though the amounts are small. Pensions are a critical factor in encouraging the redistribution of land use to larger-scale farms. At the same time, disused, fragmented plots constitute an impediment to a more vibrant land rental market.

Although farming conditions in Bulgaria seem to favor larger-scale farms, there is little evidence by which to evaluate the performance of Bulgarian corporate farms compared with that of owner-operated farms of similar scale. Though the total factor productivity of Bulgarian corporate farms in the World Bank survey was significantly higher than that of family farms, it is unclear whether this difference is due to scale effects, organizational form, or possible underreporting. Moreover, information on the individual (owner-operated) and corporate farm sectors in Bulgaria is very difficult to come by.

Moldova

With a Well-designed Land Reform Shaped Greatly by Donors, Why Have Farms in Moldova Not Performed Better?

In 1998, Moldova achieved a political and institutional breakthrough that appeared to resolve the farm debt problem, the dissolved former collective farms, and the distributed land and nonland assets to farm employees in a fair and transparent manner. It was hoped that resolving such issues would lead to production and efficiency increases that would raise the welfare of rural people. Initial changes were positive: gross agricultural production had fallen through 2000, but the trend changed in 2001 and 2002, along with GDP. If not for the 2003 drought, GDP would have improved further. Yet despite implementing a decisive land reform shaped greatly by aid agencies, why have positive effects on Moldovan agriculture been more limited than expected?

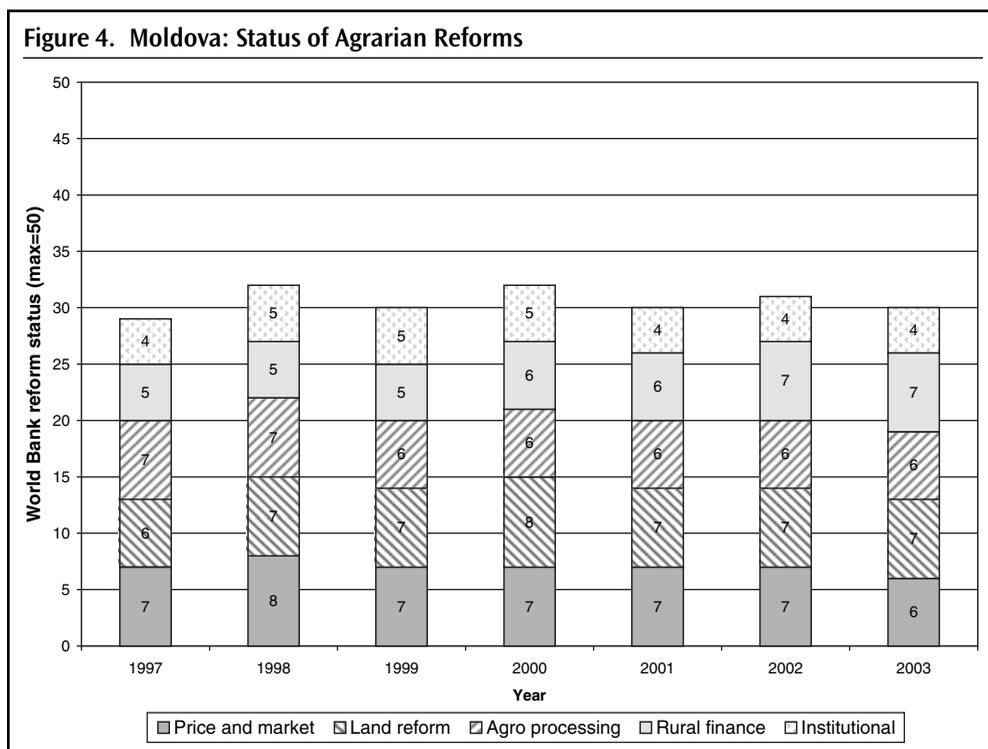
The Context of Land Reform

The environment for agriculture in Moldova was and is made difficult by two key policy factors. First, the macroeconomic environment was quite poor throughout the 1990s, with inflation from 300 to 1,200 percent per year from 1992 to 1994. Though inflation was brought down to 30 percent per year in 1995, gross domestic product (GDP) fell every year from 1992 to 1999, except for 1997. This decline made the fall in GDP in Moldova one of the longest and deepest of the Commonwealth of Independent States (CIS) countries. Between 1985 and 1999, GDP fell nearly 70 percent; it began growing only in 2000.

Second, the government enabling environment for agriculture producers was and is extraordinarily poor. The World Bank indexes of reform status indicate that the government of Moldova has not taken steps toward restructuring government and public institutions to serve the needs of private agriculture (see Figure 4). On the contrary, the government regularly intervenes in domestic and export markets for agricultural commodities and seems intent on establishing new regulatory bodies to run the sector. Bread and flour prices

were liberalized in 1996, but many nontariff domestic and foreign controls on trade in agricultural products remain. The government maintains state procurement for grain and, in bad harvest years (such as 2003), intervenes ad hoc in commodity markets. The government compounded those difficult conditions for agricultural production by maintaining farm share privatization for a long period, thus allowing for the wholesale stripping of assets from privatized farms.

The government continues to detract from the enabling environment by proposing the renewed formation of production cooperatives and a new land code, raising doubts about the security of landowners' property rights. The generally poor enabling environment in agriculture is indicated by the relatively low scores on reform status, when compared with Bulgaria (30 versus 40 in 2003). The poor enabling environment is quite significant for GDP, because agricultural production accounted for between 40 and 50 percent of GDP in this period.



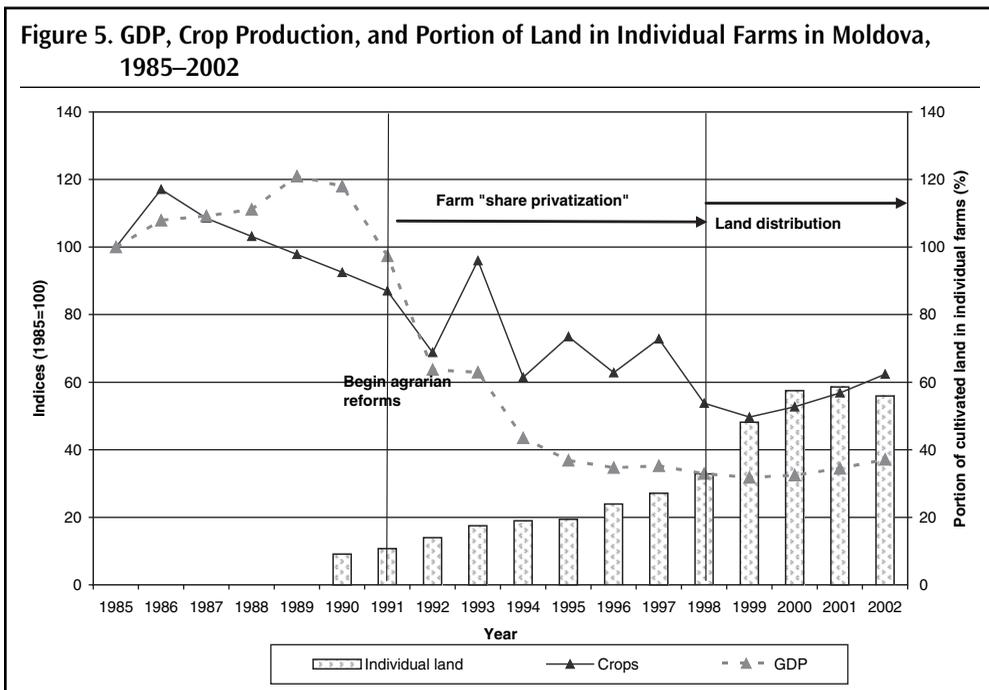
Note: The indexes measure the status of agrarian reforms in five key areas, with each index ranging from 1 (centrally planned economy) to 10 (completed market reforms).

Source: Csaki, C. and H. Kray (2005).

The effects of the agricultural and macroeconomic policies were unstable and low returns on the production of agricultural commodities and a sharp drop in the use of agricultural inputs. Most farm-gate prices after stabilization in 1995 were quite a bit lower than export prices, probably attesting to barriers to both domestic and international trade. First, the ratio of producer to export prices for cereals, maize, sunflower seeds, grapes, fruits, vegetables, and tobacco varied from 25 percent to 100 percent between

1994 and 2000.⁸ Though the ratio of farm-gate to export prices generally rose from 1995 to 2000, the ratio in 1999 for sunflower seeds, for example, was only 0.7. Second, the end of the central planning distribution system led to an immediate fall in farm use of agricultural inputs. Use of fertilizer per hectare in Moldova fell from just over 200 kilograms per hectare to 61 in 1992 and only 1 in 1999 (Sedik 2004).

With continued declines in agricultural input use, highly unstable returns, falling GDP, and uncertain property rights it is difficult to imagine robust growth in agricultural production in Moldova. In fact, crop production fell through 1999 and livestock production through 2001 (see Figure 5).



Source: Statistical yearbooks.

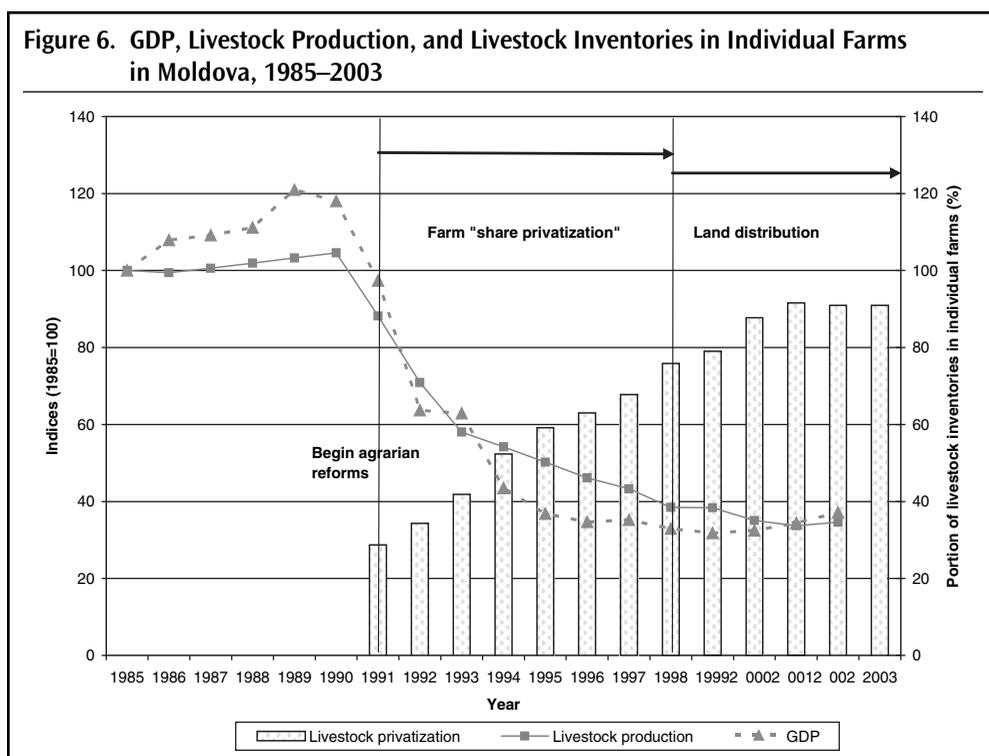
Agricultural Production and the Design and Implementation of Land Reform

Though the Moldovan land privatization formally began in 1991, the large-scale distribution of physical plots of land and the dissolution of collective farms did not begin until 1998. The Moldovan Land Code of 1991 envisaged a two-stage land privatization process (Muravschi and others 2002). In the first stage, the village land commission was to determine land shares (in hectares) for each eligible recipient. Land titles securing the holder's right to the land share were to be issued by mayors' offices. The second stage, initiated only

8. The ratios are calculated from unadjusted producer farm-gate and FOB (free on board) export prices. They do not account for transportation, handling, and storage costs between the farm gate and the border.

in response to a request from a recipient, was the distribution of physical plots to those wishing to exit from the collective or state farm.

During the first stage of farm share privatization, assets were stripped from large farms and production fell continuously (see Figures 5 and 6). Share privatization had a number of drawbacks, the most significant of which were that (a) it did not sufficiently encourage large farms to reduce costs of production (that is, it usually resulted in only “changing the sign on the door”), (b) it did not change the soft budget constraint implicit in government policies toward the farms, and (c) it did not resolve the barriers to exit from collective or state farms. Neither farm directors nor collectives were generally in favor of allowing their employees to leave the farm. Moreover, many details of the process of exit (allocation of land and property shares, the methodology for identifying concrete plots of land, and the division of large farm assets) were worked out only years after the initial decrees authorizing farm exit.



Source: Statistical yearbooks.

The generally far less favorable conditions for private farmers in matters of access to capital, inputs, and markets—compared with conditions for agricultural enterprises—dissuaded many from exiting former collective and state farms. This imbalance resulted from state agricultural policies that supported agricultural enterprises with subsidies, state and bank credits, authority to “borrow” from their employees through nonpayment of wages or from members through low payment of leases, writeoffs or rescheduling of state and bank debt, favorable marketing deals, and so on. Finally, local executive authorities

had great influence over the implementation of in-kind privatization of farms by design, and they often used this control to effectively slow or stop in-kind privatization that was tantamount to dissolution of farms under their authority.

A final drawback to share privatization that deserves separate treatment was the barrier to exit from agricultural enterprises posed by the accumulation of overdue debt by agricultural enterprises. In Moldova, neither the land nor the property of agricultural producers with unresolved debts could be distributed because of creditor claims on them (Csaki, Lerman, and Sotnikov 2002). The reason for the accumulation of debt was inadequate farm profits. In 1998, for example, 91 percent of corporate farms in Moldova were unprofitable (see Appendix A, Table A.11). Behind this accumulation of debt were the agricultural policies of the state, which determined the willingness of the state, banks, and input suppliers to forgive or reschedule state and bank debt and to extend new credits and subsidies to enterprises that were not making profits. In essence, the soft budgets that existed for agricultural enterprises in Soviet times continued into the post-Soviet period.

A change of government in 1998 made possible parliamentary approval of the National Land Program, which was financed with assistance from the U.S. Agency for International Development. The distribution of land under the Land Program halted asset stripping and the fall in crop production that had characterized the preceding seven years. Agricultural enterprises were dissolved, and land and physical assets were distributed after the enactment of the following the Law on Critical Property (November 6, 1998) and the Debt Law (May 13, 1999). The Law on Critical Property broke the logjam for the transfer of nonland assets of collective farms to recipients of physical land plots by ruling that creditors were not allowed to claim such assets in payment for unpaid debts and that land recipients were relieved of secondary liability on debts of farms under privatization.

The Debt Law specified an out-of-court liquidation procedure for privatizing agricultural enterprises. If a farm was insolvent, farm debts to private creditors were transferred to the state, with the state's agreement. The state settled those debts with a tax credit. Farm debts to the state were "settled" primarily by the sale of social infrastructure assets to the state (Law no. 187-XIV "On introducing amendments in some legislative acts" and Law no. 392-XIV "On restructuring agricultural enterprises in the process of privatization").

The Moldovan land reform process of share privatization, followed by distribution of plots, followed by reformation of corporate farms, was quite long and controversial, allowing plentiful asset stripping in the period before the physical distribution of plots. This long period of halfway reform itself probably contributed to the fall in crop production, though this allegation is difficult to claim with confidence because GDP also fell until 2000. The fall in crop production stopped shortly after physical land distribution, although GDP also turned up in the same year.

Local Government Reforms and Public Service Funding

Local government in Moldova has suffered from the same on-again, off-again reform that characterized land reform. During the period of land share privatization, the government introduced reforms in local governance, and the 1994 Constitution took steps to decentralize public services. In 1997, the government committed itself to increasing the financial autonomy of local authorities. The 1998 reform gave local authorities greater scope to collect

local taxes, although in practice the small local tax base has limited the revenues available to local and district authorities. The 2003 reform reduced the number of taxes, including the value added tax collected by local governments.

Moldovan local governments suffer from a critical lack of tax revenues with which to fund rural services, and they have overlapping mandates with other levels of government. Local authorities have little incentive to increase local revenues, because the largest portion of revenues goes into the central budget. This arrangement also reduces their incentive and capability to improve enabling conditions for farm or off-farm enterprises. Neither can they provide the kinds of incentives that once induced rural professionals to remain in villages. As a result, many rural municipalities have lost (or cannot attract) qualified staff members to manage and run the services they are mandated to provide (Deane and Catrinescu 2004). In general, fiscal reform has focused on administrative rather than on actual fiscal autonomy.

Disposition of Land Received

Farm reform resulted in 56 percent of cultivated land being farmed as individual farms (2002), while 91 percent of livestock inventories are in individual farms (see figures 5 and 6). The remaining 44 percent of cultivated land is farmed by newly formed corporate farms. Under the Moldovan land reform, “leaders” from farms subject to dissolution were able to appeal to farm employees to lease their land and nonland assets to new corporate farms (cooperatives, joint stock companies, and so on). Nearly all respondents in the World Bank survey used some of the land received through land reform themselves, while about 40 percent of respondents leased out land to large farms (see Appendix A, Table A.3). While an average household in Moldova owns 2.5 hectares, it uses only 1.5 hectares. One possible reason for this finding is that a considerable share of the rural population that received land plots was elderly and that a great number of young people left to work abroad. Nearly all land that is owned was received during the land privatization process.

In principle, the Moldovan land reform distribution stressed equity over efficiency. Land was distributed to a wide range of rural inhabitants, including farm employees, retirees, and others. Most people received various types of land in fragmented plots. It is, therefore, surprising that only about half of respondent households considered the land allocation fair. Moldovan households that rated the land reform as unfair stressed the lack of information in the distribution process, land fragmentation, and poor quality of land (see Appendix A, Table A.10). 10 percent of households believed they were not informed of their rights, and 19 percent found titling officials unavailable. Thirteen percent of respondents believed the land distribution process was unfair because it resulted in land fragmentation. Thirteen percent believed they received poorer quality plots than others. Informal interviews suggest that in practice, former farm managers—backed by municipal, regional, even central authorities—frequently discouraged households from removing their land from farming associations.

Economic Performance of Farms

Although land reform does not seem to have had an immediate effect on crop or agricultural labor productivity, it does seem to have resulted in gradual improvement, especially

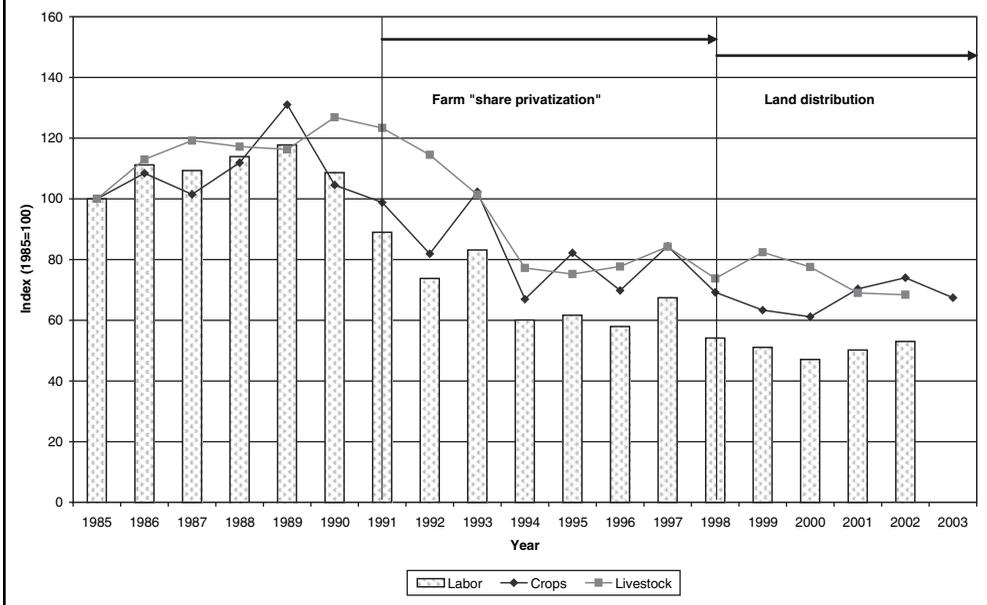
Box 5. How a Collective Farm in the Taraclia Region Lives On

In the southern region of Taraclia (a region characterized by large farm enterprises), a nominally restructured collective farm continues to operate. Workers on the farm reported that its powerful manager has used his ties with municipal authorities and police to prevent all but two well-connected and determined families from withdrawing land. The remaining people in this village of 6,000 lack land titles and do not know where their physical plots are located.

Source: Focus group discussions and household interviews.

when compared with the likely counterfactual of continued decline. Livestock and crop yields in Moldova fell through 1994 but they have been relatively stable since then (see Figure 7). Labor productivity that is based on official figures fell through 2000, and it has increased slowly since then. In Moldova, there has been no steep decrease in agricultural labor as seen in the Czech Republic, Estonia, Hungary, and the Slovak Republic. This finding suggests that there has been little if any of the labor shedding observed in those countries.

Figure 7. Indexes of Crop and Livestock Yields and Agricultural Labor Productivity in Moldova, 1985–2003

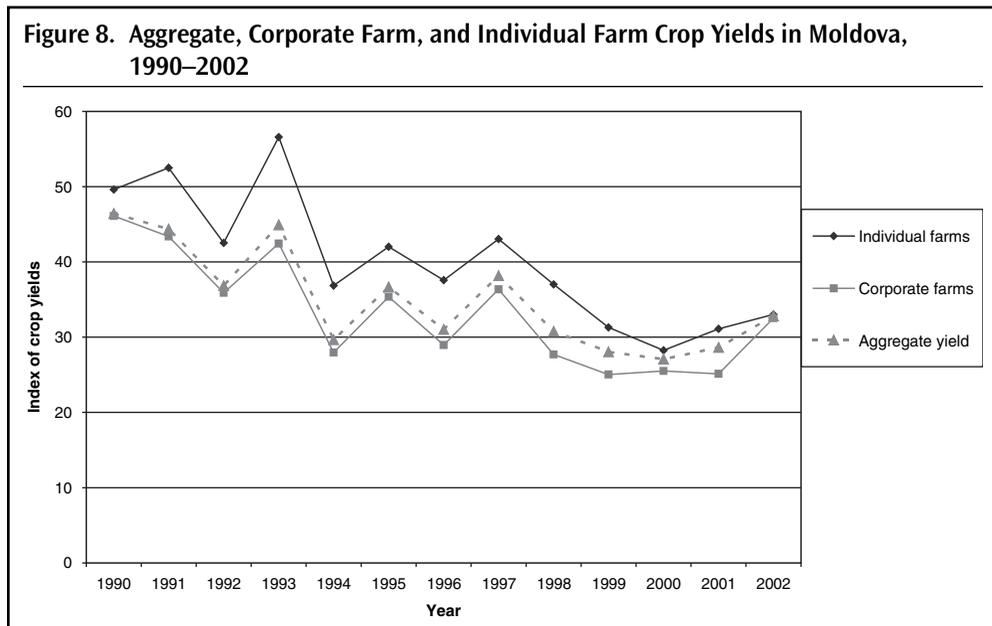


Source: Statistical yearbooks.

Figures on agricultural labor in Moldova are particularly uncertain, which implies that labor productivity calculations are uncertain as well. Though official figures on agricultural labor indicate that there has been very little change in the number of those employed in agriculture (about 700,000), official figures also indicate that there has been substantial emigration from rural areas of Moldova. At the same time, nonfarm employment in rural areas has declined severely, so it is possible that labor outmigration has been compensated

by immigration from other sectors. All these facts raise doubts about the agricultural labor figures but do not decisively disprove them.

The immediate effects of land reform in Moldova were to move about half of production from corporate farms to individual farms. The yield implications of this limited movement to individual farms were relatively small for two reasons. First, the potential for yield improvement was limited. Moldovan crop yields in corporate and individual farms never differed by much. Compared with Azerbaijan and Kazakhstan, the two other countries for which yield data exist by sector, crop yields in individual and corporate farms have been relatively similar since 1994 (see figure 8). However, for crops, the movement of the dotted line in figure 8 above the lower line indicates that land reform actually raised yields above what they would have been had production remained in corporate farms.⁹ Second, only half of the land in farms was moved to individual farms, also a rather modest change. This is another reason the difference shown by the dotted line in Figure 8 is so little.



Source: Statistical yearbooks.

If we consider instead a more medium-term view of land reform, our judgment about its effects becomes quite a bit less certain but perhaps more positive. What if there had been no resolution of the debt crisis and no dissolution of collective farms after 1997? A naïve answer to this question (about the best we can do) is that the yield trends of 1996 to 1998

9. According to available data from the Food and Agriculture Organization, transfer of livestock to individual farms seemed to reduce yields below what they would have been, at least until 2000. The livestock yield data (Appendix A, Figure A.2) are puzzling. If livestock yields were higher in corporate farms, it is unclear why more corporate farms have not taken up livestock breeding. The sudden switch in livestock yields in 2001 is also puzzling. Because of those apparent data quality problems, no further attempt will be made in this report to interpret livestock data.

would have continued. For crops, this yield would indicate a continued fall. Seen in this perspective, the modest gains in crop yields recorded after 2000 in Figure 8 are not as small as they appear. If the alternative without land reform was continued declines in yields, then even stabilization and a modest rise would seem to be an achievement.

A comparison between corporate and family farms while using World Bank survey in Moldova shows that total factor productivity on family farms was higher than on corporate farms (see Table 3). Family farms also have higher output per hectare, while corporate farms have higher labor productivity. The land and labor productivity differences may be shaped partly by differences in production profiles between corporate and family farms. Livestock is raised nearly exclusively on family farms and on private (household) plots, rather than on corporate farms. The fact that livestock production requires labor but little land may account partly for the high land productivity and low labor productivity in family farms. As in Bulgaria, it is impossible to disentangle productivity differences caused by scale and organizational form because the sample is segregated, with smaller categories made up nearly exclusively of family farms and larger categories of corporate farms (see Appendix A, Table A.5). Thus, it is not possible to draw robust conclusions from this comparison.

Farm type	N	Total factor productivity	Labor productivity		Land productivity	
			Output (1,000 LCU)/ AWU	Profit (1,000 LCU)/ AWU	Output (1,000 LCU)/ ha	Profit (1,000 LCU)/ ha
		Output/ total costs				
All farms	200	5.4	10.7	10.7	15.0	0.84
Family farms	176	5.9	9.9	0.8	10.8	0.83
Corporate farms	24	1.7	16.7	1.6	3.3	0.92

Note: LCU = local currency units; AWU = average work units. Indicators that are statistically different at the 20 percent or better level are in bold italics.

Source: World Bank survey of farms (2003).

The profitability of corporate farms appears to have significantly improved after 1998 (see Appendix A, Table A.11). Much of this improvement is probably due to debt write-offs, but an improvement in the performance of corporate farms in Moldova cannot be ruled out. The improvements in profitability seem to be unrelated to changes in crop and livestock productivity but are more correlated with crop production (see Figure 5).

Well-being of Rural Households

Moldovan households ranked their subjective well-being better than Bulgarian households did, though not as high as households did in Azerbaijan or Kazakhstan (see Appendix A, Table A.6). Only 14 percent of households ranked their current level of well-being as high, while 35 percent of respondents ranked their well-being as low. On the positive side, 29 percent of households believed that their well-being had improved in the preceding three years.

A comparison of the profiles of households reporting high and low levels of perceived well-being in Moldova shows that high-level households tend to have higher education, are younger, and tend to be headed by males rather than females (see Appendix A, Table A.9). Female-headed households (33.3 percent) were likelier than male-headed households (21.7 percent) to feel their well-being had deteriorated in the previous three years (see Appendix A, Figure A.1).

Moldovan household perceptions of the enabling environment for farming were, on the whole, better than those in other countries except Kazakhstan. In particular, access to advisory services, veterinary services, inputs, and most land transactions scored well. Moldovan households rated access to satisfactory irrigation as the most difficult of all farming services. Access to loans for farm investments seemed to be less of a problem in Moldova than in the other three countries surveyed.

Farming in Moldova is relatively labor intensive. The ratio of agricultural labor per hectare is the highest of the countries surveyed. The labor-intensive nature of agriculture here has had two important implications for farming. First, farming in Moldova has had a substantial influx of labor (see Appendix A, Table A.4). The agriculture sector in Moldova seems to have attracted labor from other sectors (such as processing) as workers have been laid off from other jobs. Labor-intensive agriculture does not present the kind of capital start-up costs found in other countries such as Bulgaria. Second, the enabling environment for farming for households and enterprises is similar. With fewer capital start-up costs than in other countries, households and enterprises (family and corporate farms) in Moldova ranked their enabling environment quite similarly, with most indicators being ranked only slightly easier for enterprises (see Appendix A, Table A.7).

A comparison of the structure of income in Moldova and Bulgaria shows how important food production and marketing are to the average household in Moldova, and how important pensions are to households in Bulgaria (see Appendix A, Table A.8). Whereas the portions of household income from salaries (from both farm and off-farm employment) and lease payments received in Bulgaria and Moldova are similar, Moldovan households earn nearly 40 percent of their income from producing and marketing agricultural products, while Bulgarian households earn only 14 percent of their income this way. Whereas 33 percent of the income of rural households in Bulgaria comes from pensions, pensions account for only 14 percent of household income in Moldova.

Rural Services, Social Benefits, and Community Life

Moldovan households believe that the levels of telephone and electricity services have improved since land reform (see Appendix A, Table A.12). Access to social benefits has generally deteriorated in the opinion of households, but the size of pensions has increased (see Appendix A, Table A.13). Certainly, more limited access to social benefits is to be expected as part of the move toward a more monetized economy. However, access to education and health services, two social benefits that are clearly within the mandate of the state, have deteriorated significantly as well. In a survey conducted in 2002 by Transparency International Moldova, more than 80 percent of respondents considered the deteriorating quality of the education and health care systems to be one of the country's most severe problems (Deane and Catrinescu 2004).

Moldovan households also believe that community life has deteriorated, as indicated by a rise in alcohol use and domestic violence, although the deterioration is not as drastic as that perceived by Bulgarian households (see Appendix A, Table A.14). Interviews and observations noted the proliferation of bars in villages and respondents' concerns with increasing alcohol abuse by women and by children as young as 12. Children of parents who had migrated were likelier to drop out of school or to suffer. Informal interviews found that in the face of a perceived increase in crime, villagers either failed to report the crime or took the law into their own hands because they saw the police as ineffective.

Conclusions

Land reform—interpreted as the transfer of production from corporate to individual farms—achieved positive, if modest, improvements in Moldova. Yields and productivity have improved: for crops, yields in individual farms were 21 percent higher than those in corporate farms over the entire period from 1990 to 2002. Almost 33 percent of surveyed households felt their well-being had improved in the preceding three years. And although there appear to have been few potential immediate yield gains to be made, it is doubtful that crop yields would have improved without land reform. A naïve estimate of the course of crop yields in the absence of land reform posits a continued fall rather than a modest improvement.

The most likely underlying reason for the relatively small difference between individual and corporate farm performance is the continued poor enabling environment and biased policies for farming. Continued ad hoc intervention in markets by the government kept and keeps yields in both individual and corporate farms low. The improvement in yields and increase in agricultural production after 2000 came during a period of lessening interventions. This improvement changed in 2003 (triggered by the damaging 2003 drought), with renewed interventions in grain markets accompanied by controls on processing margins for millers.

Corporate farms in Moldova are a mixed bag: some perform reasonably well and some perform badly (East-West Management Institute 2004). However, the profitability of corporate farms as a group seems to have improved dramatically after 1998. Although this improvement is undoubtedly partly a result of debt writeoffs, a general improvement in corporate farm performance cannot be ruled out. The slight improvement in labor productivity after 2000 may be part of the reason for the improved profitability of corporate farms. However, there is no evidence to suggest that there has been a large-scale labor shedding from corporate farms, as witnessed in the Czech Republic and the Slovak Republic. The World Bank survey of farms gave inconclusive evidence on productivity differences between family farms and corporate farms because the sample is segregated, with smaller categories made up nearly exclusively of family farms and larger categories of corporate farms.

Azerbaijan

With Some of the Poorest Governance Indicators in the CIS, How Did Azerbaijan Implement a Land Reform that was Viewed by Farmers as Quite Fair and that Led to a Substantial Increase in Productivity?

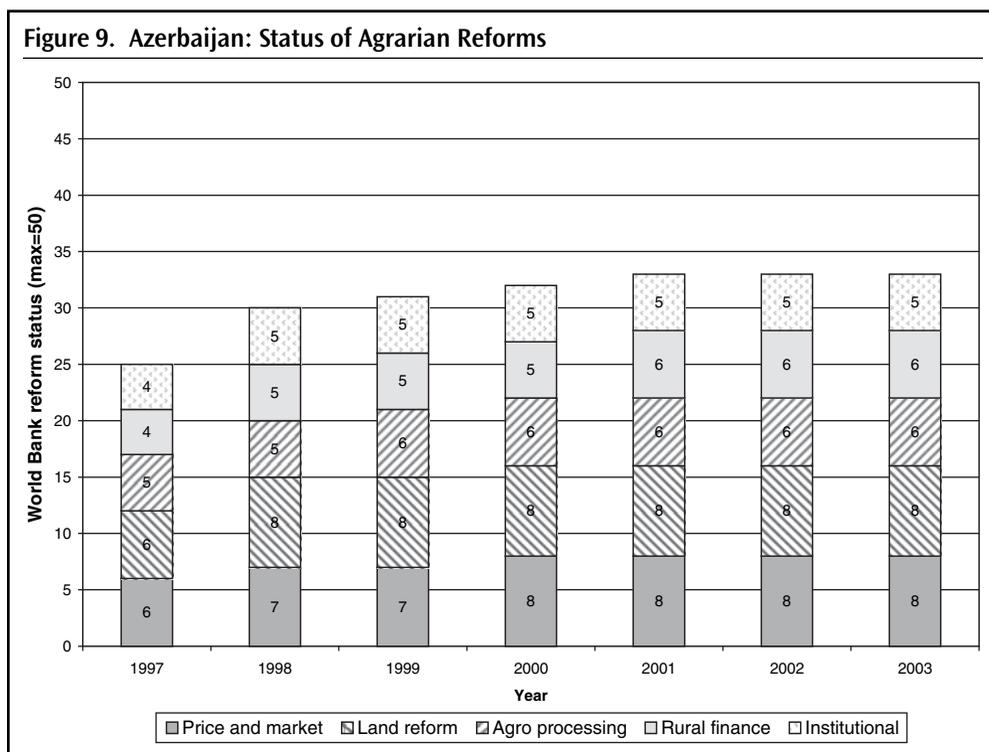
The years 1995 and 1996 were critical for Azerbaijan. By 1995, GDP had fallen to 36 percent of its 1990 level, inflation was more than 400 percent per year, and GAO was 50 percent of its level in 1991—after the most rapid fall in the CIS. Moreover, it was doubtful that the Azerbaijani government had the capability to turn the country around. Government effectiveness, rule of law, control of corruption, and regulatory quality were all low in Azerbaijan in 1996 (see Appendix A, Table A.1). Agricultural reform indicators for Azerbaijan developed by the World Bank were also the lowest of the four countries considered. Eight years after the beginning of agricultural reforms in Azerbaijan the results are beyond most people’s expectations. Agricultural production has grown steadily since 1996, save for one year. Crop yields have also increased steadily, and GAO has recovered to three-quarters of its 1991 level. How can this change be explained?

The Context of Land Reform

The policy environment for agriculture and rural development in Azerbaijan is characterized by a stable macroeconomy and by moderate agrarian reforms, but by a very poor business environment. The macroeconomic policy environment improved in 1995–96 with the stabilization of the currency, which reduced inflation from more than 1,600 percent to less than 5 percent per year between 1994 and 1997. GDP began to grow in 1996 and accelerated between 2000 and 2002 to an average rate of more than 10 percent per year. This high level of growth conceals the unbalanced nature of the Azerbaijani economy. Azerbaijan has a modern

and efficient oil extraction sector that accounts for 32 percent of GDP while it employ only 1 percent of the workforce (in 2001). The sector with the second largest share in GDP—agriculture—accounts for 16 percent of GDP but employs nearly 40 percent of the workforce.

Though the macroeconomic environment has been stable and growing since 1996, the enabling environment for agriculture is unfavorable. Even though the government made rapid progress in liberalizing the agricultural sector, it has taken few steps toward restructuring government and public institutions to serve the needs of private agriculture (see figure 9). One of the most difficult problems for Azerbaijani agriculture has been the weak business environment. Four fundamental problems face businesses in Azerbaijan: weaknesses in the legal and regulatory system, pervasive administrative barriers to investment, weaknesses in infrastructure provision, and corruption (World Bank 2005a). A further basic problem specifically for agriculture has been the extreme weakness of government agencies that should be in charge of advising the government on designing agricultural regulatory policies and implementing them, such as the Ministry of Agriculture.



Note: The indexes measure the status of agrarian reforms in five key areas, with each index ranging from 1 (centrally planned economy) to 10 (completed market reforms).

Source: Csaki, C. and H. Kray (2005).

Despite the stable macroeconomy, the poor business environment and the lack of public institutions serving and regulating private agriculture have had deleterious effects on farmers in several ways. First, the poor business environment and lack of regulatory capacity have discouraged investment in agriculture and agribusiness. Lack of modern processing technology limits product quality, in turn limiting the ability of processors to access

lucrative markets in Baku or abroad. Food processing production fell the farthest of the countries considered here and began to recover only slowly in 1998. By 2002, food processing production was only 16 percent of its level in 1990.

Second, lack of regulation (and trust) also limits incentives for long-term (even for a season) contracting between producers and processors. This limitation means that producer–processor coordination in Azerbaijan is either nonexistent (producers sell mostly in rural and urban markets) or is a spot market, thus limiting the ability of both sides to plan and expand production.

Third, in the end, the poor business environment and lack of institutional capacity limit the prices that producers receive for their commodities. Nominal protection coefficients (NPCs) for agricultural producers in Azerbaijan average about 0.8 for crops and about 0.6 for grapes and pomegranates. The NPCs for livestock outputs are even worse: 0.5 for beef, 0.8 for milk, and 0.3 for mutton. Low NPCs are one result of government policies and market failures that reduce farm-gate prices. Such low farm-gate prices barely cover the cost of harvesting and certainly do not cover the cost of farm and equipment maintenance or new investment (World Bank 2005a).

Agricultural Production and the Design and Implementation of Land Reform

Unlike in Bulgaria and Moldova, where land reform was the subject of vigorous parliamentary struggle, land reform and farm restructuring in Azerbaijan were closely associated with President Heydar Aliiev, who had favored agriculture during his reign as First Secretary of the Central Committee of the Azerbaijan Communist Party (1969–83) and who had started agricultural reforms in the Nakhichevan Autonomous Republic in 1992. After his return to power in 1993, President Aliiev ordered the formation of special commissions in December 1994 and March 1995 so he could formulate the agrarian reform. The main outcome of the commissions was the 1996 law “On land reform” (Mamedov 2000), which was the basic legislation on the dissolution of state and collective farms in Azerbaijan.¹⁰

The 1995 and 1996 decrees of President Aliiev on farm and land reform aimed to privatize Azerbaijani agriculture and to dissolve collective farms.¹¹ Those decrees defined the procedures for dividing and distributing both land and material assets of collective and state farms. The State Land Committee was charged with carrying out the necessary land survey work for division of land into parcels, as well as for issuing land titles. In-kind land distribution was gradual at first but picked up pace after 1998, following further intervention by the president.¹² A presidential decree “On Measures to Accelerate

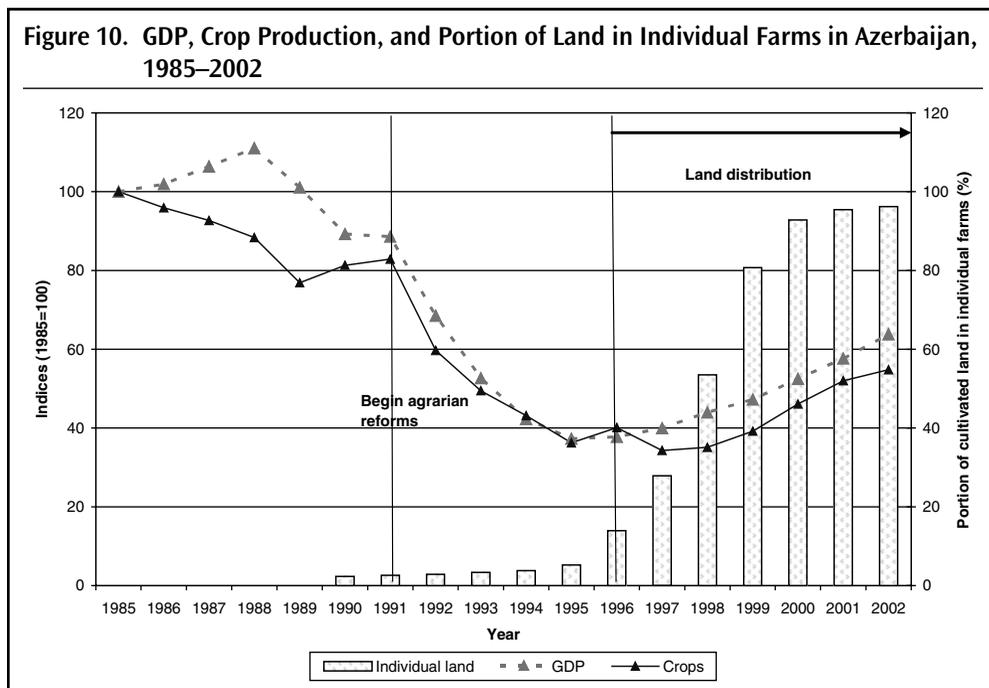
10. Land and farm reform in Azerbaijan before 1995 did not extend beyond Gorbachev-era reforms such as formation of family farms and greater decision-making flexibility for state and collective farms. Azerbaijan retained the state and collective farm system until 1996.

11. “On the Basis of Agrarian Reform” and “On the Reform of State and Collective Farms” (both dated February 18, 1995) and “On Land Reform” (dated July 16, 1996).

12. On January 1, 1999, according to the Ministry of Agriculture, 622,560 households received land titles. The number increased to 769,363 on January 1, 2006, and to 869,268 by January 1, 2006. By January 1, 2005, 76.5 percent of cultivated lands, 58.8 percent of perennials, 31.9 percent of arable lands, and 19.4 percent of the total land of the country had been privatized.

Reforms in Agriculture” (March 22, 1999) noted three abiding problems in the implementation of reforms in agriculture: slow progress in the issue of titles to household farms, unsatisfactory performance of agricultural enterprises, and unsatisfactory implementation of legislation by the Ministry of Agriculture and by the deputy prime minister for Agricultural Affairs. There followed more resolutions and decrees to ensure implementation of the 1995–96 presidential decrees as they were originally intended and to curb corrupt practices.

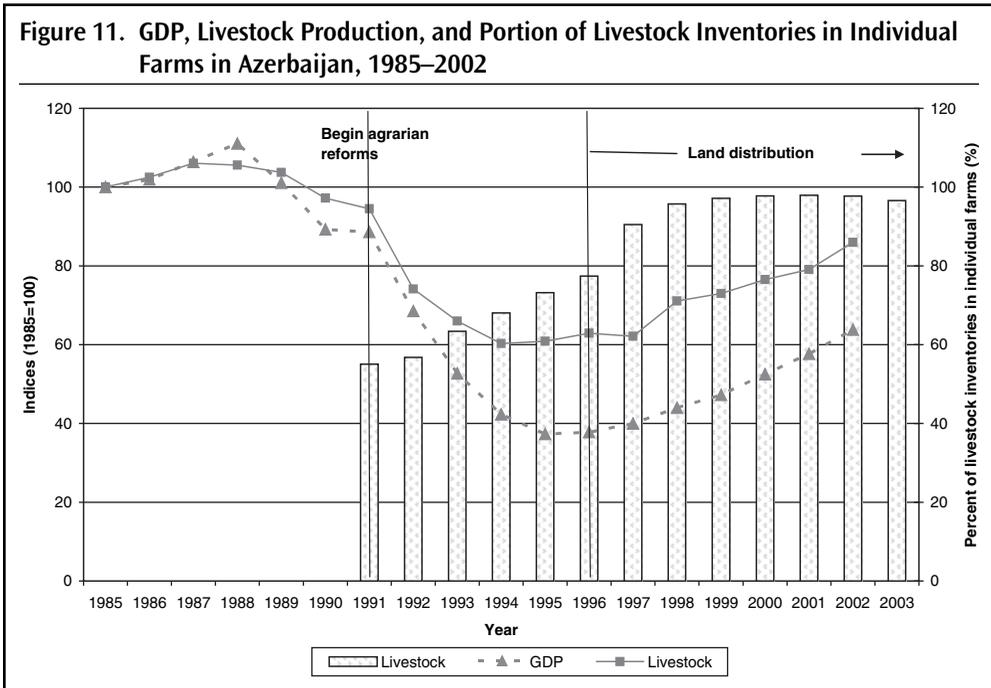
Figures 10 and 11 illustrate that both the transfer of livestock and the distribution of land were implemented quite rapidly. The transfer of livestock inventories to individual farms began even before land reform, picking up pace after 1996. The share of cultivated land in individual farms grew first gradually and then quite rapidly, starting in 1996. The transfer of livestock and land to individual farms was closely followed by the stabilization and then growth of production. Surprisingly, livestock production stabilized in 1994 even though GDP was still falling.



Source: Statistical yearbooks.

Local Government Reforms and Public Service Funding

In Azerbaijan, local government reform is relatively recent, and neither the problem of proper delineation of government mandates nor the problem of the provision of tax revenues sufficient to fulfill the mandate of municipalities has been resolved. Owing in part to the resistance of regional authorities fearing loss of power, it was not until 1999 that the Law on Municipal Elections and the Law on the Status of Municipalities were enacted, and



Source: Statistical yearbooks.

it was January 2000 when the first elected municipal governments took office. Current legislation gives citizens the opportunity to participate in local governance through referenda and assemblies or by proposing initiatives. Local councils can establish local taxes, adopt budgets, report on budget performance, and approve local programs for social protection. Chairpersons, elected from among council members, also act as heads of the executive apparatus (Munteanu and Popa 2001).

Tensions and ambiguities remain between local state administration bodies and elected municipal governments, because their relations are not fully detailed in legislation. Although they can receive financial assets from legislative and executive authorities, mechanisms for receiving grants, donations, and subventions from the state budget remain unclear. Even if some municipal revenue was to come from renting out municipal property, transfer of state assets was, in many cases, delayed; property was, in some cases, privatized; and much of the assets actually transferred proved to be unprofitable. Thus, municipalities are unable to rely on their own revenues.

Most services are still implemented through local branches of the state administration. In principle, municipalities restrict their activities to maintaining housing; social, cultural, and sports establishments; and public areas (including streets and parks) because of resource constraints. In the past few years, actual transfers to municipalities have been far less than the amounts promised in the state budget.¹³ Finally, many mountainous communities are

13. See Mamedova and others (2001), International Development Association (2004); Government of Azerbaijan (2004).

so remote and the roads to them are so impassable that they have fallen off the radar screen of municipal authorities. The study team found that district authorities appeared unaware of the location of a number of such villages, while villagers faced practical obstacles in reaching district offices.

Disposition of Land Received

Unlike in the other countries surveyed, land reform in Azerbaijan did not explicitly allow for newly formed cooperatives or other types of corporate farms. Moreover, land in Azerbaijan seems to have been distributed quite widely. By 2002, some 96 percent of cultivated land and 98 percent of livestock inventories were in individual farms. Nearly all households in the World Bank survey received land as a result of land reform, and that land was the only land that households own, apart from plots near their homes (see Appendix A, Table A.3). About 80 percent of households chose to farm the land themselves, while 9 percent leased land to other persons, and 16 percent left some land unused. Only 10 percent of households leased out land.

The equitable distribution of land in Azerbaijan was reflected in the World Bank survey results. In a country where assessments of governance and corruption have been uniformly low (see Appendix A, Table A.1), 92 percent of surveyed households considered land reform to be fair (see Appendix A, Table A.3).

On average, profiles of surveyed households that used and did not use land received through land reform are consistent with the hypothesis that those that chose not to farm distributed land are older households that lease out their land and their farm private plots primarily for subsistence (see Table 4). Households using land received in land reform had higher overall incomes and higher income from farming (particularly from sales), but have lower pensions, social assistance, and gifts or remittances.

Economic Performance of Farms

Land reform in Azerbaijan was followed closely by increases in crop and livestock yields (see Figure 12). Even agricultural labor productivity in Azerbaijan appears to have started to grow in 2000, a result of growth in GAO that has averaged 8.4 percent per year since 1998.

Part of the reason for the impressive increase in crop yields following land reform in Azerbaijan is that there was a very large potential for yield increases solely from privatization (see Figures 13 and 14), which was indicated by the large and continuing differences in crop yields between the corporate and individual farm sectors. However, the yield increases in Azerbaijan cannot have been derived solely from the redistribution of land. Individual and corporate farm yields both rose and continued to do so even after land was redistributed.

In Azerbaijan, productivity measures for family farms were higher than those for corporate farms in each category measured (see table 5). Those measurements appear to reflect differences in organizational form. In contradistinction to Moldova and Bulgaria, where it was impossible to determine whether differences in productivity derived from scale or organizational form because family farms were concentrated in the smaller size categories

Table 4. Monthly Per Capita Expenditure, Perceived Well-being, and Income Composition of Surveyed Households that Use and Do Not Use Land Received during Land Reform			
	Using land received through privatization	Not using land received through privatization	
Monthly per capita expenditure (manat)	144,581	121,709	**
Perceived well-being (% of households rating today's well-being as high or very high)	15.2	11.1	
Households indicating that well-being improved in preceding three years (%)	17.6	19.0	
Share in total income (%) of			
Total salary from wage employment (cash or in kind)	10.0	12.7	
Value of farm production consumed in the family	28.8	21.9	***
Sales of farm products	39.1	26.0	***
Rent or lease payments received (for land and assets)	0.0	2.1	***
Total revenue from other private nonfarm business	1.2	5.1	***
Pensions	12.3	20.5	***
Social assistance	1.3	2.4	***
Gifts and remittances	0.1	2.6	***
Other	7.1	6.6	

Note: Asterisks mark significant differences between households that use land they received through privatization and households that do not use land that they received through privatization. ***, **, * differences are significant at 1, 5, and 10 percent significance levels. *Source:* World Bank Survey (2003).

and corporate farms in the larger size categories, the sample of farms in Azerbaijan included family and corporate farms of a wide range of sizes (see Appendix A, Table A.5).

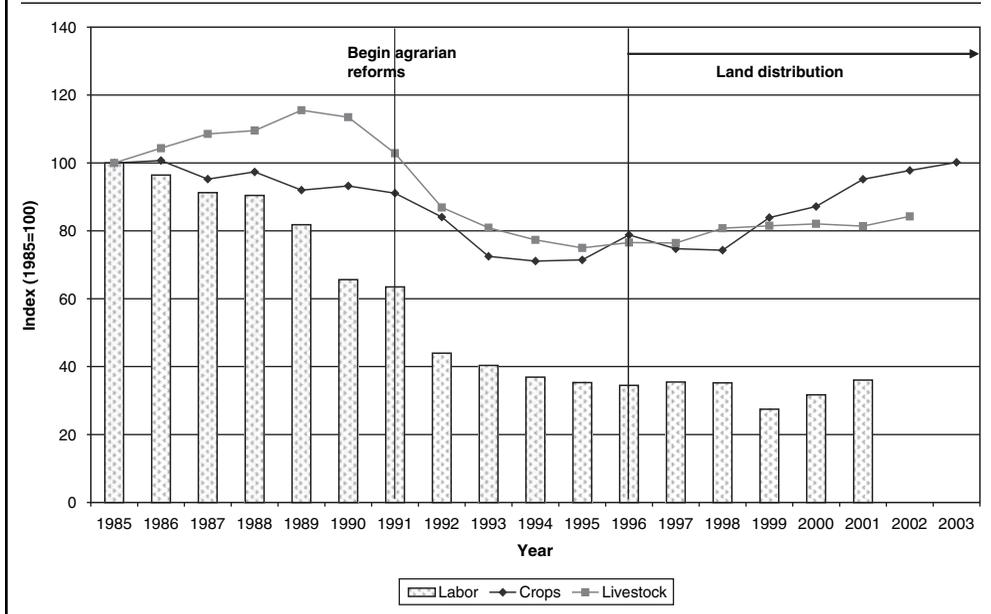
The profitability of agricultural enterprises in Azerbaijan has improved greatly since 1998. It can be presumed that there are many reasons for this change: debt relief, restructuring, the general recovery of production, and growth in yields. But, in truth, little is known about the few remaining corporate farms in Azerbaijan (2,420 on April 1, 2002), except that they come in a large variety of sizes and are less productive than similarly sized family farms.¹⁴

Well-being of Rural Households

There is an important disparity between the excellent sector performance and the mediocre subjective well-being of rural households in Azerbaijan. With clear improvements in yields,

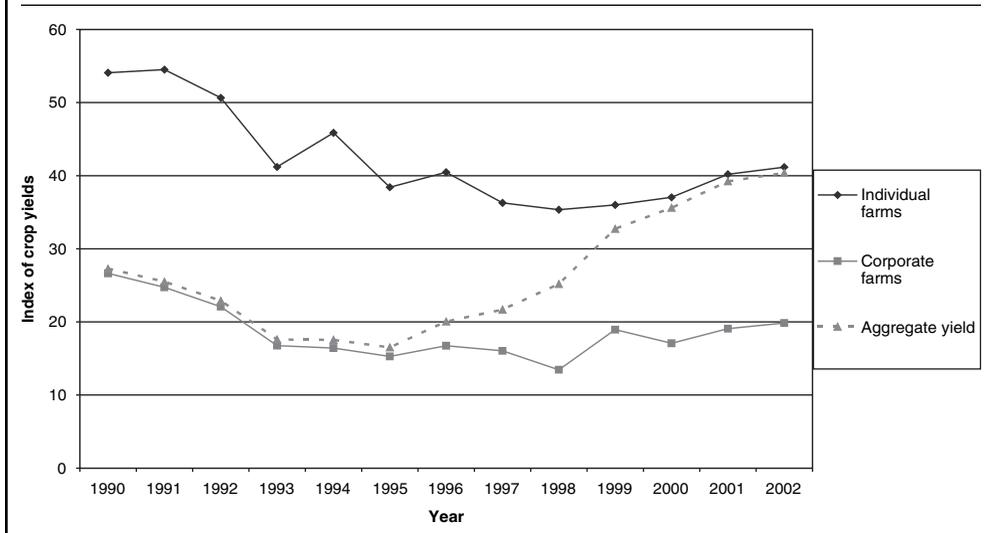
14. The World Bank survey includes information on 15 such farms, of which 80 percent are newly formed.

Figure 12. Indexes of Crop and Livestock Yields and Agricultural Labor Productivity in Azerbaijan, 1985–2003

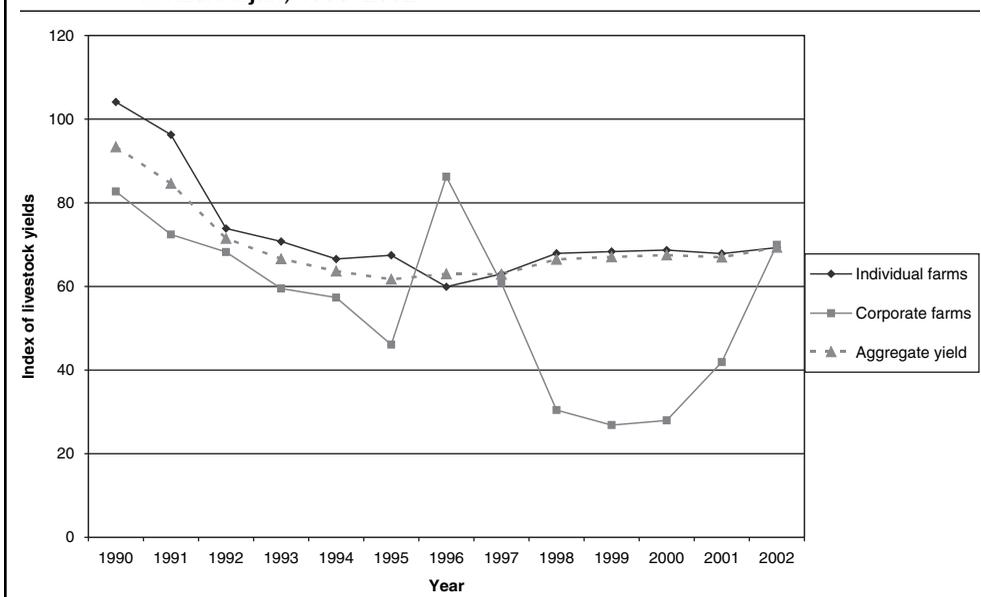


Source: Statistical yearbooks.

Figure 13. Aggregate, Corporate Farm, and Individual Farm Crop Yields in Azerbaijan, 1990–2002



Source: Statistical yearbooks.

Figure 14. Aggregate, Corporate Farm, and Individual Farm Livestock Yields in Azerbaijan, 1990–2002

Sources: Statistical yearbooks.

Table 5. Productivity Measures for Farms Surveyed in Azerbaijan, by Type

Farm type	N	Total factor productivity Output or total costs	Labor productivity		Land productivity	
			Output	Profit	Output	Profit
			(1,000 LCU)/ AWU	(1,000 LCU)/ AWU	(1,000 LCU)/ ha	(1,000 LCU)/ ha
All farms	80	2.1	7,032	5,714	1,589	1,612
Family farms	65	2.3	7,803	6,305	1,762	1,819
Corporate farms	15	1.0	3,692	3,054	840	680

Note: LCU = local currency units; AWU = average work units. Indicators that are statistically different at the 20 percent or better level are in bold italics.

Source: World Bank survey of farms (2003).

growth in production, and decreases in rural poverty, it would seem likely that the perceived well-being of Azerbaijan households would be higher than in the other countries surveyed. However, only 14 percent of households surveyed in Azerbaijan rated their current level of well-being as high—the same proportion as in Moldova. Moreover, only 18 percent of households believed that their level of well-being has improved over the past three years—lower than in Moldova, where yields and production increased only modestly following land reform. More positively, in Azerbaijan, the smallest proportion of farming households believed that their level of well-being had deteriorated over the past three years. However, there is still a disconnection between sector performance and the subjective well-being of Azerbaijan households.

One key to the disparity, which will be considered in the next section, is the substantial deterioration in rural services in Azerbaijan and their generally low level compared with services in urban areas. The provision of gas per rural resident deteriorated tenfold from 1990 to 2000, while supplies per urban resident rose. Moreover, the disparities in service provision per resident between rural and urban areas for gas, clean water, and plumbing are on the order of 10 to 1 (see table 6).

The increase in agricultural employment observed in Azerbaijan probably does not explain the low number of households reporting that their well-being increased in the preceding three years. Although there has been an increase in agricultural employment in Azerbaijan since 1989, with substantial jumps in 1990 and 1999, agricultural employment fell after 1999. If we assume the figures on agricultural labor are accurate, the increase in agricultural employment could indicate substantial urban–rural migration. With more labor and less production per worker, income from farming per worker would fall. However, since 1999 agricultural employment has been falling, which has caused a rise in labor productivity in 2000 and 2001. If this trend continued into 2002 and 2003, then it could not be an explanation for the low number of households reporting that their well-being had increased in the preceding three years.

Perceptions by rural households of their enabling environment in Azerbaijan are quite consistent with their perceptions of well-being: worse than in Moldova, though not quite as bad as in Bulgaria (see Appendix A, Table A.6). Access to loans, agricultural equipment, and other inputs were judged particularly difficult in Azerbaijan. A comparison of households reporting high and low well-being shows that those with high well-being had better education, were less likely to be headed by a female, were more likely to be ethnic Azerbaijani rather than from other ethnic groups (mainly Talysh), and were more likely to be from northeast Azerbaijan, an area covered by World Bank land reform and postprivatization projects (see Appendix A, Table A.9).

Farming in Azerbaijan is comparatively labor intensive. The ratio of agricultural labor per hectare there is nearly as high as in Moldova. And as in Moldova, agriculture in Azerbaijan has had an influx of labor (see Appendix A, Table A.4), perhaps as a result of unemployment in other sectors. It is, therefore, surprising that—with few capital barriers—Azerbaijan enterprises rate their enabling environment quite a bit better than do farming households (see Appendix A, Table A.7). In Moldova, enterprises rated their enabling environment only slightly better than did households. The difference between the two countries appears to lie in the size distribution of farm enterprises (family and corporate farms). In Moldova, farm enterprises surveyed were predominantly under 5 hectares. This fact in itself seems to indicate that technology in household farms and farming enterprises differs very little. In Azerbaijan, farm enterprises in the sample were quite a bit larger, on average 151 hectares. This substantial difference in size appears to indicate that the technology of farming in this sample of farming enterprises is adapted to raising crops (wheat or cotton) in large fields, which will require mechanized harvesting. In Azerbaijan, farm enterprises (both family farms and corporate farms) rate access to inputs, farm machinery, advisory services, and marketing channels as being far easier than did household farms.

Finally, one reason households in Azerbaijan may be more pessimistic about their level of well-being is that the level of risk in household income is quite a bit higher in Azerbaijan than in any other country surveyed (see Appendix A, Table A.8). Incomes in other countries surveyed are significantly more diversified than in Azerbaijan. Fully 64 percent of household

income derives from farm production in Azerbaijan, but only 11 percent from wage employment and 14 percent from pensions. Compare this set of percentages with Moldova, the other country with labor-intensive agriculture, where 33 percent of household income was derived from wage employment, 40 percent from agricultural production, and 14 percent from pensions.

Rural Services, Social Benefits, and Community Life

Rural household perceptions of the level of rural gas and electricity services in Azerbaijan show the greatest deterioration compared with the level before land reform of any of the countries surveyed (see Appendix A, Table A.12). Availability of clean drinking water has not changed, and access to telephone services seems to have increased. Those perceptions may even underestimate the deterioration of public services, as reported in official statistics (see Table 6), though it is clear that the deterioration in rural services predates land reform. The degree to which public services in rural areas of Azerbaijan have deteriorated is strikingly higher than that in urban areas. The general level of gas, water, and plumbing services is also much lower in rural than in urban areas.

Box 6. Rural Services in the Shamakhy and Khachmaz Districts of Azerbaijan

Azerbaijani villagers in Shamakhy district no longer have gas, because after the breakup of the state farm, the gas pipes were cut and sold. Likewise, a kilometer's worth of pipes that brought water from the district center was stolen. The culprits were said to be known but the police were uninterested.

Formerly, irrigation water was distributed from a tank to which four kilometers of pipes were connected—those pipes were also stolen. In Khachmaz district, electric cables were stolen, and villagers themselves raised money to replace them and restore service.

Source: Focus groups and interviews.

During interviews, respondents reported that frequent weather-induced road closures interrupted the education of children—and was a reason that more prosperous families preferred to move to towns with better educational offerings. Azerbaijani farming households, like households in other countries surveyed, report deterioration in access to subsidized rural social benefits (see Appendix A, Table A.13). The exception, as in other countries, is pensions, which seem to have improved.

Azerbaijan stands out from the other countries in household perceptions of community life, which seems to have improved in many ways (see Appendix A, Table A.14). Rural households believe that when compared with the levels before land reform, the levels of alcohol abuse, criminal activity, and domestic abuse have all fallen. Informal interviews indicated that part of this is due to the increased importance of religion in rural social life. But it is also undoubtedly a result of the period of comparison: the early 1990s. In contrast to other countries where the period preceding land reform might be characterized as “developed socialism,” the early 1990s in Azerbaijan were years of war, political turmoil,

Table 6. Deterioration of Selected Public Services in Azerbaijan, 1990–2000							
Year	1990	1995	1996	1997	1998	1999	2000
<i>Gas supply per inhabitant (cu meters)</i>							
Urban	377.1	816.7	392	354.6	322.3	375.5	385.4
Rural	379.9	127.6	30.8	25.1	27.3	23.9	31.0
<i>Liquefied gas supply per inhabitant (kg)</i>							
Urban	1.5	0.2	0.2	0.2	0.2	0.1	0.2
Rural	9.3	2.5	3.1	2.9	1.8	0.8	1.0
<i>Average daily water supply per inhabitant, communal and personal needs (liters)</i>							
Urban	485.9	527.9	534.9	488.7	397.0	337.0	350.8
Rural	18.8	7.8	6.4	5.4	2.4	7.9	3.9
<i>Piped water infrastructure (% of settlements)</i>							
Urban	95.7	95.7	95.7	95.7	95.7	95.7	95.7
Rural	10.8	11.5	11.5	11.5	11.5	11.5	11.3
<i>Piped gas infrastructure (% of settlements)</i>							
Urban	100	100	100	100	100	100	100
Rural	80.3	80.4	80.4	80.4	80.4	80.4	79.2

Source: State Statistical Committee of the Republic of Azerbaijan (2001b).

and a deteriorating socialist economy. Migration is considerably lower than in the other countries (9 percent of households reported a member absent in the previous 12 months, compared with 33 percent of Moldovan households). Although migration (mainly men doing military service or seeking work in cities or abroad) imposes a heavy labor burden on rural women, it does not appear to fragment families, as was the case for a number of Moldovan households. At the same time, respondents felt concerned about the idleness and despondency of young men returning from military service, who are unable to find work and, therefore, could not marry and take their expected place in rural society.

Women in Azerbaijan—more than in the other countries studied—felt excluded from public life. Formally mandated meetings organized by work collectives no longer take place, informal community institutions where information was shared and decisions made are gender segregated, and productive activities have become individualized. Focus group discussions from the World Bank survey found women less likely than men to attend public meetings or to consult with authorities, and they are less knowledgeable about the legal and administrative aspects of the reform, as well as its implications for their own households. As noted in an earlier section, female-headed households were likelier to report low well-being than male-headed households.

Conclusions

Azerbaijan seems to illustrate that overwhelming political will is often more effective in carrying out reform than the on-again, off-again reforms that come with a parliament divided between two opposing factions. Moreover, the single-minded individualization of

Azerbaijani agriculture suggests that the Moldovan and Bulgarian reforms, which resulted in a mix of corporate and individual farms, were truly formed of political compromise. Land reform in Azerbaijan aimed most decidedly at creating private, owner-operated farms, in contrast to the other three countries, where this aim did not have the same weight. As a result, 96 percent of cultivated land was farmed in individual farms in 2002.

Azerbaijan has also had very positive sector performance following land reform and farm restructuring. This performance is partly a result of the very large potential for yield improvements in performance in Azerbaijan from land reform, which is much larger than in Moldova or even Kazakhstan. However, the yield increases do not seem to have been derived solely from land redistribution. Private and corporate farm yields continued to rise even after land was redistributed.

Despite this very good growth of agriculture, there have been few downstream improvements in processing in Azerbaijan that would lead to growth in food processing. Investment and contracting have been limited by the poor business environment and to the lack of regulatory policies and contract enforcement (World Bank 2005a).

Good sector performance has also not translated into sizable increases in the subjective well-being of farming households. Though farming households that use land they received under land reform seem to earn about 20 percent more than households that do not farm such land, farming households in Azerbaijan have few other sources of income. This lack of income diversification in a country where farming is labor intensive means that the risk-adjusted income stream from farming in Azerbaijan is probably lower than it is in other countries, where income is more diversified.

The case of Azerbaijan also seems to illustrate the significance of governance in implementing rural reforms. Low levels of governance in Azerbaijan did not seem to prevent the proper implementation of land reform. The World Bank supplied needed technical guidance in the implementation of land reform, backed by a government with political will. However, rural inhabitants in Azerbaijan have seen the most severe deterioration in rural public services of any of the countries surveyed, and attempts at organizing local government have been more difficult and taken longer in Azerbaijan than in Bulgaria or Moldova. This difficulty seems to indicate that low levels of governance present more problems for day-to-day maintenance of public services than for a one-time land reform, for which expertise can be imported.

Kazakhstan

Why Does Kazakhstan have Surprising Results from a Poor Reform?

By most accounts, Kazakhstan's land reform has excessively emphasized preservation of large farms, many of which have been bought by vertically integrated private grain companies (Esirkepov 2001). Preservation of large farms resulted in maintenance of the extremely uneven allocation of land from Soviet times, while "share privatization" made implicit promises to farm employees about land distribution that were not kept.

Kazakhstan's officials maintain that the land reform has favored efficiency over equity in an effort to avoid the fragmentation of land ownership observed in other countries. However, the skewed distribution of land, it is argued, carries with it a skewed distribution of income, which will preserve rural poverty. It is, therefore, surprising to find that the perceived well-being of farmers in Kazakhstan exceeded greatly that found in other countries studied. And the highest portion of households indicating that well-being had improved in the past three years were found in Kazakhstan.

Moreover, production of crops and livestock has increased in Kazakhstan nearly every year since 1998, and rural farming households are more satisfied with rural public services than in other countries. Perhaps most surprising of all, 78 percent of agricultural production now originates in individual farms. What parts of those improvements are due to land reform and what parts resulted from the oil-led economic boom?

The Context of Land Reform

The enabling environment for farming in Kazakhstan is characterized by a stable macro-economy and by government support that seems to favor large farms over small farms. The government of Kazakhstan stabilized the currency in 1996, after a period of severe inflation. Growth of gross domestic product (GDP) began in 1996 and, except for a brief fall in 1998

as a result of the Russian ruble crisis, has accelerated so that annual growth in 2002 was 10 percent. Some of this growth is led by oil production, though it would be erroneous to attribute those growth rates exclusively to the energy sector. Kazakhstan has managed its windfall oil revenues so it could avoid symptoms of the Dutch disease. For instance, under the State Agro Food Program for 2003–05, 8 percent of the state budget is earmarked for support of agriculture. Thus, oil revenues have made possible such support, most of which goes to institutional and infrastructure development (“green box measures”; Serova 2004).

The enabling environment for agriculture in Kazakhstan seems to be supportive of large farms though quite a bit less so for small farms. Under the State Agro Food Program for 2003–05, agricultural producers can purchase inputs such as fuel, lubricants, seeds, and fertilizers with a 40 percent subsidy. Bureaucratic requirements seem to create a disincentive for small farms to access those subsidies (Csaki and Zuschlag 2004). Most credits from commercial banks are also directed to large farms. Small farm credit is currently far below needs, particularly for long-term purposes such as equipment purchase. All farms can lease agricultural machinery at subsidized interest rates, though such machinery is often more appropriate for larger farms.

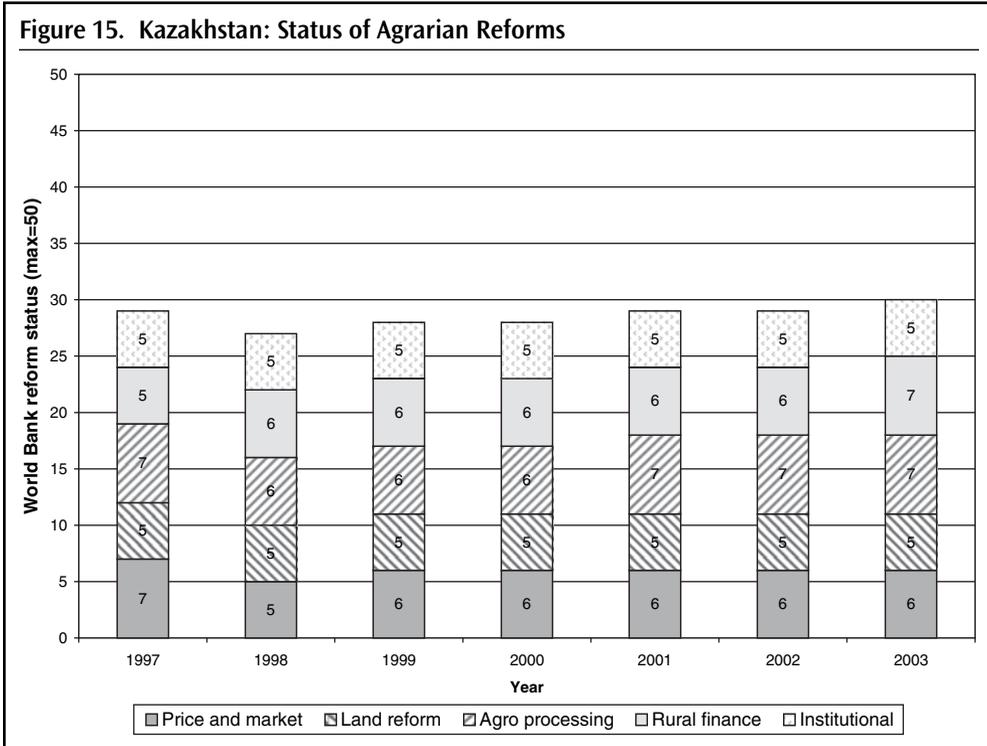
The 2003 land code allows for private ownership of land, a move that is perhaps more important for small farms for collateral. However, land not already in family farms can be obtained only by purchase. Moreover, owners of land use rights will no longer be allowed to sublease their rights for farming. Those stipulations of the 2003 Land Code seem to raise the costs to small farmers of operating in Kazakhstan. Finally, the government of Kazakhstan has lately begun to speak of the need for family farms to expand their size, raising doubts regarding the security of small farms’ land rights.

The World Bank indicators on the status of agrarian reforms in Kazakhstan are generally rather low, particularly for institutional reform and rural finance (see Figure 15). Low scores in these two areas indicate a lack of government institutions for the support of smallholder agriculture and a lack of rural finance resources for small farms. The reform status indicators reinforce the view that the environment for farming in Kazakhstan is quite different for small and large farms. Despite only modest reforms, both crop and livestock production in Kazakhstan have been growing since 1998 (see Figures 17 and 18).

Agricultural Production and the Design and Implementation of Land Reform

Kazakhstan’s land reform can perhaps be best described as a combination of having share privatization, reducing the size of and restructuring corporate farms, and forming family (peasant) farms. Share privatization in Kazakhstan started in 1993 when the collective form of property was eliminated in Kazakhstan’s legislation (Esirkepov 1999).¹⁵ In-kind distribution of property shares was to take place at the initiative of the intended beneficiary with

15. Presidential Decree “On additional measures for privatization of the property of state agricultural, procurement, processing, and service enterprises of the agro-industrial complex” (dated March 5, 1993).



Note: The indexes measure the status of agrarian reforms in five key areas, with each index ranging from 1 (centrally planned economy) to 10 (completed market reforms).

Source: Csaki, C. and H. Kray (2005).

the agreement of the farm director, though land was to remain the exclusive property of the state. By 1995, however, the law “On land” specified that lands of restructured agricultural enterprises were to be divided into conditional land shares on paper. These shares were to be granted in permanent tenure (not ownership) to certain groups of people who resided in rural areas. These groups consisted of members of liquidated and restructured collective and state farms, workers of state-owned agricultural units, and pensioners, as well as those who were employed in production or the social and cultural spheres of these farms.

Holders of conditional land shares had the right to:

- Transfer the land share right to the base capital of a business enterprise or as a unit share of a newly formed production cooperative,
- Withdraw a land plot in kind to form a family farm or for commercial farm production,
- Transfer or lease the land share right,
- Lease out the conditional land share right, or
- Abandon the conditional land share right.

By 1997, some 2,277,000 conditional land shares of an area of 118 million hectares had been granted to recipients without charge.

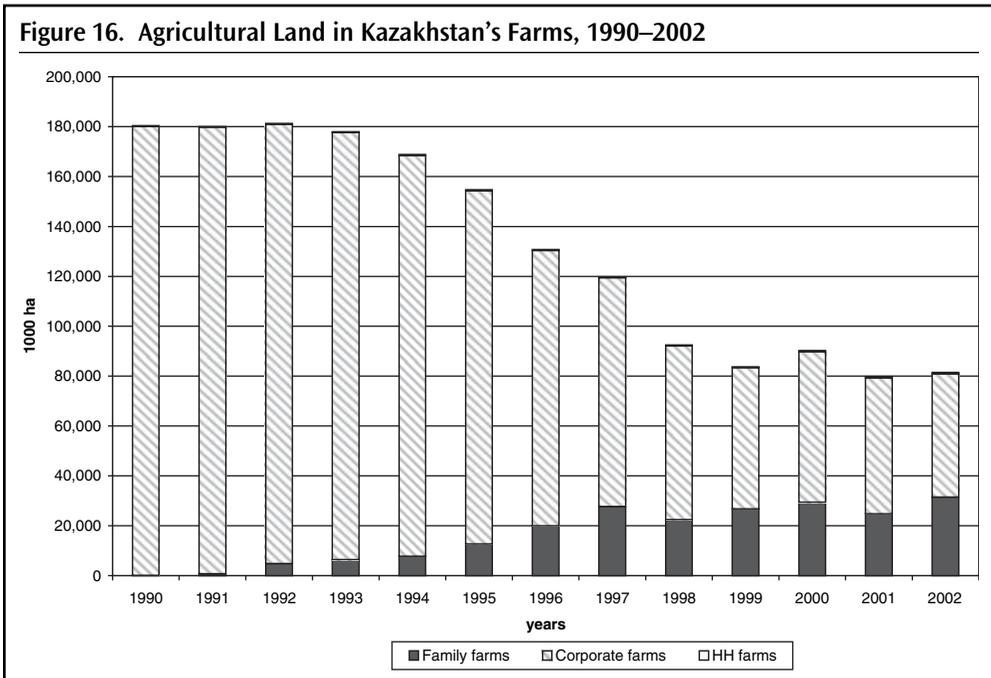
By 2002, owners of conditional land shares exercised their rights in the following ways:

- 18 percent of shares were transferred as base capital to newly formed corporate farms. The shares were primarily those of former managers and specialists of state and collective farms, members of their families, and other persons who were better informed or were entrepreneurial. Those persons gained access to the assets of newly formed farming companies.
- 29 percent of shares were transformed into physical land plots to be used for forming family farms. The holders of those shares were primarily specialists who were from collective or state farms or who had agricultural machinery and financial resources.
- 4 percent were sold to commercial farms.
- 3 percent were transferred (given) to other persons.
- 18 percent remained unclaimed or were returned to the government. The shares were those of rural residents who either never claimed their shares or abandoned them because they had migrated to cities or other countries.
- 28 percent were leased out. Those shares were primarily the ones of pensioners, social and cultural workers (doctors, teachers, and the like), the poor, and people employed in other businesses.

Share privatization of farms in Kazakhstan had the same problems as in Moldova, including maintenance of the soft budget constraint, little difference in cost management, and preservation of barriers to forming family farms. As in Moldova, the overwhelming majority of corporate farms in Kazakhstan by 1998 were unprofitable (see Appendix A, Table A.11), leading to a debt crisis and demonetization of transactions. Kazakhstan's response to those problems was different from the Moldovan one, where share privatization was ended by dissolving former collective farms, distributing land, and allowing the formation of newly formed cooperatives and joint stock companies, predominantly under new management. In Kazakhstan, the debt crisis was addressed by bankruptcy proceedings, which allowed debt writeoffs; buyouts of large farms by large, vertically integrated grain companies (processors), which sometimes brought in new management and access to capital; and further concentration of land and property shares under management control (Gray 2000; Esirkepov and Beisembaev 2001). Qualitative information indicates that those measures did not go as far in breaking soft budget constraints and replacing subsidies as did actual dissolution of former collective farms in Moldova.

In 2003, the government of Kazakhstan took a further step toward doing away with share privatization by outlawing share subleasing (affecting 28 percent of conditional land shares in the last category listed above), effective January 1, 2005. Article 170 of the 2003 Land Code states that the land shares were to be returned to the government on January 1 if the owners did not purchase their land share, transform the land share into a physical plot in order to establish a family farm, or transfer their share into a corporate farm by that date. It may be argued that Article 170 is a logical continuation of the bankruptcy process. The aim has been to do away with share privatization and to concentrate corporate farm ownership and management, while avoiding a breakup of large farms through land distribution. However, Article 170 has also probably had the effect of reducing the amount of land in family farms, which were the subleasers of land.

Reductions in the size of corporate farms in Kazakhstan began in 1993 with the farm restructuring that accompanied share privatization. From 1993 to 1999, the area under farming in Kazakhstan's corporate farms shrank by two-thirds. A small portion of the area taken from corporate farms was used to form family farms, but most of the land was simply taken out of use (see Figure 16). Nearly all of this land was for grazing. At the same time, the number of corporate farms in Kazakhstan fell from 7,000 to 4,600, so that the average size of a corporate farm fell from 29,000 to 12,000 hectares. Such farms are still far larger than even the largest categories of farms found in the United States.¹⁶ The average size of a family farm in Kazakhstan in 2002 was 312 hectares.

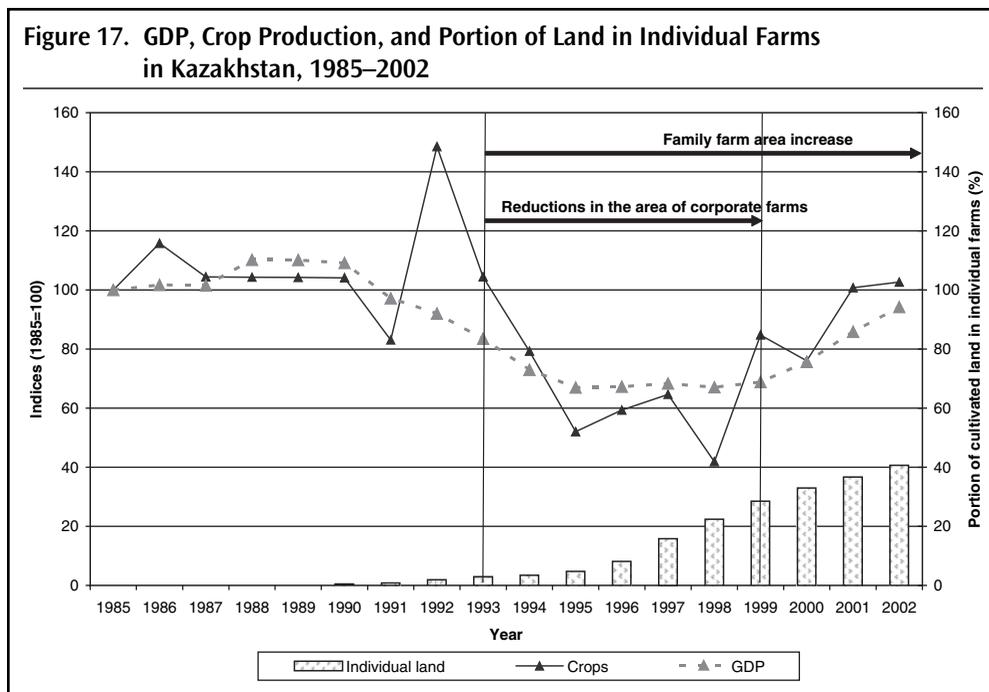


Source: Statistical yearbooks.

The area of land under family farms grew rapidly from 1993 to 1997 but has grown more slowly since then. Still, the combination of reducing the average size of corporate farms and distributing land for family farms has resulted in about 40 percent of cultivated land being in individual farms. The different type of farming in the north and the south meant that the reduction in the size of corporate farms affected mostly the north; family farm formation affected the south. In South Kazakhstan, agriculture is specialized in fruit and vegetable production, and a great deal of manual labor is used. Family farms are concentrated in the southern oblasts of Almaty, Atyrau, East Kazakhstan, Zhambyl, and

16. The U.S. Department of Agriculture's Agriculture Resource Management Study lists "very large family farms" (with gross sales of more than US\$500,000 per year) with an average size of 798 hectares (in 1998) (Hoppe 2001).

South Kazakhstan. The portion of land in those oblasts that was in individual (family and household) farms averaged 69 percent in 2002. In North Kazakhstan, machinery is used to grow crops on large-scale corporate farms. In the north, joint-stock companies and associations replaced collective and state farms. In the northern oblasts of Akmola, Kostana, and North Kazakhstan, the portion of land in individual (family and household) farms averaged only 30 percent.

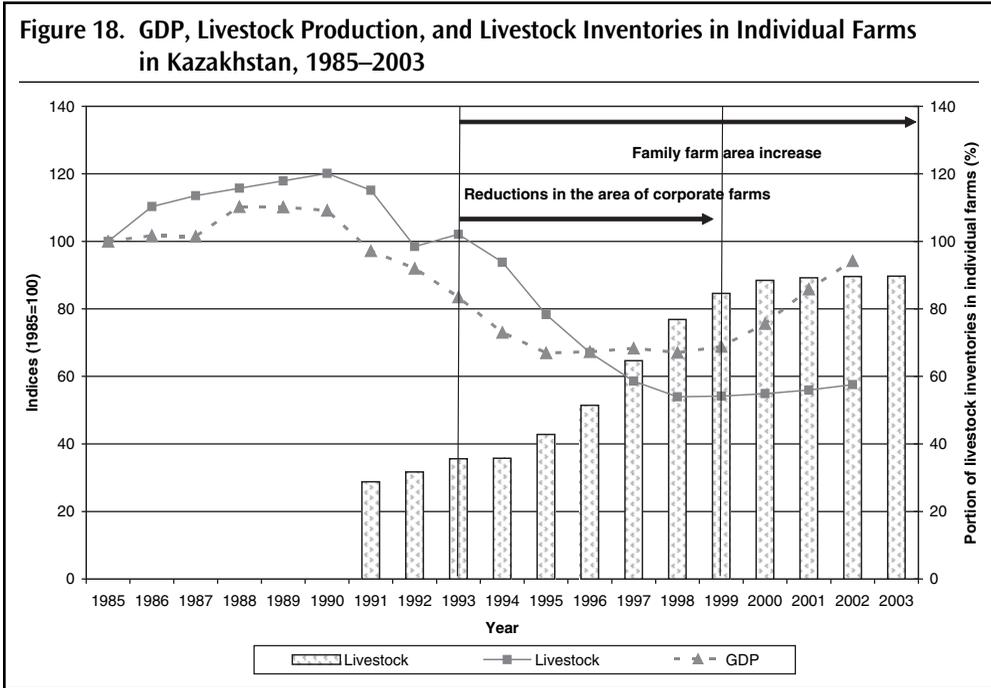


Source: Statistical yearbooks.

Agricultural production in Kazakhstan fell from 1993 to 1998, then rose (see Figures 17 and 18). An important reason for this increase is the simultaneous rise in agricultural prices and GDP after 1999, reflecting the rise in oil prices and the good growth of Kazakhstan’s regional trading partners of the past few years.

Local Government Reforms and Public Service Funding

Kazakhstan is the only one of the four countries considered in this survey that does not have local self-government in rural areas. The Law on Local Public Administration in Kazakhstan of 2001 defined the role of local councils (oblast, raion, and city) and of local executive bodies (oblast, raion, city, and village) as that of implementing state policy on the local territories they served. Oblast or raion local councils are also responsible for receiving, evaluating, and responding to citizens’ demands. Currently, local budgets are supposed to finance local programs such as primary, secondary, vocational, and specialized secondary education,



Source: Statistical yearbooks.

along with most health services. Targeted Social Assistance, the most important antipoverty program, is financed from local budget revenues.

However, as in the other four countries, such mandates of local government are largely unfunded. Localities cannot independently establish tax rates or determine the tax base, with the exception of the land tax. According to the 2001 World Bank Country Assistance Strategy, the system of intergovernmental relations has inadequate formal central coordination and an inefficient tax sharing system. Efforts to decentralize programmatic functions and fiscal capacity have been slow, and the effects of the new election law and the recent election of rural executive bodies are not yet clear. Within the vacuum created by unfunded mandates, large corporate farm managers still exercise a degree of power similar to that of local officials, and many have taken on the role of service provider to workers or communities, where they are described as more powerful than the local appointed hakims.

Disposition of Land Received

The result of land reform and farm restructuring in Kazakhstan has been that by 2002 about 40 percent of land and 90 percent of livestock inventories were in individual farms. As the discussion above indicated, though land shares were distributed widely to rural inhabitants, actual land plots were distributed much more narrowly. Of the households surveyed in the World Bank household farm survey, only 37 percent actually received physical land plots during the land reform (see Appendix A, Table A.3). Those households received on average 49 hectares; the average land received for the entire sample was 18.4 hectares. About

14 percent of households used at least some of the land received themselves, while 16 percent leased at least some of it to large farms, 24 percent of households left some of it unused, and 43 percent left at least some of it for someone else to use without payment.

These results are consistent with the results of other surveys in Kazakhstan. However, findings regarding the number of people who received physical land plots must be interpreted with caution. Extensive discussions on land reform in Kazakhstan and on this and other surveys suggest that there is still much confusion regarding the actual nature of land received by households in Kazakhstan. Some respondents may have thought they received physical parcels rather than land shares. Informal discussions found that many women felt their inferior bargaining power relative to men had caused them to receive more remote or poorer-quality land plots. As in Azerbaijan and despite the gender neutrality of land legislation, women felt less informed and less likely to receive support in pursuing their rights.

Box 7. Land Share Distribution in Akmola Oblast, Kazakhstan

Anna, a local official in Akmola oblast, recounted that when land shares were distributed in 1998, people were asked to “voluntarily” lease them back to the restructured farm. Then representatives came and told the people that it wasn’t voluntary but required, although the representatives didn’t explain why.

For five years the farm management deliberately recorded lower harvests to avoid lease payments. Now people lease land to individual farmers for 50 percent of the harvest. When the five-year contracts were being renewed, Anna again refused to sign a lease and now wants to lease her entire share to a private farmer. It is not clear that the new Land Code will allow her to do this unless she is able to pay for her land shares.

Source: Household interview.

It is surprising in a country where the distribution of land is so skewed in favor of corporate farms that 60 percent of households judged the land reform in Kazakhstan fair. This number is not much different from the numbers in Moldova or Bulgaria (see Appendix A, Table A.10). Of those who did not think the reform fair, the most common reason cited was that rural inhabitants were not informed of their rights. In fact, focus group interviews in Kazakhstan also showed that the land reform process and the rights of land share and land plot owners were unclear to most rural inhabitants. It is possible that this surprisingly positive assessment of the land reform refers to the initial distribution of land rights in the period 1993–96. The initial share distribution was quite egalitarian. Moreover, at the time of the survey in 2004, article 170 of the 2003 Land Code had not come into effect.

Profiles of surveyed households that used and did not use land received through land reform showed that those people who used the land they received actually had lower incomes than those who did not use the land (see Table 7). The differences between the two types of households lie in slightly higher pensions and in considerably higher wage employment in households not using the land received. Even households that did not receive land at all had incomes nearly as high as those that received and used land. This extraordinary result indicates that rural families that do not farm commercially have better opportunities from salary income, which once again demonstrates how the macroeconomic context of increased

Table 7. Monthly Per Capita Expenditure, Perceived Well-being, and Income Composition of Surveyed Households that Use and Do Not Use Land Received during Land Reform

	Households that received land through privatization		*	Households that did not receive land through privatization
	Using land received through privatization	Not using land received through privatization		
Monthly per capita expenditure (T)	6,994.7	8,476.5	*	6,074.6
Perceived well-being (% of households rating today's well-being as high or very high)	40.6	43.7		24.9
Households indicating that well-being improved in preceding three years (%)	43.8	49.5		28.8
Share in total income (%) of				
Total salary from wage employment (cash/in kind)	40.9	50.6		43.7
Value of farm production consumed in the family	20.9	10.7	***	13.4
Sales of farm products	16.4	6.0	***	10.3
Rent/lease payments received (for land and assets)	0.0	1.1		0.0
Total revenue from other private nonfarm business	0.2	2.1		1.3
Pensions	16.3	21.3		24.3
Social assistance	0.2	0.4		3.1
Gifts and remittances	0.3	0.1		0.8
Other	6.1	7.8		4.6

Note: Asterisks mark significant differences between households that use land they received through privatization and households that do not use land that they received through privatization. ***, **, * differences are significant at 1, 5, and 10 percent significance levels. *Source:* World Bank Survey, (2003).

oil revenues translated into higher salaries and a better standard for living, even in the absence of thoroughgoing farm restructuring and equitable land reform.

Economic Performance of Farms

From 1993 to 1997–98, land reform and farm restructuring in Kazakhstan was accompanied by a rise in livestock productivity and a fall in crop yields (see Figure 19). After the initial movements, crop yields began to increase and livestock yields to fall. There are a number of possible explanations for those movements, not the least of which (in the case of crops) is weather. Much of the increase in the corporate farm yields between 1995 and 1999 can

probably be attributed to the fact that corporate farms took much of their marginal land out of production (see Figure 19). Land reform (interpreted as movement of production from corporate to individual farms in Figure 20) also seems to have contributed to the increase in crop yields after 1998. Indeed, yields in individual farms were slightly higher than on corporate farms until about 1998. Starting around 1999, the gap between corporate and individual farm crop yields began to widen as yields on individual farms continued to improve and as those of corporate farms stabilized, once the gains from taking marginal land out of production were exhausted. There is still significant unused potential to be gained by further formation of family farms (see Figure 20).

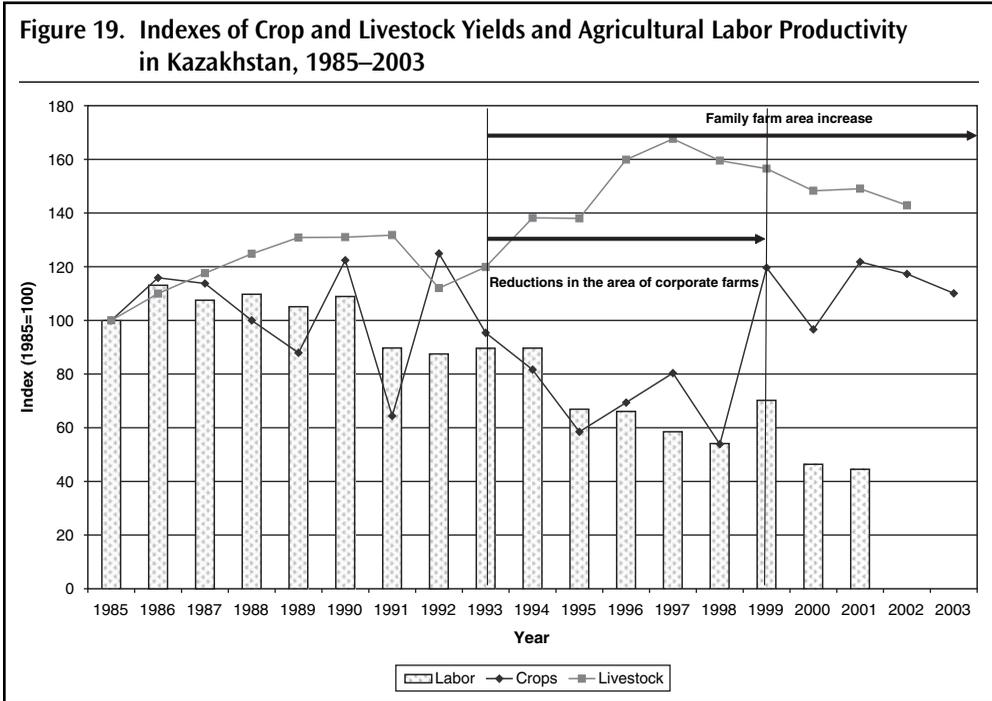
For livestock, the rapid transfer of inventories to individual (family and household) farms seems to have had a quite positive effect on yields, in the face of an overall negative yield trend (see Figure 21). However, movements in livestock yields are difficult to interpret because of the very large changes in livestock inventories during this period. In Kazakhstan, 60 percent of the livestock herd was disposed of between 1993 and 1999. Corporate farms slaughtered, exported, sold, or transferred 90 percent of their inventories during this period, while household and family farms eliminated only 5 percent of their inventories. The final outcome was a dispersion of livestock across a large number of smallholders and family farms, which are largely responsible for the recovery that started after 2000 (World Bank 2005b). The continuous decline in livestock yields can be explained by the lack of public support (marketing, feed, and veterinary services) targeted to the needs of smaller family farms (World Bank 2005b).

Labor productivity figures in Kazakhstan should be used with great caution. The fall in labor productivity in 2000–01 is a result of a change in the definition of agricultural labor, so that those figures are not comparable with the ones that precede them. Still, Kazakhstan shows no indication of the rise in agricultural labor productivity caused by widespread labor shedding in corporate farms that can be found in the Czech Republic and the Slovak Republic. Indeed, the lower production in corporate farms now implies that labor productivity is quite a bit lower than in previous years, just as in the other countries covered in this survey.

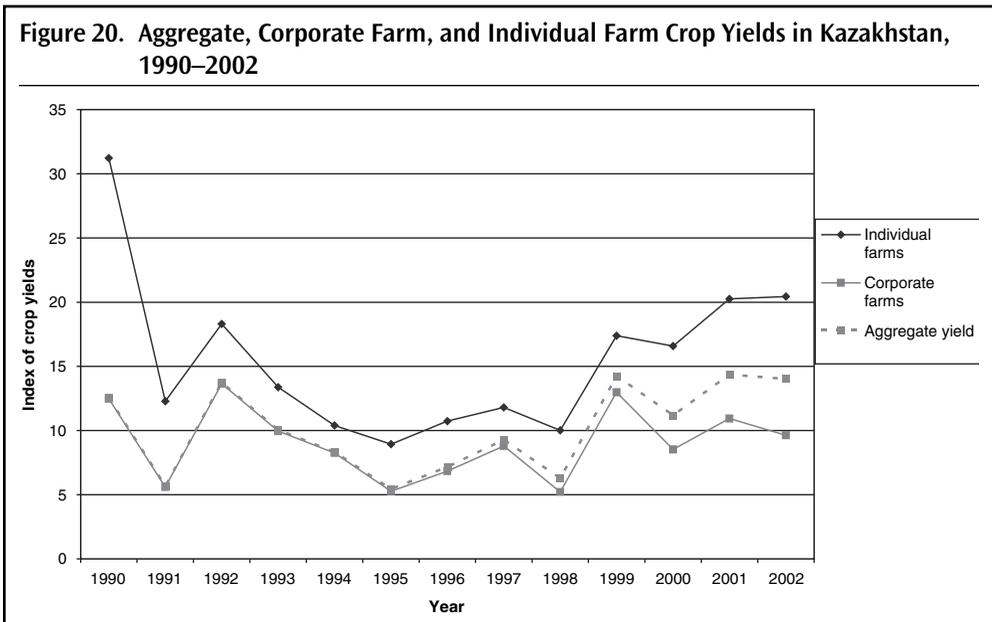
In Kazakhstan, productivity measures for family farms were higher than those for corporate farms in each category measured, except for output per labor unit (see Table 8). Those measurements appear to reflect differences in organizational form, because the sample of farms in Kazakhstan included family and corporate farms of a wide range of sizes (see Appendix A, Table A.5). The measurement of total factor productivity is particularly significant because measurements for the two farm types are statistically different, albeit only at a 20 percent level of significance.

The bankruptcy and buyout process and state policies for corporate farms in Kazakhstan seem to have improved the profit performance of farms. Debt writeoff was a part of the process, and the rise in agricultural prices after 2000 was probably also important. But there is ample qualitative information indicating that much of the profitability of corporate farms is boosted by access to government support and credit programs funded in large part thanks to oil revenues, which indicate at least a partial continuation of the soft budget policies of the past. Even with those supports and subsidies, nearly half of corporate farms remain unprofitable (see Appendix A, Table A.11).

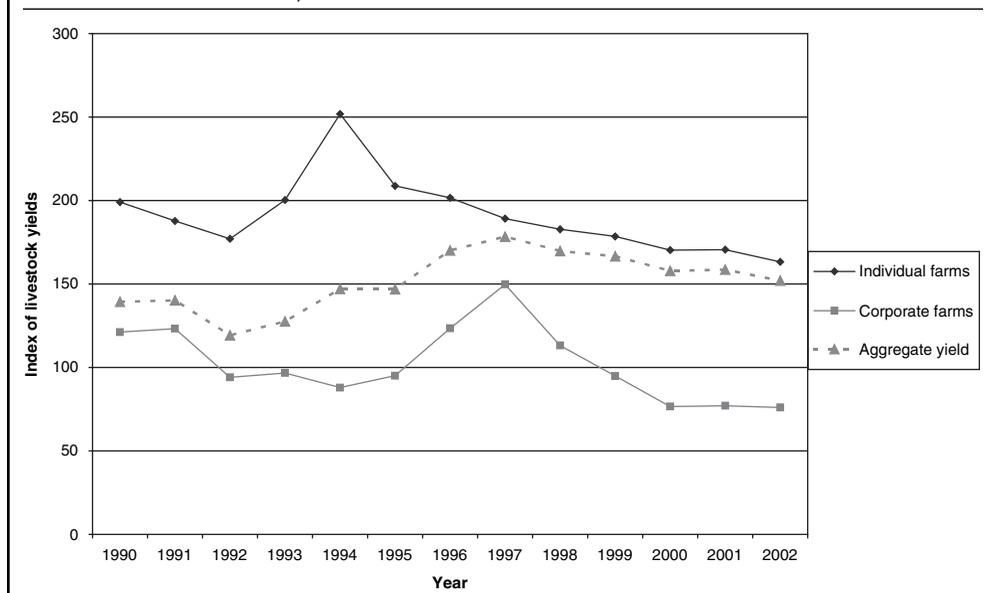
In northern Kazakhstan, there are certainly theoretical advantages to large-scale farms. Large farms—because of their higher sales and profits—can afford farm machinery; they



Source: Statistical yearbooks.



Source: Statistical yearbooks.

Figure 21. Aggregate, Corporate Farm, and Individual Farm Livestock Yields in Kazakhstan, 1990–2002

Source: Statistical yearbooks.

may have scale advantages in marketing and obtaining finance for inputs; and they may facilitate their access to markets and finance by merging with processors or export firms. But all those advantages depend on the ability of large farms to make profits and to reinvest them wisely, unless they are protected by the state from their creditors. The fact that nearly 50 percent of corporate farms in Kazakhstan are unprofitable raises serious doubts about whether the large farms in northern Kazakhstan are actually able to exploit their theoretical advantages of being large while being financially sustainable.

Table 8. Productivity Measures for Farms Surveyed in Kazakhstan, by Type

Farm type	N	Total factor productivity	Labor productivity		Land productivity	
		Output/ total costs	Output	Profit	Output	Profit
			(1,000 LCU)/ AWU	(1,000 LCU)/ AWU	(1,000 LCU)/ ha	(1,000 LCU)/ ha
All farms	200	4.2	767	265	58	33
Family farms	178	4.4	683	268	60	33
Corporate farms	22	2.7	1,446	248	44	28

Note: LCU = local currency units; AWU = average work units. Indicators that are statistically different at the 20 percent or better levels are in bold italics.

Source: World Bank survey of farms (2003).

Well-being of Rural Farming Households

Rural households in Kazakhstan rated their well-being considerably higher than did households in the other countries covered in the survey (see Appendix A, Table A.6). Thirty-one percent of respondent households rated their well-being as high, about twice the percentage of Azerbaijani or Moldovan households when rating their well-being as high. Only 23 percent rated their well-being as low. Moreover, 36 percent of households in Kazakhstan believed that their well-being has improved over the preceding three years, the highest rating of the four countries covered in the survey. Rural household perceptions of their enabling environment are also the most positive of the four countries (see Appendix A, Table A.6). Households in Kazakhstan rated their ease of marketing agricultural production, access to inputs, irrigation, advisory services, veterinary services, and pasture land higher than did households in other countries.

An important difference between Kazakhstan's rural household incomes and the incomes of rural households in the other two Commonwealth of Independent States (CIS) countries is that they seem to be less risky.¹⁷ The key difference between Kazakhstan and the other two CIS countries lies in the significantly higher salary income of rural households in Kazakhstan (see Appendix A, Table A.8).¹⁸ In Kazakhstan, nearly half of household income derives from salaries received from agricultural enterprises or nonagricultural enterprises.¹⁹ This figure is true of all oblasts surveyed (Almaty, Pavlodar, Akmola, and West Kazakhstan), though the highest portion of salary income was reported by households in Akmola (53 percent) and the lowest in Almaty (39 percent). Reported household well-being was highly correlated with the share of salary income in total income. The highest portion of households reporting high well-being (50 percent) was reported in Akmola and the lowest in Almaty (10 percent). Because of the large share of income from salaries in Kazakhstan, sales of farm products as a portion of household income were relatively low and income from pensions was moderate. Here again, the positive macroeconomic effects of the oil boom on the welfare of rural households clearly come into play and likely overwhelm the potential drawbacks from the less than equitable land reform process. Indeed, the oil boom helps generate the demand for labor in rural areas and also exerts upward pressure on wages. Both effects are correlated with the well-being of rural households.

As noted before, farming in Kazakhstan is relatively labor intensive in the south and relatively capital intensive in the north. Perhaps because of the more capital-intensive nature of agriculture in Kazakhstan, it does not seem to have had the influx of labor from other sectors seen in Moldova and Azerbaijan (see Appendix A, Table A.4). However, Kazakhstan's rural households and enterprises rated their enabling environment quite similarly, which is peculiar, if we are to believe that agriculture is capital intensive in Kazakhstan. But the difference may indicate that households in northern Kazakhstan are able to draw on the services of large farms to which they are attached to assist in procurement of services (see Appendix A, Table A.7). Again, the overall macroeconomic context of economic growth

17. Bulgarian rural household incomes are also less risky, though in that country pensions play a greater role in household income.

18. Salaries in farm households were two months in arrears, on average.

19. About 25 percent of income came from nonfarm employment and 25 percent from employment in corporate farms.

is probably the most relevant factor for understanding the heightened sense of well-being among rural households.

Rural Services, Social Benefits, and Community Life

Rural households in Kazakhstan indicated that the level of rural public services has improved substantially since the period before the dissolution of the collective or state farm (see Appendix A, Table A.12). Satisfaction with electricity and gas supplies, in particular, has improved greatly. Access to social benefits has decreased—as is to be expected with a less subsidized economy—with the exception of pensions, which have increased, though not as substantially as in Bulgaria or Azerbaijan (see Appendix A, Table A.13).

Significantly, rural households in Kazakhstan do not feel that access to health care has deteriorated to the degree that households do in Azerbaijan or Bulgaria, although informal interviews revealed widespread variation among communities, even within a single oblast. Those positive perceptions of the level of rural public services are likely to be fueled by the oil revenues, which enable the government to restore or maintain adequate levels of such services in rural areas. However, perceptions of community life—as measured by alcohol consumption, domestic violence, and criminal activity among both adults and youth—have deteriorated, although not as severely as in Bulgaria (see Appendix A, Table A.14). Respondents noted an increase of alcoholism even among women.

Declines in service provision have affected men and women differently. Women were particularly concerned over the widespread closures of kindergartens. Not only has the drastic reduction in access affected children's school readiness, but also it impedes women's ability to participate in the labor market.

Conclusions

As in the other countries surveyed, we cannot separate the contributions of land reform and of farm restructuring to improvements in farm performance in Kazakhstan. Improvements in crop and livestock yields in Kazakhstan since 1993 seem to have been a consequence of a combination of factors, including movement of production to individual farms, which also outperform corporate farms, rising GDP, agricultural prices, and perhaps even improvements in weather. Beyond the issue of performance, though, the Kazakhstan land reform and farm restructuring appears to have achieved some of what land reform has achieved in Moldova and Bulgaria without the dissolution of corporate farms. Some 78 percent of GAO was produced in individual (family and household) farms in 2002 in Kazakhstan. In Moldova, 71 percent of GAO was produced in individual farms in 2002. Ninety percent of livestock inventories were in individual farms in Kazakhstan in 2002, compared with 91 percent in Moldova and about 90 percent in Bulgaria. A bit less land was in individual farms in Kazakhstan in 2002—41 percent—compared with 56 percent in Moldova (in 2002) and Bulgaria (in 2000).

At the same time, the Kazakhstan reform has maintained many of the features of the large farm system, particularly in the northern part of the country—features that made it popular with rural inhabitants. Salaries constitute a higher portion of the income of rural

farming households in Kazakhstan (46 percent) than in Moldova or Bulgaria. About half of this derives from employment in large farms, the other half from nonfarm sources. Compare this with Moldova and Bulgaria, where 33 and 34 percent of income derives from salaries. Kazakhstan's large farms also maintain some of the rural service and social benefit functions that were formerly covered by collective farms, in contrast to those in Moldova and Bulgaria.

The more important underlying reason, however, for positive perceptions of land reform may be Kazakhstan's oil boom, revenues from which helped finance the provision of rural services and allowed the government to continue subsidizing unprofitable large corporate farms in the north. It also raised the overall wage level and demand for labor, so that although land reform deprived people of assets, they entered the labor market with relatively higher wages. The combination of three positive factors that ensure that farm households have access to wage income—rural development, maintenance of the large farm system, and rising wage levels—likely explains why Kazakhstan's farming households do not seem to be more negative about the unequal distribution of land in Kazakhstan or by the lack of government decentralization.

The perceived well-being of Kazakhstan farming households appears to be positively correlated with the share of salary income. Kazakhstan farming households note that the level of rural public services has improved since land reform, particularly the supply of gas and electricity in rural areas. This improvement is in stark contrast to the changes in rural services seen in Azerbaijan, Bulgaria, and Moldova. Both the decline and the level of rural services in Azerbaijan are the worst of those considered here. And although some rural municipal services have improved in Moldova, they have severely deteriorated in Bulgaria.

There are considerable drawbacks to the course of land reform and farm restructuring in Kazakhstan. Nearly half of corporate farms remain unprofitable, and the government supports corporate farms with subsidies and credits. Crop yields on corporate farms stagnate, while those on individual farms continue to improve. An increasing share of agricultural output and, therefore, of agriculture growth comes from family farms. This fact casts doubt on the government claim that maintaining large corporate farms stresses efficiency over equity. Although the share of unprofitable corporate farms in Kazakhstan is actually slightly less than in Moldova, in neither country has farm restructuring solved this problem of corporate farm profitability. Kazakhstan's corporate farms also seem distorted in ways that neither Bulgarian nor Moldovan farms are. In contrast to corporate farms in Bulgaria and Moldova, those farms in northern Kazakhstan are larger than even the largest farms in the United States.

A further drawback to Kazakhstan's approach to land reform and farm restructuring has been that the enabling environment for agriculture seems to be supportive of large farms, though quite a bit less so for small farms. This fact is emphasized by the World Bank assessment that restructuring of government and public institutions to serve the needs of private agriculture is still lacking in Kazakhstan (see Figure 15). Thus, it appears that well-being in Kazakhstan may have improved despite the land reform process, owing in large part to off-farm work opportunities and the quality of service delivery in rural areas that the oil boom helped provide.

General Conclusions and Implications for Policy

This stocktaking has offered a structured and comparative description of much of what is known about land reform and farm restructuring in four countries of the Europe and Central Asia region that have had particular difficulties in land reform, farm restructuring, farm performance, or rural poverty. It has not offered an impact analysis of land reform policies, in recognition of the difficulties of establishing causation. However, even assembled facts and comparisons suggest a number of conclusions, with implications for policy.

Land reform does not seem to have been responsible for the fall in agricultural production and productivity observed in the countries in this survey.

The distribution of land in the three Commonwealth of Independent States (CIS) countries for the most part followed the decline in gross agricultural output (GAO)²⁰ and the deterioration in agricultural yields and labor productivity. In Bulgaria, 33 percent of the decline in production, 50 percent of the deterioration in labor productivity, 17 percent of the decline in crop yields, and the entire decline in animal yields preceded the beginning of land restitution.

In fact, the fall in agricultural production recorded in the CIS countries in the early 1990s seems to be mainly the result of distortions inherited from the previous era. By this is meant the deteriorating collective farm system, elimination of subsidies, price liberalization, and halfway reform. This view is supported by the fact that in each country the beginning

20. In Azerbaijan, one important reason for the fall in agricultural output was the fact that Armenian forces have been present on a significant portion of territory where agriculture and husbandry were practiced.

of the fall in agricultural output coincided with the deterioration of the collective farm system and the fall continued through the period preceding land distribution. In addition to inherited distortions, the general fall in gross domestic product (GDP) during this period and the poor enabling environment for agriculture both contributed to the fall in production. The deterioration of rural services also preceded land distribution, as can be seen in table 6 for Azerbaijan.

The fall in agricultural production before land reform contrasts with the situation of growth in production and productivity in all the countries surveyed, except possibly Bulgaria, after land restitution and distribution. For most indicators and for most countries, performance after land reform began was considerably better than before. In Azerbaijan, there was positive growth in every indicator after land reform began in 1996.

These two facts—that agricultural production began to deteriorate before land reform and that production stabilized and began to grow only after land reform—seem to indicate that land reform is more likely a part of the solution than a part of the problem in those countries. In the absence of land reform, the deterioration in output that characterized the early 1990s might well have continued, because much of the root of the problem was a deteriorating collective farm system. The choice that governments faced in Azerbaijan (in 1996), Kazakhstan (in 1998), and Moldova (in 1998) was not one of the rural “developed socialism” of the Brezhnev era versus land distribution and farm restructuring. It was one of a deteriorating agricultural sector under halfway reforms versus land distribution and farm restructuring. Thus, it is likely that the counterfactual of no land distribution and farm restructuring would have been continued deterioration. It is not surprising that governments chose reform under those circumstances.

Though land reform may potentially contribute to pro-poor growth by increasing farm efficiency and distributing land widely, it is only one of many important complementary reforms and cannot be expected to stimulate sustainable pro-poor growth by itself.

This survey illustrated that the transfer of agricultural production from corporate to individual farms in the three CIS countries contributed to improved sector performance, because yields in individual farms were higher than those in corporate farms. This yield increase rise has been the immediate effect of land reform in those countries, but it does not do justice to the potential of land reform in the long run.

But land reform is not sufficient by itself to ensure better farm performance. In each of the countries considered, a number of complementary policies were identified that shaped the enabling environment for agriculture either positively or negatively. Macroeconomic instability in the early 1990s led to a fall in GDP in each of the countries. For most of the 1990s in Azerbaijan, Bulgaria, and Moldova, agricultural producer prices were significantly below border prices, resulting in missed opportunities for growth. The price differences seem to be a result of government restrictions on trade in agricultural commodities. Falling GDP and low producer prices created a poor environment for growth in agricultural yields or production.

The macroeconomic and enabling environment for agriculture in the countries considered here improved by the mid to late 1990s. Inflation rates fell and GDP began to grow. Internal and external agricultural prices grew closer. In Bulgaria, both the macroeconomic and the enabling environment improved after 1997–98. In Moldova, the macroeconomic

record improved after 2000, but the enabling market and public support for agriculture is still poor. In Azerbaijan, the macroeconomic environment improved after 1996, though the enabling environment for agriculture remains poor. In Kazakhstan, the macroeconomic environment improved after 1996, but the enabling environment for agriculture has improved mostly for large farms. The favorable macroeconomic environment stemming from the oil boom is having a large, positive effect on the well-being of rural households that likely more than compensates for the incomplete land reform.

None of the governments of the countries covered in this survey have met the challenge of ensuring a truly good and sustainable enabling environment for agriculture to ensure that farms will be competitive in world markets. Bulgaria has gone the furthest in ensuring an enabling environment for agriculture. However, there is no evidence to indicate that Bulgarian corporate farms have been forced to reduce labor rolls in order to reduce costs of production, as can be observed in the competitive corporate farms of Central Europe. In Azerbaijan and Moldova, producers seem to be taxed by internal and external trade barriers and by ad hoc interventions by the government in agricultural markets. In Kazakhstan, enabling policies seem to favor large farms over small.

The lack of a sustainable enabling environment for agriculture in the CIS countries has two sides. First, governments have failed to take steps toward restructuring government and public institutions to serve the needs of private agriculture. For small farms, increasing competitiveness is often connected with increasing size to that of midsize farms, increasing nonlabor inputs, new technology, and better management methods. For large farms, improvements in competitiveness usually concern reductions in staff or farm size, introductions of nonlabor inputs or new technology, and better management methods.

Government policies should facilitate the changes by ensuring that land lease markets operate easily, that farmers have access to advisory support services and finance, that farms operate in a competitive environment where there is a credible threat of bankruptcy, that soft budgets are eliminated, and so on. Rural development policies—such as maintenance of rural public services, pensions, safety nets, and infrastructure, as well as support to small and medium businesses—are important in order to make rural areas better places to live and do business.

Second, government policies should instead aim to support farm enterprises directly with loose credits or state support, by eliminating the possibility of bankruptcy, by setting restrictions on marketing, and by establishing employment policies. Those policies usually concern corporate and large farms because they are the most visible and have the most employment and because their managers often have close links to government. Such farms themselves usually lobby for such support.

In the Czech Republic, Hungary, and the Slovak Republic, many corporate farms have improved their performance, so that they perform as well as family farms. However, this achievement required a sustained policy environment of complementary reforms that are quite challenging for governments, particularly in CIS countries. Perhaps three complementary reforms have facilitated better performance of corporate farms in those countries. First, there seems to have been a true break with soft budget policies, so that the government does not favor large corporate farms with subsidies, easy credit programs, marketing restrictions, bankruptcy policies, or other special treatment.

Second, in the Czech Republic and the Slovak Republic are expensive rural pensions and unemployment programs to support agricultural labor laid off from large corporate farms.

The nonfarm income sources offer an incentive both to leave farming and to compensate for earnings when workers are laid off. This is why labor can be shed from corporate farms in the countries without local authorities and former workers raising havoc.

Third, corporate farms in these countries are interested in reducing costs of production in order to remain competitive because they have no choice. They must compete on European markets with Western European producers that have low costs of production or they do not survive. Even before the Czech Republic and the Slovak Republic were part of the European Union, both the governments and corporate farm managers knew accession was coming and farms adjusted their behavior to these circumstances.

The complementary reforms have proven difficult to reproduce in the CIS countries and other poor countries, particularly if they are not in line for European Union (EU) accession. At present, they do not seem very realistic for some of the countries covered in this survey. In Bulgaria, the soft budget condition, the competition condition, and the pension and social support condition seem to be real possibilities, though they have perhaps not been realized to the degree they have in the Czech Republic. In Moldova, the soft budget condition seems to have been fulfilled to some extent, though neither the pension and social support condition nor the competition condition has been met.

In Kazakhstan, none of the three conditions seem to have been met. Because the government does not facilitate the kind of changes that corporate farms require to increase their competitiveness, there are reasons to believe that corporate farms there will not perform as well as do family farms. In fact, the World Bank survey showed that in Kazakhstan, as well as in Azerbaijan, the total factor productivity of family farms was consistently higher than that of corporate farms. Total factor productivity and profitability are better overall indicators of performance than yields, because they better measure the ability of the farm to control costs. Better performance of the agriculture sector in those countries depends both on changing government policies toward corporate farms and on the continued formation of midsize family farms in such countries. In Kazakhstan, both types of policies are needed. The conditions are not met in Azerbaijan either. The corporate farm sector in Azerbaijan is quite small, however, so the emphasis in that country should be on facilitating the formation of midsize family farms.

In Bulgaria and Moldova, much more progress has been made on complementary reforms, though the countries have certainly not enacted the same policies as in the Czech Republic and the Slovak Republic. There is, therefore, reason to believe that differences in the performance of corporate and family farms caused by government policies may not be important in those countries. Unfortunately, evidence from the World Bank farm survey on total factor productivity in the countries was inconclusive.

The predominant farming technology is also of critical importance for the ability of land reform to foster pro-poor growth.

We know from the experiences of China and Vietnam that land reform by itself can have a major effect on productivity and incomes, in particular in economies with labor-intensive farming and where land is a relatively scarce commodity (Rozelle and Swinnen 2004). The shift to individual farms can yield substantial incentive benefits and better labor governance that outweigh the relatively modest losses in scale economies. The effects are most likely to emerge if land is given in kind in clearly delineated plots to rural households. Those factors drove the rapid gains in productivity in countries such as China and Vietnam and later in Albania.

The documented results of land reform lead us to believe that the same factors should apply in Azerbaijan, Moldova, and southern Kazakhstan. In labor-intensive agricultural systems, such as in Azerbaijan and Moldova, there are important equity benefits to land distribution as well, because employment in agriculture is typically nearly universal and because the egalitarian distribution of land, therefore, creates widespread benefits to the rural, often poor, population.

In less labor-intensive agricultural systems, such as Bulgaria and northern Kazakhstan, the incentive gains of individual farming are still important but economies of scale are also key. There are large efficiency costs to the fragmentation of farm holdings, and the lack of access to finance and capital technology of small-scale farming is more costly in such an environment. Hence, privatization of land by itself may not result in strong and widespread rural income growth.

In the absence of mitigating factors, the privatization of farms in less labor-intensive agricultural systems should also have different equity results. The potential gains from mechanization should induce privatized large farms to gain efficiencies by laying off surplus workers, as was the case in Central Europe. The layoff of low-skilled farm workers will cause extensive rural unemployment and increase rural poverty, unless there is either a strong social welfare system—as in some countries in Central Europe—or alternative employment. In countries such as the Czech Republic and the Slovak Republic, restitution worked relatively well because in those countries fewer people were still employed in agriculture and the countries were much richer.

Bulgarian land restitution falls between the path of the labor-intensive land-distribution model of poorer countries and the capital-intensive, high-social security model of Central Europe. In rural areas, restitution allocated land to older households, which were least able to start up large-scale family farms and which had few opportunities for alternative employment. Without significant welfare benefits or alternative employment, the income and poverty problems of the rural population in Bulgaria were particularly bad, because a number of unemployed rural households did not have access to land. Hence, in such an environment, the availability of alternative employment opportunities is crucial. In those conditions, the most dynamic and able migrated to the cities, thus leaving the countryside disproportionately populated by older and low-skilled people.

In many countries, including Kazakhstan, the Russian Federation, and Ukraine, there are mitigating factors that often prevent privatized large farms from gaining efficiencies by laying off surplus workers. Those factors may be explicit or implicit state (central or local) policies to prevent rural unemployment; rent seeking by large farms, which encourages them to maintain large numbers of employees; and a sense of community obligation by management to maintain employment or soft budget constraints, to name a few. The policies are not absolute. There are corporate farms in each of the countries that have restructured, improved their performance, shed workers, and incorporated new capital and management, often as a result of being bought out or taken over by outside owners. However, we found no evidence in Kazakhstan of the widespread labor shedding that took place in Central European corporate farms and that is a key indicator of substantial farm restructuring.

Northern Kazakhstan, therefore, provides a model of land reform that is slightly different from the one found in Central Europe and Bulgaria. In Northern Kazakhstan, there would be large efficiency costs to fragmented farms, because such farms would encounter significant problems related to access to finance, capital, and marketing channels. Those

added difficulties in such an environment argue for the importance of larger farms that are vertically coordinated with processors and traders in order to ensure such access.

In Kazakhstan, the issue of scale economies is used to justify and support the maintenance of vertically coordinated corporate farms that are far larger than such considerations would merit—many of which operate at a loss. An average corporate farm in Kazakhstan in 2002 was 12,000 hectares, far larger than the largest farms in the United States (798 hectares). Farms of such size would normally be expected to suffer from extreme diseconomies of scale connected with difficulties of governance. This hypothesis seems to be borne out by the profit and technical performance of such farms. The subsidies available to such farms address the effects of poor performance rather than the causes. Moreover, they tend to create a problem of moral hazard that would not seem to improve performance.

We also learned from the Chinese land reforms that it is not necessary to have full privatization of land to get important efficiency gains. In both the Chinese and Vietnamese land reforms, use rights were allocated individually through lease contracts, which was sufficient to ensure large incentive effects. In contrast, in most CIS countries under share privatization use rights were not linked to specific plots of land. This key difference in the land share allocation system allowed those in charge to abuse land reform and contributed to a very unequal structure of land ownership. Though most CIS countries have moved away from share privatization, those that did not distribute land widely continue to maintain a highly unequal pattern of land distribution. In Kazakhstan, for example, nearly 60 percent of farm land is locked into corporate farms, many of which would probably not be financially viable in a less administratively controlled economy.

Raising the welfare of rural residents is about raising labor productivity, . . .

It is well known that there is a strong negative correlation between, on the one hand, the share of the labor force employed in agriculture and, on the other, GDP and rural incomes. The agricultural transition is about how rural incomes and GDP increase as agricultural employment decreases. Survey data on the disposition of land suggest that key factors in raising rural incomes are nonfarm employment opportunities and rural pensions. Not only do these factors provide additional income to rural farming households, but they also tend to reduce agricultural employment. The macroeconomic story also matters, as evidenced by the impact of Kazakhstan's oil boom on government revenues, and the consequent positive impact on consumer demand, increased wages, resumption of rural services, and rural perceptions of well-being.

Information on changes in income and nonincome measures of well-being of households in Azerbaijan suggests that households assess their well-being by considering more than income. For instance, Azerbaijan had the best sector performance of any of the countries considered. Yields improved, production increased, and rural poverty fell. However, households were quite pessimistic (compared with those in other countries) about changes in their well-being, with only 18 percent of them believing that well-being had improved over the preceding three years. One key to this disparity is the substantial deterioration in rural services in Azerbaijan compared with services in urban areas. Another apparent reason is that fully 66 percent of incomes in Azerbaijani households derived from farming and only 11 percent from wage employment. This portion of income from farming is a considerably higher portion than that found in the other countries. This risk aversion may explain

why households prefer to maintain employment in large farms, instead of becoming commercial farmers themselves. It is also why the creation of nonfarm employment in rural areas is so important.

. . . the predominant farming technology . . .

The propensity of households to farm their land also appears to depend on the labor intensity of the farming environment. In labor-intensive agricultural environments, those households that farmed land received during land reform earned higher incomes. Thus, in Azerbaijan and Moldova, most households farmed at least some of the land they received. In less labor-intensive farming environments such as Bulgaria or northern Kazakhstan, however, pensions and nonfarm income seem to play a greater role.

In Kazakhstan, where those who did not farm land had large salary income that more than compensated for sales of agricultural products, families that used land actually had lower overall incomes on average. In Bulgaria, pensioners could do nearly as well by collecting their pensions and leasing out their land as by farming the land received from land restitution. We did not control for other factors in making this judgment, so it is not robust. However, it certainly suggests that rural pensions and nonfarm employment opportunities are key factors for agricultural policy in these countries.

. . . and rural services.

In this survey of land reform and farm restructuring, it has been shown that the deterioration of the collective farm system also implied a deterioration of rural public services. The renovation of those services depends critically on the establishment of financially viable local government. No country has solved the problem of public funding for local government. In general, although the experience of both industrial and transition countries is that local rural services cannot be supported by local taxes, no country has been able to develop the political will within the government to make rural development and maintenance of rural services a high priority. Certainly, this area is where donors could assist in setting up working institutions of local government. However, the operation of local government is something that cannot be carried out by donors. A need must be felt within the government for development of this matter, something which seems to have yet to occur.

Thus, raising the welfare of rural residents requires assistance from the government in the form of rural development, rural pensions, and social support.

In addition to ensuring an enabling environment for private agriculture, if the government is interested in raising the welfare of rural residents, one of its roles should be to assist the transition from high-employment, low-wage agriculture to low-employment, high-wage agriculture. This change can be done through rural development, rural pensions, social support for those shed from corporate farms, and other social services. It could also be accomplished by assisting young people in acquiring skills for alternative employment. Kazakhstan clearly illustrates the significance of government support for rural development, pensions, and social support for the welfare of rural residents, even when the enabling environment for private agriculture is weak.

Legislation and procedures that appear gender neutral because they do not make a distinction between the rights of men and women may, nevertheless, affect men and women in very

different ways, given how traditional gender relations and stereotypes affect access to information, resources, and power. Thus, legislation as well as administrative procedures for establishing rights may need to involve special outreach to women. . . .

Female-headed households in each of the countries surveyed used less land, had lower perceived well-being, and were more likely than male-headed households to believe that their well-being had deteriorated in the preceding three years. Though female-headed households owned about the same amount of land as male-headed households in all countries, they were likelier than male-headed households to rent out land; on average, they used significantly less of the land received from privatization than did male-headed households.

It is not completely clear why such differences exist, but qualitative interviews suggest that although formal legislation and procedures are largely gender neutral in all four countries, women's access to information and legal recourse is substantially less than men's. Likewise, female-headed households may be less well positioned to use land beyond the household plot for a combination of reasons: less labor power, less access to heavy equipment, and heavier household responsibilities. The deterioration of rural service provision has increased the responsibilities that women have for child and elder care, thereby increasing their domestic workload and making it harder for them to enter the labor market.

Thus, if women are to benefit from growing opportunities in farm and off-farm opportunities, governments will have to pay attention to providing adequate social services, thereby reducing some of the barriers that women, in particular, experience.

Four-country Tables and Figures

Table A1. Six Components of Governance, 1996, 1998, 2000, and 2002

Country	Income category	Data set	Voice and accountability (percentile rank)	Political stability (percentile rank)	Government effectiveness (percentile rank)	Regulatory quality (percentile rank)	Rule of law (percentile rank)	Control of corruption (percentile rank)
Azerbaijan	Low income	2002	19.2	18.4	13.9	22.2	24.2	9.8
		2000	24.6	25.5	17.4	33.0	11.9	6.5
		1998	19.9	25.5	22.4	13.0	20.5	5.5
		1996	18.8	26.8	10.6	9.4	18.1	16.7
Bulgaria	Lower middle income	2002	66.7	64.3	56.2	69.6	56.7	52.6
		2000	63.4	57.6	50.5	56.2	57.8	54.9
		1998	61.8	61.8	12.0	65.8	53.0	39.9
		1996	58.1	54.9	35.8	45.3	56.0	29.3
Kazakhstan	Lower middle income	2002	17.7	62.2	21.6	24.2	18.6	10.8
		2000	20.9	58.2	32.1	26.5	23.2	19.0
		1998	28.8	57.0	23.5	32.1	21.6	13.1
		1996	20.9	45.7	17.3	34.8	24.7	22.7
Moldova	Low income	2002	40.9	40.5	30.4	49.5	39.2	21.6
		2000	52.4	43.6	13.0	12.4	38.4	19.6
		1998	49.7	47.3	31.1	31.0	55.1	38.3
		1996	44.5	37.2	32.4	53.6	48.8	50.7
Czech Republic	Upper middle income	2002	74.7	84.9	73.7	82.0	73.2	68.6
		2000	77.0	77.6	75.0	75.7	73.0	72.3
		1998	83.2	81.2	80.3	76.1	73.5	73.2
		1996	79.6	85.4	81.6	86.7	73.5	77.3

Source: Kaufman, Kraay, and Mastruzzi (2003). Percentile rank indicates the percentage of countries worldwide that rate below the selected country.

Table A2. Age Structure of Rural Population in Countries Surveyed

Country	Share of rural population of retirement age (%)	Year
Azerbaijan	9	2000
Kazakhstan	11	1998
Moldova	18	2001
Bulgaria	28	1999

Source: Statistical Committee of the CIS (2003b); Agentstvo Respubliki Kazakhstan po Statistike (1999); Department of Statistics and Sociology of the Republic of Moldova (2002); OECD (2000).

Table A.3 Disposition of Land in Surveyed Households

	Azerbaijan	Bulgaria	Kazakhstan	Moldova
Received land during land reform (%)	98.01	60.34	37	94.78
Amount of land received during land reforms (ha)	2.03	1.56	18.37	2.31
Total amount of land owned (ha), of which	2.21	1.62	22.54	2.51
Household plot near house (ha)	0.23	0.05	0.09	0.17
Household plot in different part of village (ha)	na		0.07	na
Farming land (physical plot; ha)	1.96	1.56	na	0.25
Land represented by land share of former kolkhoz or sovkhoz farm (ha)	na		18.37	1.94
Conditional land share (ha)	na		3.83	na
Other (ha)	0.01	0.01	0.19	0.15
Total amount of land used (ha), of which	2.59	1.68	1.72	1.51
Privately owned land (bought or inherited; ha)	1.71	1.43	1.40	1.23
Leased land (ha)	0.75	0.14	0.24	0.06
Household plot (ha)	0.22	0.05	0.08	0.20
Land used that is not owned or leased (ha)	0.02	0.00	0.00	0.00
Other arrangements (ha)	0.00	0.07	na	0.01
Use of land received during land reforms (% of households)				
Use it myself	81.66	37.92	14.41	97.46
Leased it out to large farm enterprise	1.02	23.88	15.77	37.71
Leased out to cooperative	na	42.13	na	na
Use it jointly with the cooperative/ farm enterprise	na	8.99	na	na
Leased it to other entity or individual	8.88	na	0.45	0.85
Left it unused	16.3	8.43	23.87	1.27

(continued)

	Azerbaijan	Bulgaria	Kazakhstan	Moldova
Left it for someone else to use it without payment	0.58	2.81	43.24	0.21
Sold it	0.44	4.49	2.7	0.85
Other	0.15	0.84	1.8	0
Leasing land in (%)	4.27	3.53	10.5	4.21
Leasing land out (%)	9.53	40.5	6	38
Land allocation fair (%)	91.75	56.47 ^a	59.83 ^a	53.11

Source: World Bank survey of farms (2003).

Note: na = not applicable. a. 23.4 percent of Bulgarian and 5.5 percent of Kazakhstan households did not answer this question.

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Azerbaijan	32	35	32	32	31	32	29	42	42	41	40
Bulgaria	20	21	22	23	24	24	25	26	26	26	26
Kazakhstan	23	24	25	22	22	21	24	22	22		
Moldova	42	40	43	46	—	43	42	46	49	51	51
Estonia	20	19	17	15	11	10	9	9	8	7	7
Hungary	16	11	9	9	8	8	8	8	7	7	6
Czech Republic	10	8	8	7	7	6	6	6	5	5	5
Slovak Republic	13	12	12	10	9	9	9	8	7	7	6

Source: World Bank 2004b.

Table A5. Productivity Measures for Farm Enterprises Surveyed, by Size Category								
Country	<5	<10	10–50	50–100	100–200	200–500	>500	All
<i>Azerbaijan</i>								
Observations (N)		17	26	10	9	12	6	80
Of which: Family farms		13	22	10	7	9	4	65
Of which: Corporate farms		4	4	0	2	3	2	15
Output per AWU (1,000 LCU)		4,641	6,473	5,015	19,686	3,689	7,298	7,032
Output per ha (1,000 LCU)		3,227	1,384	1,548	1,920	237	110	1,589
Value of agriculture production to total costs		2.1	1.8	1.6	2.9	2.1	2.3	2.1
<i>Kazakhstan</i>								
Observations (N)		22	22	12	35	52	57	200
Of which: Family farms		22	18	11	34	48	45	178
Of which: Corporate farms		0	4	1	1	4	12	22
Output per AWU (1,000 LCU)		163	400	359	505	1,081	1,102	767
Output per ha (1,000 LCU)		242	152	68	21	17	10	58
Value of agricultural production to total costs		5.1	3.2	4.0	4.0	4.6	4.0	4.2
<i>Moldova</i>								
Observations (N)	133	26	21	2	4	6	8	200
Of which: Family farms	129	26	20	1	0	0	0	176
Of which: Corporate farms	4	0	1	1	4	6	8	24
Output per AWU (1,000 LCU)	13	12	15	3	32	11	20	13
Output per ha (1,000 LCU)	20	8	6	1	3	4	3	15
Value of agricultural production to total costs	7	3	2	2	2	2	1	5
<i>Bulgaria</i>								
Observations (N)		15	7	2	4	8	21	57
Of which: Family farms		15	6	2	0	0	0	23
Of which: Corporate farms		0	1	0	4	8	21	34
Output per AWU (1,000 LCU)		6	17	8	8	16	46	24
Output per ha (1,000 LCU)		4.34	1.91	0.37	0.37	0.47	0.58	1.69
Value of agricultural production to total costs		4.1	1.2	1.1	2.0	11.2	5.2	4.9

Source: World Bank survey of farms (2003).

Note: AWU = average work unit; LCU = local currency unit.

Table A6. Farming Household Perceptions of Enabling Environment and Well-being				
Variable	Azerbaijan	Bulgaria	Kazakhstan	Moldova
<i>Perceived enabling environment for farming</i>				
Combined rating (0: very bad; 100: very good)	39.65	32.07	49.18	47.40
Today: Perceived ease to ... (0: very difficult; 100: very easy)				
Market agricultural produce	42.28	29.30	52.94	42.72
Purchase land	34.00	28.05	37.15	45.75
Sell land	40.58	34.08	41.07	49.75
Rent in land	38.62	33.48	45.36	50.50
Lease out land	43.10	45.31	45.44	50.75
Access inputs (seeds, fertilizer, pesticides)	29.62	38.87	56.72	54.36
Access agricultural equipment	30.73	30.12	50.08	52.70
Access satisfactory irrigation	36.52	21.74	47.95	15.10
Access satisfactory advisory services	46.59	35.24	57.85	56.26
Access veterinary services	50.89	44.07	68.48	59.92
Access pasture land	54.02	32.76	58.78	50.60
Access a loan for farm investments	28.84	11.50	28.59	40.50
<i>Perceived level of well-being</i>				
Current level of well-being (%)				
High	14.08	5.71	30.83	14.40
Medium	64.58	25.71	46.33	50.20
Low	21.34	68.57	22.83	35.40
Change in perceived level of well-being over previous three years (%)				
Improved	17.64	9.92	36.17	28.60
Unchanged	78.52	54.45	36.5	48.20
Deteriorated	3.84	35.63	27.33	23.20

Source: World Bank survey of farms (2003).

Ease to	Azerbaijan		Bulgaria		Kazakhstan		Moldova	
	Household	Enterprise	Household	Enterprise	Household	Enterprise	Household	Enterprise
Market agricultural produce	42	55	29	42	53	56	43	47
Purchase land	34	33	28	52	37	41	46	51
Sell land	41	62	34	40	41	38	50	51
Rent land	39	44	34	59	45	53	51	57
Lease out land	43	67	45	46	45	49	51	53
Access inputs (seeds, fertilizer, pesticides)	30	60	39	59	57	48	54	56
Access agricultural equipment	31	48	30	55	50	45	53	60
Access satisfactory irrigation	37	55	22	29	48	51	15	10
Access satisfactory advisory services	47	72	35	59	58	61	56	57
Access a loan for farm investments	29	28	12	26	29	46	41	44
Average	37	52	31	47	46	49	46	49
Correlation coefficient between household and farm enterprise rating	0.69		0.69		0.62		0.99	

Source: World Bank survey of farms (2003).

Note: Index between 0 and 100, 0 = very difficult; 100 = very easy. Values less than or equal to 33 are in bold. Farm enterprises include family farms and corporate farms.

Share in total income (cash and in kind)	Azerbaijan	Bulgaria	Kazakhstan	Moldova
Total salary from wage employment	10.6	34.0	45.7	32.7
Value of farm production consumed in the family	27.4	8.9	12.9	18.5
Sales of farm products	36.3	4.9	9.2	21.7
Rent or lease payments received (for land and assets)	0.4	3.1	0.3	3.7
Total revenue from other private nonfarm business	2.2	2.6	1.5	1.6
Pensions	14.1	32.0	22.9	13.6
Social assistance	1.4	9.3	2.1	1.0
Gifts and remittances	0.7	2.2	0.6	4.1
Other	6.9	2.7	5.7	3.8

Source: World Bank survey of farms (2003).

Table A9. Sociodemographic Profiles of Households Reporting Low and High Perceived Levels of Well-being

Variable	Azerbaijan			Bulgaria			Kazakhstan			Moldova						
	Low	High	Stat. sign.	Low	High	Stat. sign.	Low	High	Stat. sign.	Low	High	Stat. sign.				
Share in sample (%)	21.34	64.58	***	68.57	5.71	***	22.83	30.83	***	35.40	14.40	***				
Household size (number of individuals)	5.03	4.82		3.53	4.06	*	3.78	4.08		3.60	3.68					
Age of household head (years)	53.27	54.30		56.24	51.24	*	51.93	47.74	***	51.53	48.63	*				
Higher-educated household heads (%)	8.00	18.18	**	1.96	8.82	***	8.76	22.7	***	12.43	34.72	***				
Female-headed household heads (%)	22.00	12.12	**	15.20	17.65	***	37.96	17.84	***	18.08	11.11	**				
Ethnic group (%)	Azeri	50.00	75.76	***	Bulgarian	71.67	100.00	***	Kazakh	49.64	68.11	***	Moldovan	92.66	88.89	
	Russian	0.00	0.00		Turkish	6.65	0.00		Russian	32.85	27.57		Ukrainian	4.52	2.78	
	Talysh	46.00	19.19		Roma	20.44	0.00		Ukrainian	5.84	1.08		Russian	0	0	
	Tat	1.33	1.01		Other	1.23	0.00		German	1.46	1.08		Gagauz	0.56	0	
	Lezgi	2.67	4.04						Tatar	1.46	1.08		Other	2.26	8.33	
									Belorussian	2.19	0					
									Uigur	4.38	0					
								Other	2.19	1.08						
Region (%)	Northeast	29.33	37.37	***	Pleven	35.54	32.35	***	Almaty	43.07	10.27	***	Cahul	18.64	26.39	***
	Central	9.33	21.21		Plovdiv	28.92	58.82		Pavlodar	28.47	15.68		Floresti	27.68	18.06	
	Southeast	50.00	20.20		Dobrich	35.54	8.82		Akmola	4.38	50.27		Nisporeni	10.17	36.11	
	Northwest	11.33	21.21						West Kazakhstan	24.09	23.78		Orhei	40.68	12.5	
												Taraclia	2.82	6.94		

Source: World Bank survey of farms (2003).

Note: Stat. Sign. = statistical significance, ***, **, * differences are significant at 1, 5, and 10 percent significance levels. AWU = annual working units.

Table A10. Portion of Households Perceiving Land Allocation as Fair and Reasons for Unfair Land Allocation				
	Azerbaijan	Bulgaria	Kazakhstan	Moldova
Land allocation was fair (% of households)	91.8	56.5 ^a	59.8 ^a	53.11
<i>Reasons for unfair land allocation (% of responses from households that considered it unfair)</i>				
Parcel was smaller than it should have been	19.3	5.1	5.7	9.6
Parcel was smaller than others received	11.4	na	5.4	9.0
Parcel is of poorer quality than others received	20.5	na	5.4	12.7
The process cost more than it should have	14.8	7.4	10.8	3.1
I was not fully informed of my rights	11.4	11.6	27.6	15.3
The titling officials were not available or willing to answer questions	6.8	4.2	15.7	18.8
Plot received for cultivation does not correspond to the parcel for which I have ownership rights as documented in land title	2.8	13.0	6.2	5.8
The restitution of land in real borders fragmented the land and now it is more difficult to sell and lease	na	30.7	na	na
Land fragmentation	na	na	na	12.5
Parcel is of poorer quality than it should have been	na	24.2	na	na
Authorities took good land	na	na	7.3	na
Our household or many people have not received land	na	na	8.4	5.5
Other	13.6	3.8	7.3	6.8

Source: World Bank survey of farms (2003).

Note: na = not applicable.

a. 23.4 percent of Bulgarian and 5.5 percent of Kazakhstan households did not answer this question.

Table A11. Profitability of Agricultural Enterprises in Azerbaijan, Kazakhstan, and Moldova, 1990–2002

	1990	1994	1995	1996	1997	1998	1999	2000	2001	2002
<i>Azerbaijan</i>										
Percent unprofitable	7.9	32.0	47.0	62.1	75.0	86.7	70.5	52.5	35.7	29.0
Profitability, all products	31.6	8.9	-4.7	-17.8	-43.4	-40.7	-26.4	-14.6	1.1	1.4
Profitability, crops	41.3	18.1	3.2	-7.7	-44.4	-39.5	-20.9	-7.0	14.7	17.8
Profitability, livestock	3.3	-25.2	-36.8	-41.2	-47.4	-51.6	-43.4	-23.2	-5.7	-3.1
<i>Kazakhstan</i>										
Percent unprofitable			78.5		72.4	78.5	49.5	51.6	51.9	48.9
Profitability, all products			-23.5		-20.9	-25.7	14.6	19.8	14.6	7.0
<i>Moldova</i>										
Percent unprofitable			28.0	67.0	46.0	91.0	72.0	56.0	57.0	
Profitability, all products			11.2	-10.3	0.1	-40.1	-20.6	-9.7	-3.6	
Profitability, crops			8.8	1.4	3.3	-18.4	16.3	22.8	19.5	
Profitability, livestock			-33.0	-39.4	-42.3	-28.7	-19.3	-6.7	9.4	

Sources: State Statistical Committee of the Republic of Azerbaijan (2003); Agentstvo Respubliki Kazakhstan po Statistike (2003); Department of Statistics and Sociology of the Republic of Moldova (2003).

Table A12. Households' Level of Satisfaction with Provision of Electricity, Gas, Drinking Water, Telephone

Present level of satisfaction ^a with service	Azerbaijan		Bulgaria		Kazakhstan		Moldova	
	Before ^b	Today						
Electricity	84.1	43.7*	91.9	71.6*	68.1	86.2*	73.0	79.0*
Gas	18.4	3.5*	30.6	33.4	65.2	78.5*	35.7	37.7
Drinking water	68.9	66.7	89.6	75.7*	70.0	72.6	42.5	38.6
Telephone	25.8	30.2*	79.6	65.3*	48.2	55.0*	35.4	50.8*

Source: World Bank survey of farms (2003).

Note: An asterisk behind the value in the "Today" column indicates that the satisfaction levels before and today are statistically significant at the 10% level.

a. Level of satisfaction is expressed on a scale from 0 to 100 (0 = not available at all; 100 = always available in satisfactory quality or reliability).

b. "Before" means before the dismantling of the sovkhos (state farm) or kolkhoz (collective farm).

Percentage of households benefiting from	Azerbaijan		Bulgaria		Kazakhstan		Moldova	
	Access before ^a	Access now						
Compensation for price increases	1	0	27	22	1	1	1	2
Pension augmentation	35	63	38	67	11	34	17	29
Children allowances	69	62	76	67	23	11	14	9
Subsidized childcare/preschool subsidies	12	2	65	44	6	2	8	4
School subsidies	41	36	67	45	6	2	6	3
Stipends for college and university students	32	30	48	35	16	4	13	7
Help with housing construction and repair	2	0	24	7	14	3	1	1
Heating fuel	0	15	15	39	23	14	6	4
Food at subsidized prices	0	0	13	6	6	3	10	3
Help with purchase of manufactured goods	1	0	28	27	5	0	0	0
Subsidized utilities	8	0	13	15	9	1	4	5
Medical care	93	53	89	20	55	46	65	46
Subsidized vacation	1	1	49	3	22	4	43	19
Enterprise housing	25	3	12	4	14	2	2	1
Public transportation	40	38	86	77	34	22	41	28

Source: World Bank survey of farms (2003).

Note: a. "Before" means before the dismantling of the sovkhoz or kolkhoz farm.

	Azerbaijan		Bulgaria		Kazakhstan		Moldova	
	Level ^a before ^b	Level ^a now	Level ^a before ^b	Level ^a now	Level ^a before ^b	Level ^a now	Level ^a before ^b	Level ^a now
	Alcohol use among adults	38	28	41	60	49	65	41
Alcohol use among youth	44	37	28	71	43	64	33	62
Level of crime	29	25	22	78	38	57	31	49
Criminal activity among youth	28	25	19	76	35	54	30	51
Domestic abuse/violence	28	26	20	40	27	39	30	45

Source: World Bank survey of farms (2003).

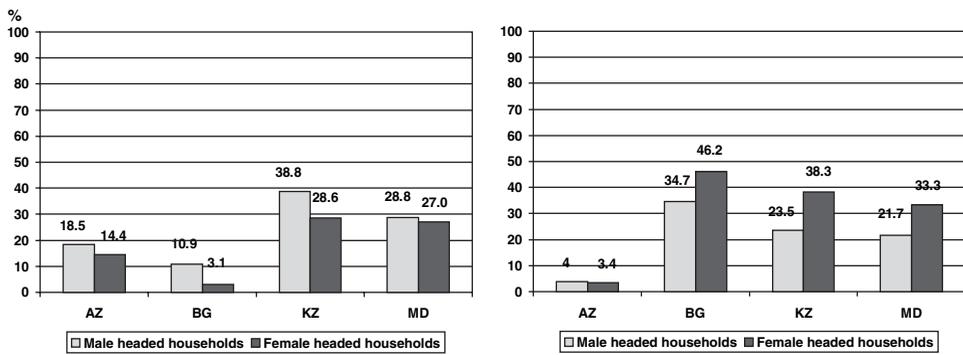
Notes: a. Level on a scale from 0 (very low) to 100 (very high). b. "Before" means before the dismantling of the sovkhoz or kolkhoz farm.

Table A15. Structure of Gross Agricultural Production, by Category of Farm, 1991, 2002
(percent)

Country	Agricultural enterprises		Household plots and private farms	
	1991	2002	1991	2002
Azerbaijan	56	2	44	98
Kazakhstan	68	22	32	78
Moldova	75	29	25	71

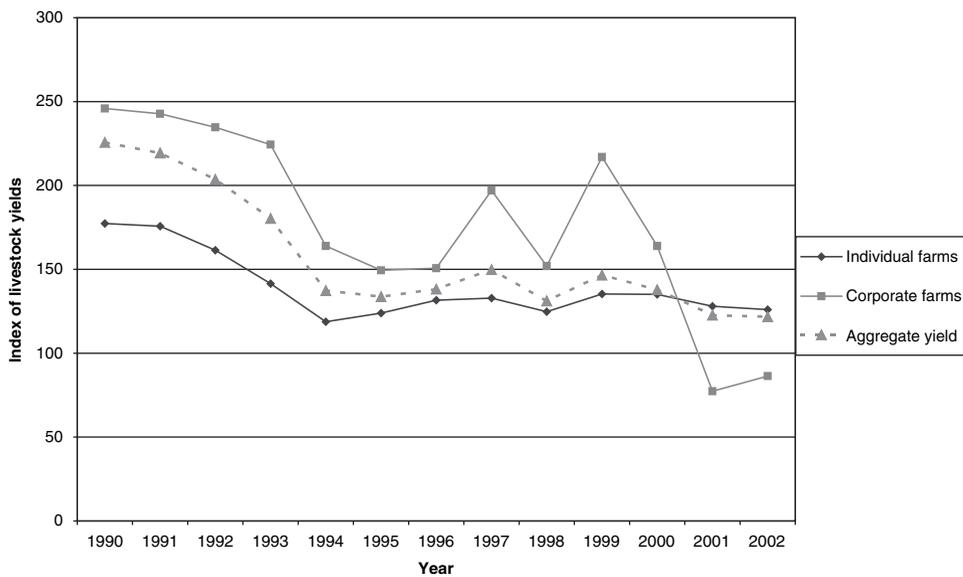
Sources: Statistical Committee of the CIS (2001, 2003a).

Figure A.1 Percentages of Male- and Female-headed Households Stating that Well-being Has Improved or Deteriorated over the Previous Three Years



Source: World Bank Survey, 2003.

Figure A.2 Aggregate, Corporate, and Individual Farm Livestock Yields in Moldova, 1990–2002



Sources: Statistical yearbooks.

Background Information on World Bank Survey of Farms, 2003

With the assistance of local research firms,¹ surveys of households and farm enterprises were conducted in Azerbaijan, Bulgaria, Kazakhstan, and Moldova. In each country except Kazakhstan, a two-stage sampling design was used. In the first stage, the main farming system zones in the country were identified, and representative districts were selected from those main zones. Though the type of agriculture practiced was the most important factor in the identification of the zones, there was also an effort to ensure coverage of a variety of farm types, different degrees of poverty, and various degrees of isolation. It was also important to avoid a sample with one predominant social or ethnic group (see Table B.1).

In the second stage, communities were supposed to be randomly selected, from which farms and households were then randomly selected. In Kazakhstan, the main farming system zones in the country were identified, and then representative oblasts were selected from those main zones. In a second stage, raions in each oblast were to be randomly selected, and in the third stage communities were to be randomly selected, from which farms and households were randomly selected.

The country-level representation of the World Bank surveys in the countries rests on how well the survey regions reflect the main farming systems in those countries, how scrupulously the survey firms implemented random selection, and what the size of the sample is. Though efforts were made to ensure representation, it was not possible to monitor the surveys with sufficient precision as to be certain. To be conservative, then,

1. Azerbaijan, Synergetics; Bulgaria, Agency for Socioeconomic Analyses, supported by Blackstone (Canada); Kazakhstan, Bisam; Moldova, Agency for Restructuring Agriculture.

Table B.1 Sample of World Bank Farm Restructuring Survey, 2003

	Azerbaijan	Bulgaria	Kazakhstan	Moldova
Districts or oblasts covered	Khachmaz, Shamakhy, Imishly, Sabirabad, Lenkoran, Masally, Khanlar, Tovuz	Pleven, Plovdiv, Dobrich	Almaty, Akmola, Pavlodar, West Kazakhstan	Orhei, Nisporeni, Floresti, Cahul, Taraclia
Number of household surveys	703	598	600	500
Number of farm enterprise (farm manager) surveys	80	57	200	200

one can state that the findings of the survey are representative only within the selected regions.

Farm enterprise questionnaires were administered to farm managers of peasant farms, heads of individual farm enterprises, and managers of corporate farms. Households—defined as rural households engaged in farming without being formally registered—were administered separate questionnaires. The difference between farm managers and households was based solely on registration rather than on the size of the farm. Sampling procedures for households and farm enterprises differed between countries because of country-specific constraints related to the availability of lists from which to draw samples.²

The household survey covered the sociodemographic household profile and time allocation of households; land ownership and land transactions; agriculture production and marketing; inputs and equipment for farming, and access to information; farm investments and finances; subjective ratings about well-being and perceived changes in the enabling environment for farming; and household income, expenditure, and living standards.³

There are two important biases in the sample of households gathered for Bulgaria and Kazakhstan. Because of the limited nature of land restitution in rural areas of Bulgaria, the sample of households there differed from the samples in the Commonwealth of Independent States (CIS) countries. Whereas in the CIS countries more than 95 percent of households surveyed had land and were engaged in some sort of farming activity, 23 percent of households surveyed in Bulgaria had no land and were not engaged in farming activities. For Kazakhstan, there is an important bias in the household sample in that only rural households that engaged in farming were surveyed.

The sample biases undoubtedly affect the household survey results, though the implications are not clear. The Bulgarian household survey results reflect the opinion of the rural

2. Technical presurvey and postsurvey notes by each research firm describe the quantitative research design, sampling selection, fieldwork, and data management. They can be made available upon request.

3. Findings from the household data set about access to land and land ownership must be interpreted with caution. Results suggest considerable confusion among households as to whether they received paper shares or physical land shares during land reform.

population rather than of the farming population. The Kazakhstan household survey results, in contrast, reflect the opinions of the farming population rather than of the rural population. Because the rural and farming populations coincide in Azerbaijan and Moldova, the survey results there reflect both rural and farming populations.

The farm enterprise survey covered the same land- and farm-related questions as the household questionnaire but at a greater level of detail for many of the questions. It also asked about perceived changes in the enabling environment for farming and about subjective ratings on farm profitability.

Semistructured interviews were carried out with men and women in a subset of the surveyed households to further explore issues addressed in the household surveys. Gender-stratified focus groups composed of similarly diverse participants were organized in each region to examine gender issues, to map the assets and resources of the community, and to discuss community dynamics. Finally, key informant interviews were used to get more in-depth information about specific topics and to explore differences of perceptions and contradictory interests among different stakeholders such as mayors and other local officials; farmers and other rural entrepreneurs; agricultural officials; social service providers, including medical and educational personnel; and civil society organizations, including religious leaders, informal leaders, and representatives of women's organizations.

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