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המרכז למחקר בכלכלה חקלאית
THE CENTER FOR AGRICULTURAL ECONOMIC RESEARCH

Working Paper No. 9706

DOES LAND REFORM MATTER? SOME EXPERIENCES FROM THE FORMER SOVIET UNION

by

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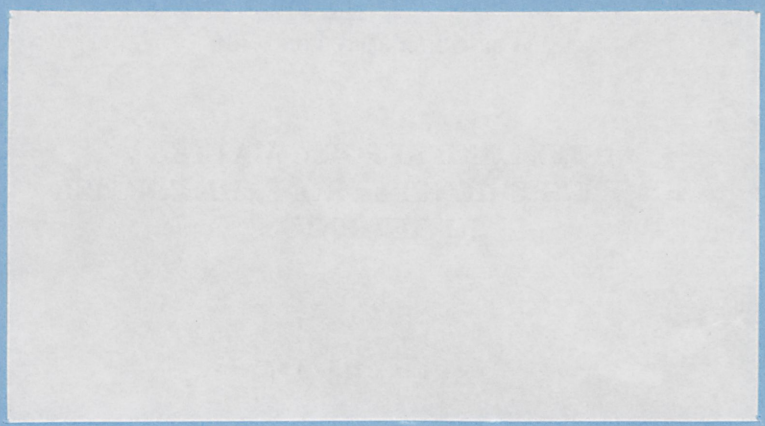

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מאמרי המחקר בסידרה זו הם דווח ראשוני לדיון וקבלת הערות. הדעות המובעות בהם אינן משקפות את דעות המרכז למחקר בכלכלה חקלאית.

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Does Land Reform Matter?
Some Experiences from the Former Soviet Union

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Agricultural reform in all transition economies involves adjustments on three major levels. One level is that of sectoral policies. This includes price liberalization, changes in taxation, relaxation of export and import restrictions, and overall reduction of government intervention in agriculture, all of which are closely linked with the general goals of macroeconomic stabilization. Another level focuses on upstream and downstream markets. It includes development of market-oriented channels for input supply, farm product sales, agricultural processing, and no less importantly farm credit. The third level encompasses issues of farm privatization, specifically land reform, establishment of property rights, and internal restructuring of farms in compliance with general market-based principles.

While the service sectors in the former Soviet Union (FSU) and East Central Europe (ECE) have steadily grown since 1991, agriculture continues to play a much larger role in the economy of these countries than in western Europe and North America. Improvements in the performance of the agricultural sector are therefore likely to have a major impact on economic recovery in the region and on the well-being of the relatively large rural population. Back in 1991, at the dawn of reforms, privatization of agriculture was expected to produce a quick supply response, leading to rapid significant improvements in the economy. This has not happened, and in retrospect we now know that these expectations were impossibly naive. Agricultural production in the FSU countries, and also in many parts of ECE, declined precipitously between 1991 and 1995, and it is only in the last year or so that we are witnessing signs of a possible reversal of the downward trend (which may still prove to be merely a statistical error). Of course, the disappointing performance of agriculture can be explained by general difficulties of macroeconomic adjustment or inadequacy of market services. Yet in the light of the large gap between initial expectations of reformers and scholars, on the one hand, and the actual accomplishments, on the other, it is appropriate to stop and review what the process of agrarian reform has achieved.

The present article is based on the author's experience with the issues of land reform and farm restructuring in countries of the FSU. The empirical data presented in the body of the text are largely derived from farm-level surveys that have been conducted by the author in cooperation with colleagues from the World Bank (most notably, Karen Brooks and Csaba Csaki) since 1992, as part of the World Bank's ongoing effort to monitor the progress with agrarian reform in former socialist countries. A bibliography at the end of the article lists the main publications based on these surveys and other selected sources dealing with issues of land reform and farm restructuring in transition economies. The literature in this field is growing rapidly, and the bibliography makes no attempt to be exhaustive. The views presented in this article are the author's own and do not reflect in any way the views and policies of the World Bank.

The Legacy and Initial Expectations

Traditional socialist agriculture was characterized by a dual farming structure. One component comprised commercial production in large-scale collective and state farms. These large farm enterprises cultivated thousands of hectares and employed hundreds of workers. The other component consisted of subsistence-oriented individual farming in small household plots. A typical household plot was less than half a hectare, and it was cultivated by part-time family labor. Organizationally, the household plots were part of the collective, and not independent entities: the plots were allocated to members and employees of the large collective farm in the village, but the families were generally allowed to make their own production decisions. This duality of farming was typical of both the Soviet Union, where it became universally established in the early 1930s, and East Central Europe, where it was imposed by the post-World War II socialist regimes in the early 1950s.

The large-scale collective farms controlled most of the resources and were responsible for most of the agricultural product. The small-scale individual sector controlled about 2% of land across the region, and yet contributed between 20% and 30% of agricultural product. This accomplishment of individual farming during the Soviet era was made possible by concentration in livestock production (which does not require a lot of land), on the one hand, and close, virtually symbiotic reliance on the large-scale host farms for input supply and farm services, on the other.

Another feature of socialist agriculture concerned the ownership of land. Over 85% of arable land in the countries behind the "Iron Curtain" was owned by the state. This included all agricultural land in the fifteen republics of the former Soviet Union and in Albania, which was fully nationalized. In the rest of East Central Europe, cooperative or collective land ownership co-existed with state property, and private land also remained in various forms. Yet even land that was formally registered as individually owned was managed and cultivated by large-scale collectives and cooperatives.

Agricultural production in collective or cooperative farms is not a widespread phenomenon in market economies. The main justification for collective farming - economies of scale - has never been validated empirically. In fact, the farms in market agricultures throughout the world are observed to be much smaller (measured by the amount of land and number of workers) than the socialist farms. The disadvantages of collective production, including free riding, moral hazard, and monitoring costs, are well documented and appear to outweigh the alleged advantages. Indeed, socialist agriculture, despite its very impressive physical growth rates, has never been particularly efficient, as is evident from the persistent record of food shortages in the Soviet Union and most other countries in the region.

This experience reinforced by international comparisons dictated one of the main components of the agricultural reform agenda in the former socialist world after 1990. Transition from the socialist command system to a market-oriented economy was generally regarded as requiring a program for the transformation of the traditional collective and state farms into new farming structures whose operation would be consistent with market principles. Restructuring of the large collectives was naturally predicated on a program of land reform, which was expected to transfer land into individual ownership and re-establish an active sense of property rights that had been lost during the socialist era. Transition to individual land ownership and restructuring of the large-scale "socialized" farm enterprises is accordingly one of the main characteristics of agricultural transformation in ECE and the FSU.

In 1990 and 1991, as the countries of East Central Europe and the Soviet Union embarked upon economic and political liberalization, expectations regarding agriculture's role in the process of reform were sharply polarized. The proponents of traditional collective agriculture resisted the reform attempts, arguing pessimistically that privatization of land and farming structures would lead to immediate fragmentation of holdings, causing collapse of food production and even famine. They regarded privatization of agriculture as tantamount to plundering of national wealth. The supporters of market-oriented reforms, on the other hand, were expecting a rapid supply response from agriculture once land and other productive resources began to shift into individual ownership and collective structures began to disintegrate. Expectations of rapid recovery were based on the Chinese experience, which in 1990 was the only international benchmark for reform of collectivized agriculture. The reformers also optimistically cited the example of household plots, which on 2% of land produced 30% of agricultural product. The highly positive experience with the household responsibility system in China and the performance of the household subsector in the socialist countries were regarded in the early 1990s as sufficient proof of immediate benefits that could be achieved by privatizing land and agricultural production.

The reality after five years of reforms is of course different. Neither the collapse nor the rapid recovery has come about. We are now beginning to realize that the initial expectations were quite naive. First, the encouraging examples used to justify these expectations were not really applicable. Much more significantly, the transition to a market-oriented agriculture is a long and complex process.

Privatization of land and restructuring of large farms is only one facet of a multi-dimensional process of transition, and, however important it is, success requires progress in all dimensions. A recent attempt to systematize the evaluation of agricultural reforms has identified five relevant dimensions, each divided into five steps characterizing progress toward a market-based agriculture. The skeleton of the five dimensions of agricultural reform presented in Table 1 highlights by its twenty-five interlinked cells the complexity of the overall process and emphasizes the partial role that privatization of land plays in the total picture. Second, expectations of a rapid recovery and efficiency improvement implicitly assumed quick reduction of the role of inherently inefficient collective and cooperative producers and swift transition to theoretically more efficient individual farming. These expectations ignored the effect of risk, uncertainty, and imperfect markets on individual choice, while in reality these factors created severe obstacles to transition from collective to individual farming.

Table 1. Dimensions of Agricultural Reform and Steps in Transition to the Market

Progress ranks	Dimensions of agricultural transformation				
	Market liberalization	**Land reform**	**Privatization of services**	**Rural finance**	**Institutional framework**
1 (command economy)	Direct state control of prices and markets	System dominated by large-scale farms	Monopolistic state owned agro-processors and services	Soviet-type system, with "Agrobank" the sole financing channel	Institutions of a command economy
2	Deregulation with indicative prices, and price controls	Legal framework for land privatization and farm restructuring in place, implementation launched only recently	Spontaneous privatization and mass privatization in design or early implementation	New banking regulations introduced	Modest restructuring of government and public institutions
3	Mainly liberalized markets constrained by absence of competition.	Advanced stage of land privatization, but farm restructuring is not fully completed	Implementation of privatization programs in progress	Restructuring of banking system, emergence of commercial banks.	Partly restructured central and local government institutions
4	Liberal markets and liberal trade policies with partially developed domestic markets	Most land and farming privatized, but titling is not finished and land markets not fully functioning	Most agro-processors and services privatized	Emergence of financial institutions serving agriculture	Government structure refocused; research, extension, education being reorganized
5 (market reforms completed)	Competitive markets with minimal government intervention	Farming structure based on private ownership with active land markets	Privatized agro-processors, marketers, input suppliers	Efficient financial system for agriculture, agro-industries, and services	Efficient public institutions focused on the needs of private agriculture

Source: C. Csaki and Z. Lerman, "Land reform and farm restructuring in East Central Europe and CIS in the 1990s: Expectations and achievements after the first five years," *European Review of Agricultural Economics*, Vol. 24, No. 3/4, pp. 431-455 (1997).

Assessing the Impact of Reform

Integrated evaluation of the process of agricultural transformation by all five dimensions is a very difficult undertaking, particularly so if we attempt to base the evaluation on sound empirical data. So far there have only been attempts to assess the achievements of reform by assigning purely subjective scores to each dimension and ranking different countries by unweighted average scores (see the article by Csaki and Lerman from which Table 1 is taken). Attempts to develop quantitative measures for the evaluation of the reform process usually focus on a single dimension (or even a single aspect of a dimension, such as the "decollectivization index" recently calculated by Mathijs and Swinnen of the Catholic University at Leuven). The present author feels that the available empirical base is still not ripe for a comprehensive assessment of agricultural reforms by all dimensions, and the rest of the article will accordingly focus on selected empirical findings

that, in the author's opinion, highlight some major changes and impacts achieved in the process of land reform and farm restructuring. The synthesis of accomplishments in all five dimensions will have to wait until better data are collected.

How to assess the impact of land reform and farm restructuring in former socialist agricultures? The ultimate test, of course, is recovery of agricultural production after the long transition slump and, more importantly, increase of productivity or efficiency. The traditional focus on physical yields (i.e., productivity of land) should be replaced with a much broader analysis of all factors of production (including labor, fertilizer, water, etc.) with the objective of detecting significant changes compared to the pre-1990 situation. The available data are still grossly inadequate for such an econometric analysis, and even the overall production statistics do not ensure an unambiguously reliable picture. We are therefore forced to look for indirect and partial measures of the impacts of land reform, based on our understanding of the pre-1990 structure of socialist agriculture and the goals of market reforms.

The two salient features of socialist agriculture, as noted in the previous section, were duality or bimodality of farming structures and concentration of land in large collectives. Market economies, on the other hand, are characterized by a continuous spectrum of farm sizes, with clear predominance of relatively small family-operated units. Collective or cooperative production is an exception, not the rule. The impact of land reform can be assessed, first and foremost, by measuring the achievements on this level. The corresponding criteria include adjustment of farm sizes, as well as growth of the individual farming sector and reduction of the collective and state sector.

In the absence of solid production data, the impact of land reform can be assessed by looking at the rural households and their views of the family's economic situation "before and after". The results of this approach are largely qualitative, yet they provide a good proxy of the general satisfaction with the process of reform and its achievements. If the rural population is now happier, better off, and more optimistic than previously, this is an obvious indirect proof that land reform has had a positive impact on the rural population.

Ample statistical data are available on redistribution of land, but much less is known from official sources on the restructuring of collective farms. Household-level attitude data are not covered at all by official statistics. To construct a useful picture of the impacts of land reform according to our abbreviated agenda, we need to combine statistical data from official sources with sociological attitude-based surveys. Farm surveys conducted by the World Bank in various countries since 1992 provide useful information for this assessment. The analysis is presented mainly for the FSU countries, which constitute the dominant part of the former socialist world in Europe: the total endowment of arable land in the FSU is seven times that in ECE, and the rural population is three times as large.

Patterns of Land Reform

Two alternative tracks of land reform are discernible in the former socialist world. These can be characterized as *restitution to former owners* versus *distribution to users* (Table 2). Restitution normally means that beneficiaries get a physical plot of land and a registered title, although in some countries (notably Hungary and the former East Germany) money compensation to former owners is chosen when physical restitution of old plots is infeasible. Distribution, on the other hand, starts with a process of division of the available land into individual shares, or paper certificates of entitlement. Further procedures are then needed, first, to identify the physical allotment represented by the paper share and, second, to register it and issue title documents. While distribution mechanisms are designed to leave land in the control of active farmers ('land to the tiller'), restitution often transfers land to urban residents who have no farming experience and at best become part-time or weekend farmers.

Claims of former owners and restitution are relevant mainly for the countries in which private land ownership existed until after World War II and the original land owners or their descendants are identifiable to this day. Land legislation in ECE generally recognizes both the rights of landowners immediately prior to collectivization and the rights of current land users. In Albania, however, only the

current land users participate in the distribution of land, and former owners are compensated by a special issue of state bonds. At the other extreme, Bulgaria and the two components of former Czechoslovakia mandate return of collectivized land to former owners, while workers in collectives may be allotted land for farming without any ownership rights.

Table 2. Entitlement Basis for Privatization of Land

East Central Europe	**Restitution mixed with distribution**
Albania	Workers
Hungary	Former owners+workers
Romania	Former owners+workers
Czech and Slovak republics	Former owners
Bulgaria	Former owners
East Germany	Former owners
Former Soviet Union	**Predominantly distribution**
Baltic states	Restitution to former owners
Other former republics (12)	Distribution to workers

In the FSU, where land was nationalized decades ago and the traditions of private ownership are not strong, land rights are distributed to current users, not former owners. Land shares in the FSU are normally distributed without payment to members and workers in collective and state farms (including pensioners) and some other categories of rural residents. Reinstatement of pre-collectivization ownership and compensation of former landowners is practiced only in the Baltic states, which initially (in 1989-1990) began distributing land to the users according to the prevailing FSU model, but then switched to strict restitution to former owners. This departure from the FSU model in the Baltics cannot be attributed entirely to the fact the Baltic countries were absorbed into the Soviet Union and collectivized only after World War II. Thus, in Moldova, Ukraine, and Belarus the western provinces came under Soviet rule only during World War II and the collectivization of agriculture was completed as recently as 1950, roughly at the same time as in the Baltics. Yet restitution of land or compensation of former land owners is not reflected in the official approach to land reform in these countries. The adoption of the restitution strategy by the Baltic states is probably a political statement of their psychological desire to sever all links with Russia and the rest of the FSU and a reflection of their goal to become a part of "the other" Europe.

Both restitution and distribution are linked to restructuring of existing farm enterprises, because they are the main source of land in the former socialist countries and because it is meaningless to distribute land to new owners while leaving other assets untouched. The most conservative and easiest procedure is to retain the prior structure under a new name. Land and assets are distributed to individuals in the form of paper shares, but this is not followed by physical allocation of individual entitlements. The recipients keep their shares of land and assets in the old collective, continuing the tradition of collective production. The collective may change its name to a joint-stock society, or a similar organizational structure, but it continues functioning as before. Without appropriate incentives to shareholders through tangible returns on their investment, no true sense of ownership is created, and the shareholders continue working as salaried employees under the direction of their previous collective manager. These 'new-old' structures retain all the weaknesses and inefficiencies of collectives, although they are often expected to be more efficient because of their modern-sounding names and new charters.

At the opposite extreme are farms that completely dismantle the old structure and physically distribute all land and assets to individuals. The large-scale farm is broken up into small family units, each with its allotment of land and assets (the latter possibly in cash equivalent form). A few hundred private farms are thus created in place of one large collective farm.

A number of farm structures intermediate between the old collective and the new family farm have appeared. In a 'bottom-up' approach, individual private farmers may combine to form an association of agricultural producers. In some associations, each farm retains its identity, but all farms cooperate in provision of services, where economies of size and the effect of pooling of resources are most pronounced. In other associations, private farmers may pool their small plots into larger allotments and form a partnership for production. Several partnerships or associations in the same region may in turn join to form service cooperatives.

A similar associative structure may also evolve 'top-down,' when the old collective, instead of totally dismantling into hundreds of private farms, reorganizes internally into a system of relatively small autonomous profit centers. The land and asset base of each such unit is the sum total of the land and asset shares of its members or 'active investors.' Each production unit, in addition to its active member-owners, may accept land and asset shares from inactive investors, who will be entitled to dividends from the unit's profits. This organizational form has the important advantage of providing a natural solution to the needs of pensioners or other shareholders who receive land entitlements and yet do not wish to continue farming. Because of the relative smallness of the new units, which are organized as partnerships or small corporations, the active workers maintain the sense of private ownership of production assets. The old management structures of the collective in turn may reorganize to provide the necessary services and support to these autonomous units. Agricultural production is thus concentrated in units that are small enough to maintain a good sense of personal involvement and accountability, while farm support services and the interface with the environment are provided by a relatively large and professionally experienced cooperative structure.

Table 3. Restructuring Modes for Collective Farms

- Reconstitution of a collective structure based on individual ownership of land and asset shares
- Transformation of the collective structure into a joint-stock corporation based on individual shares
- Division of the collective structure into autonomous profit-oriented entities based on individual investment of land and asset shares and operating within an association or a service cooperative
- Separation of independent entities from the collective structure (family farms, partnerships, or production cooperatives)
- Cooperation of independent entities

The alternative farm restructuring modes are summarized schematically in Table 3. The systematization in Table 3, as well as the general discussion of farm restructuring given above, are based on observations of what is actually happening throughout the region.

Changes in Land Tenure and Farm Organization

Perhaps the two most prominent achievements of agrarian reforms since 1991 have been the dramatic strengthening of individual farming and the transfer of land from the state to private (although not necessarily individual) ownership. While land privatization has been possible only in some of the FSU countries that legally recognize private ownership of land, the role of individual farming has increased universally, regardless of whether the land has been privatized or remains state owned.

Table 4. Share of State-Owned Land in FSU Countries that Recognize Private Land Ownership: 1996-1997

	Percent of land in state ownership	
	All agricultural land	Excluding pastures
Russia	42	
Ukraine	42	
Moldova	17	
Georgia	78	54
Armenia	67	35

Source: Official country statistics; in Georgia and Armenia, government strategy is not to privatize mountain pastures, which account for a substantial proportion of agricultural land.

Private land ownership is recognized in the western part of the FSU, specifically in Russia, Ukraine, Moldova, Georgia, and Armenia. In the east, the six Central Asian republics, including Kazakhstan, generally retain state ownership of land, certainly of land intended for commercial farming. Where private ownership is recognized, the share of the state has declined to less than 50% of arable land, down from 100% prior to 1991 (Table 4). These numbers are changing continuously, as land privatization is a dynamic, ongoing process in all countries.

Just as there is a clear division between the western republics and Central Asia in attitudes toward private ownership of land, there is another dichotomy among the western republics in the preferred mode of land privatization. The three small, densely populated republics, namely Georgia, Armenia, and most recently also Moldova, have moved in the direction of "mass privatization", i.e., comprehensive distribution of land to individuals and elimination of the role of large-scale farm enterprises. The two giants, Russia and Ukraine,

continue to prefer concentration of land in large collective farms, while allowing and even encouraging some distribution to individuals. In Russia and Ukraine, state-owned land has been privatized wholesale, in chunks of thousands of hectares, by transferring its ownership to local collectives. This privatized land, however, is not owned by individuals: it is now owned jointly by hundreds of people in each large farm enterprise (a former collective or state farm). Exclusive state ownership of the past is thus being replaced in the FSU by a mixture of collective and individual ownership, similar to the ownership pattern that persisted in ECE between 1950 and 1991.

In addition to large-scale privatization of land to collectives, substantial amounts of land have been transferred to individuals. "Land individualization," as distinct from "land privatization," is observed in all FSU countries regardless of the legal attitude toward ownership of land. One mode of land individualization involved enlargement of the traditional subsidiary household plots, which had existed and even flourished all through the Soviet era. Since 1991, the size of the household plots in various FSU countries practically doubled through generous reallocation of land from large collectives to individual holdings (Table 5). The individual sector also grew through a fundamentally new mechanism that allowed the establishment of private family farms outside the collectivist framework. Hundreds of thousands of independent family farms have emerged in the FSU (Table 6). A distinctive feature of these private farms, in addition to independent operation, is their substantially larger size: while household plots typically have less than 1 ha of land, private farmers cultivate from several hectares to tens of hectares (depending on the land endowment in each country). The strengthened individual sector, including both enlarged household plots and private family farms, accounts for about half the agricultural product in the FSU, up from20%-30% in the pre-1990 period, when it consisted of household plots only (Table 7). Most of this product, however, is from household plots, and the contribution of the private family farms is still small. In Russia, for instance, private farms account for about 2% of gross agricultural product, compared to 44% that originates in household plots.

The strengthening of the individual sector involved transfer of land from large collective farms to household plots and private farmers. An average collective in Russia, Ukraine, or Moldova has shrunk by more than 15% since 1991 (Table 8).

Table 5. Land in Subsidiary Household Plots

	Ratio of holdings Jan. 1993 to Jan. 1991	Percent of all agricultural land	
		Jan. 91	Jan. 93
Azerbaidjan	2.0	2	4
Belarus	1.5	6	9
Kazakhstan	1.3	0.15	0.2
Kyrgyzstan	1.4	1.0	1.4
Moldova	1.5	8	12
Russia	2.1	2	4
Tadjikistan	1.1	2	2
Turkmenistan	1.7	0.2	0.3
Uzbekistan	1.0	2	2
Ukraine	1.7	6	11

Source: Yearbook of the Statistical Committee of the CIS for 1994.

Table 6. Private Farms in the Former Soviet Union: 1994

	Number of farms	Average size, ha	Share of agricultural land in private farms
Armenia	298,100	1.3	30%
Russia	270,000	42	5%
Moldova (1996)	70,000	1.7	5%
Ukraine	27,700	20	1.5%
Kyrgyzstan	18,300	83	10%
Kazakhstan	16,300	410	3%
Belarus	2,700	21	0.5%
Uzbekistan	7,500	10	0.5%

Source: Official country statistics.

Table 7. Share of Individual Sector in Agricultural Production in the FSU (percent of gross agricultural product)

	1990	1995
Russia	26	46
Ukraine	27	46
Moldova	18	39
Turkmenistan	17	30
Uzbekistan	28	41
Armenia	35	100
Georgia	35	65

Source: Official country statistics.

Table 8. Downsizing of Large Farm Enterprises in the FSU (average farm size in hectare)

	1990-91	1995-96	Change in size
Russia	9,500	8,000	-16%
Ukraine	3,700	3,100	-16%
Moldova	2,800	2,000	-27%

Source: World Bank surveys.

This reduction in the size of large collective farms is partly the outcome of land distribution to individuals and partly a reflection of internal restructuring, which in many cases leads to a division of the original enterprise into two or three smaller units. As a result of the opposing processes that augment the individual holdings and reduce the size of collectives, the traditional dual or bimodal structure of socialist agriculture is becoming less sharp. Figure 1, based on survey data for Russia, shows a definite increase in the proportion of farm enterprises in the lower tail of the size distribution between 1990 and 1993, although the smallest farm enterprises are still very large compared to typical farms in market economies. At the same time, the emergence of a new category of private farms with sizes of 10-40 ha between the two extremes of the farm size distribution is also beginning to have a smoothing effect. A similar phenomenon is observed in ECE, where according to European Commission data the average size of collective farms declined from 3,000-4,000 ha in 1990 to 1,000-2,000 ha in 1995, while the average size of individual farms increased from less than 0.5 ha to about 2 ha and more. The process of land reform thus has definitely produced a noticeable downsizing of the very large socialist farms, shifting the farm size distribution in a direction consistent with the size patterns in market agricultures.

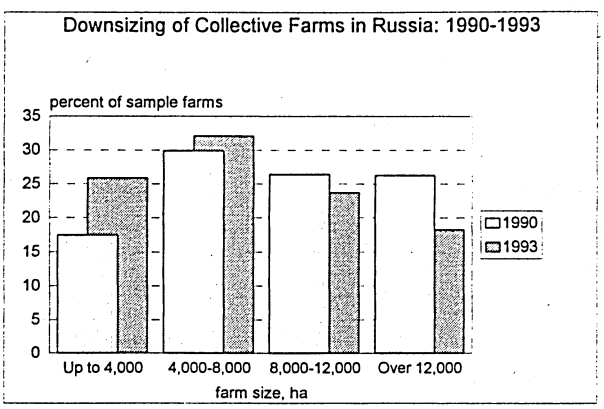

Figure 1. Downsizing of collective farms in Russia between 1990 and 1993. *Source*: World Bank survey.

The New Collectives

Despite the downsizing of large farms and augmentation of the individual sector, collectives continue to dominate FSU agriculture. In all former Soviet republics, farm enterprises control most of the land resources, and the individual sector cultivates about 15% of agricultural land (Table 9). This is a significant increase compared to the pre-1991 period, when the individual sector cultivated less than 2% of land, but it certainly shows that so far there has been no drastic fragmentation of the traditional large structures. The only exception is Armenia, where large farm enterprises have been virtually eliminated and all farming is done by individuals.

Table 9. Land Holdings by User: 1995 (% of agricultural land)

	Collective and state sector	Individual sector
Russia	87	13
Ukraine	80	15
Moldova	85	15
Armenia	18	82
Georgia*	78	22
Turkmenistan	92	8
Uzbekistan	86	14
Kyrgyzstan	59	24

* In Georgia, households cultivate 22% of agricultural land and 44% of arable land. *Source*: Official country statistics.

Table 10. Management Structure in Reorganized Enterprises (percent of farms in the survey)

	Ukraine	Moldova
Farms retain central management	96	72
Subdivisions have independence in		
Production planning and management	75	76
Input purchasing/product marketing	5	35
Hiring and firing	7	47
Subdivisions have own administrative staff	5	32
Subdivisions have own bank account	0	10

Source: World Bank surveys.

According to official statistics, between 80% and 90% of the traditional collective farms are no longer called "kolkhozes". They have re-registered as joint-stock societies, limited liability companies, partnerships, agricultural cooperatives, or other new

names. By this measure, all is well with the reform process. Yet, there are practically no official data on what is happening behind the new facade, and it often seems that farm restructuring so far has amounted to a mere "changing of the sign on the door". Recent survey data for Ukraine and Moldova provide a glimpse of the extent of internal restructuring in these newly reorganized large farms (Table 10). Although the numbers for Ukraine and Moldova in Table 10 are very different, the restructuring mode in both countries involves definition of autonomous functional subdivisions within the large farm enterprise. This mechanism is consistent with the descriptive discussion of farm restructuring in a previous section. The subdivisions are largely responsible for their own production decisions, yet most reorganized farms have kept a central management structure that coordinates the decisions of the autonomous subdivisions on the overall farm level. The central management is also typically responsible for the relations with banks and financial institutions, as very few subdivisions (even in Moldova) have an own bank account or access to credit.

The progress with internal restructuring of large farms is much more impressive in Moldova than in Ukraine, although the real movement toward reform in Moldova has begun only in 1996. This again may be an outcome of the desperate economic situation of the large farm enterprises in Moldova, which spurred them to start reorganizing quickly and radically if they wanted to survive. The farm enterprises in Moldova still have a long way to go toward a true autonomy of functional subdivisions within the larger collective structures, yet Moldova appears to provide a template for a relatively straightforward restructuring mechanism of the traditional farms.

Table 11. Legal Attitudes to Land Ownership and Land Transactions in the FSU Countries

	Private ownership	Transactions
Russia	Yes: all land (No in 10 ethnic republics)	Moratorium on land sales and mortgage lifted by 1994 presidential decree; permanent enabling legislation blocked by parliament
Ukraine	Yes: all land	Moratorium on buy and sell; no mortgage
Moldova	Yes: all land	Moratorium on buy and sell lifted by constitutional court; enabling legislation for commercial farmland passed in 1997
Belarus	Yes: household plots (June 93)	Buy and sell allowed for household plots; Use rights for commercial farmland non-transferable
Georgia	Yes: all land	Buy and sell allowed in Feb. 1996 law
Armenia	Yes: all land	Buy and sell, mortgage (law of 1991)
Azerbaijan	No	
Kazakhstan	Yes: only household plots (decree)	Buy and sell, mortgage of household plots; Use rights for commercial farmland permanent and tradable
Turkmenistan	Yes: potentially all farm land (constitution)	Prohibited to sell, exchange, give as a gift; leasing allowed; Use rights non-transferable
Kyrgyzstan	No	Use rights secure to 99 years and tradable
Uzbekistan	No: lifetime inheritable possession	Prohibited to sell, exchange, give as a gift, mortgage
Tajikistan	No	

Transactions in Land

Even in countries that recognize private land ownership, land in household plots and family farms is not always privately owned. The declared intention is ultimately to transfer individually cultivated land to individual ownership, but this appears to be a long-drawn process fraught with many difficulties. Obstacles to legal privatization of individual land holdings cover the whole gamut from bureaucratically understandable to hilariously ridiculous: they range from overly complicated, sometime self-defeating registration procedures to bottlenecks in printing presses that prevent timely availability of land title forms.

Table 12. Leasing of Land by Private Farms

	Farms with leased land			Farms without leased land, ha
	Percent of farms	Total size, ha	Leased land, ha	
Armenia	14	2.6	1.0	1.3
Georgia	2	8.7	7.8	0.7
Moldova	6	16.9	13.5	2.8
Romania	7	4.1	1.7	3.0

Source: World Bank surveys.

Privatization of land has not led so far to the development of significant land markets in the FSU, mainly because of various restrictions that have circumscribed until recently, and in some countries still circumscribe, the transactions in land (Table 11). There is evidence of buying and selling of small household plots, together with the family home, in Russia, Ukraine, and Moldova, but buy-and-sell transactions involving commercial farm land are virtually unknown.Transactions in land are largely restricted to leasing from the state, the local collective enterprise, or other individuals. Leasing appears to be the only practicable mechanism at this stage for adjustment of farm sizes and transfer of land from inactive or inefficient owners to active and efficient producers. Table 12 shows that leasing is indeed practiced as a mechanism for enlargement of land holdings in different countries both in the FSU and in ECE. Leasing-out can provide a mechanism for inactive landowners to make sure that their land does not remain idle and that they continue to receive an income from their assets. Thus, pensioners throughout the region, or urban restitution beneficiaries in ECE, can lease out their parcels to active farmers or collectives in return for a fixed lease payment or a share of revenues.

It is perhaps instructive to note that private ownership of land is neither necessary nor sufficient for transactions in land. Kazakhstan and Kyrgyzstan do not recognize private ownership of land, and yet the use rights in these countries are secure for more than 50 years and are fully tradeable. In Russia, Ukraine, and Moldova private land ownership has been recognized since 1991, but until recently land transactions were prohibited by various moratoria. In Georgia, where a large proportion of land was privatized in 1992-1993 and no formal moratoria were in force, land transactions could not be carried out in the absence of an appropriate legal framework for buying and selling of land (the required law was adopted only in February 1996). Finally, Turkmenistan, the only Central Asian country where private ownership of land is recognized by the constitution, prohibits outright any transactions in land between individuals other than short-term leasing. The situation in Turkmenistan in this respect is similar to that in Uzbekistan, which however does not recognize private land ownership.

The Benefits of Individualization of Land

Despite the internal contradictions in property rights and land transactions, the growth of the individual sector is having a significant impact on the rural population. The original Soviet rationale for allowing individual farming in small household plots was to provide the rural population with an independent source of food products, thus freeing the central planners from the need to worry about feeding the countryside. Indeed, pre-1991 household budget surveys indicate that rural families derived on average 25% of their total income from the household plot. By increasing the land holdings of the individual sector, the governments in the FSU countries improved the ability of the rural population to satisfy its subsistence needs. After decades of persistent out-migration from rural areas, some FSU countries are actually witnessing an increase of the rural population in recent years, as urban residents are beginning to discover the attraction of the village as an easy source of food for their families and apply to receive land for individual cultivation.

Yet the individual farming sector does not limit its production to satisfying subsistence needs. Recent farm surveys consistently indicate that both household plots and private farmers sell a substantial proportion of their output in nearby town markets. The share of output consumed within the family is still greater than the share of output sold, but on average the individual sector sells about one-third of its production volume (Table 13). Farmers that produce more sell more, and the increasing commercialization of the individual sector makes a tangible contribution to keeping the town markets in the FSU countries well stocked with produce.

Table 13. Commercialization of the Individual Sector (percent of output sold)

	Household plots	Private farms
Moldova	9	27
Russia	11	35
Ukraine	26	NA
Armenia	28	
Georgia	33	

Source: World Bank surveys.

Armenia and Georgia, the two countries that suffered from war and civil strife, are clear examples of the beneficial impact of both these factors, namely contribution of individual production to family subsistence and to commercial supply of food in the markets. In these two Transcaucasian countries agriculture has shifted to pure individual production. In Armenia, all arable land was distributed to individual peasants in 1992, and large collective holdings were eliminated. The process was swift and was conducted in exemplary order. In Georgia, the distribution of land to individuals was partial, but large collective farms ceased to function and all agricultural production today originates in the individual sector. Although the economy of these two countries was in a state of disarray until quite recently, there was not even a sign of famine and everybody was reasonably fed all through the difficult times. The markets were always full of produce, and the only shortage that the urban residents suffered may have been shortage of cash, not of food. The food supply situation would not have been as rosy had production remained concentrated in large farm enterprises. The collapse of the central distribution and marketing system in wartime would have prevented the delivery of products from these large bureaucratically managed farms to the population. Farm products would have rotted in the fields and in local warehouses, while the population would have starved. The individual sector, on the other hand, has proved much more resilient and much more adaptable to the changing situation. It has managed to feed itself and the urban residents as well.

A related phenomenon is now taking place in Moldova, another small former Soviet republic. After years of political deadlock that prevented significant reforms in agriculture, the large collective farms are economically in a very poor shape. Most of them report large losses and are unable to pay salaries for more than 6 months. This is proving to be a major impetus for rural families to leave the collective enterprise and to establish an independent private farm on a separate plot of land. Private farmers in Moldova cite the economic failure of the collective as the single main reason for their exit and the establishment of an independent farm. This observation is consistent with the result of Mathijs and Swinnen, who have found an inverse relationship between their "decollectivization index" and the economic situation of the parent collective. The number of private farms in Moldova has increased by leaps and bounds since 1994, and now stands at about 70,000 farms, which is more than double the number of private farms in all of Ukraine, where the population is 10 times larger.

The case of Russia and Ukraine provides an example of mutually compensating forces between the scope of agricultural reforms and individualization of agriculture. Unlike Moldova, both Russia and Ukraine have been implementing a wide range of agricultural reforms since 1991. The reforms have been partial, limited, gradual, and controversial, but still the process of reform has been moving forward in these countries, primarily through personal conviction of their presidents. There has been an ongoing debate about private ownership of land, for instance, but land privatization continued by force of presidential decrees. In Moldova, on the other hand, all progress was blocked by parliamentary resolutions, and the situation remained frozen until the end of 1994, when a landmark decision of the constitutional court relaunched the reforms. In the process of

ongoing reforms in Russia and Ukraine, large farm enterprises have implemented various changes in an attempt to adapt to the new environment, and their economic situation today is not critical (although it is unquestionably worse than in the Soviet era, when the agricultural sector enjoyed virtually unlimited budgetary support). Farm members and employees thus have much less motivation to leave the collective framework and set up a private farm than their counterparts in Moldova. The establishment of private farms, after a dramatic initial burst in 1992-1993, has stagnated in recent years and has remained virtually unchanged since 1995, as new entrants are balanced by liquidations of failing farms. The structure of the farm sector in Russia and Ukraine is still changing, but it appears much closer to a balanced coexistence of different organizational forms than Moldova, where peasants are fleeing the large-scale enterprises in despair.

Human Impacts of Reform

Just as privatization of agriculture has failed to produce a quick supply response and the total farm product continues to decline, we have so far been unable to observe any clear and significant improvements in the efficiency of individual production compared with collectives. The yields achieved by private farmers are slightly higher for some crops, lower for other crops, and comparable to yields in collectives for yet other crops. Milk yields per cow achieved by individuals are higher that those achieved by collectives in some countries (Ukraine), lower in other countries (Turkmenistan), and roughly the same in yet other countries (Moldova). The picture at best is mixed, and it is impossible to draw any definite conclusions regarding performance differentials in farms of different organizational categories. The time horizon is still too short, and the available database is hopelessly inadequate for drawing comparative efficiency conclusions at this stage.

Yet the attitudes of families and individuals revealed in various farm surveys point to a definite impact of reforms, which appears to be quite encouraging. We have mentioned previously the evidence of some urban-to-rural migration, which is definitely the outcome of agricultural reforms. Contrary to the situation in former East Germany, where changes of ownership structure and dramatic increases of factor efficiency have led to massive redundancies among the rural population, reforms have not produced additional unemployment in rural areas of the FSU. There is actually evidence that small-scale individual farming absorbs more labor than the large-scale collectives, despite their large contingent of non-productive workers employed in various support services. In densely populated, land-poor Moldova, private farms employ 1.2 workers per hectare, while large farm enterprises employ only 0.3 workers per hectare. In land-rich Ukraine, one worker supports 5.5 hectare on a private farm and 8 hectare in a collective enterprise. In Russia, private farms report land endowments of 26 hectare per worker, while collective enterprises report 38 hectare per worker. These findings as reported in Table 14 are consistent with the results of Mathijs and Swinnen, whose "decollectivization index" is directly related to the ratio of land per farm worker. Individual farming, by acting as a labor sink, may provide at least a partial solution to the problem of productive employment of the rural population and prevent migration of unemployed farm laborers to urban areas, migration that would most certainly impose an impossible burden on the fragile fabric of social and welfare services in the FSU countries.

Table 14. Land Endowment per Agricultural Worker in Private Farms and Collectives

	Private farms	Collective farms
Russia	26	38
Ukraine	5.5	8
Moldova	0.8	3

Source: World Bank surveys.

Another important outcome of reforms emerges from a comparison of attitudes and subjective situation assessments of independent private farmers and employees of large farm enterprises based on recent surveys in three major FSU countries - Russia, Ukraine, and Moldova. The private farmers in most cases are former farm-enterprise employees who have decided to leave the collective and take the fate of their families in their hands. The remaining farm-enterprise employees are basically the same human material as private farmers, but they have a different set of attitudes and priorities: they prefer the relative safety of the traditional collective framework and tend to avoid the risks and uncertainties associated with

independent farming. Both groups give a fairly low evaluation of the general standard of living in their countries. Yet comparison of their responses shows that on the whole farmers are better off and more optimistic than employees of collective enterprises. The percentage of respondents reporting that the family budget is just sufficient for subsistence is significantly higher among farm-enterprise employees than among private farmers; at the other

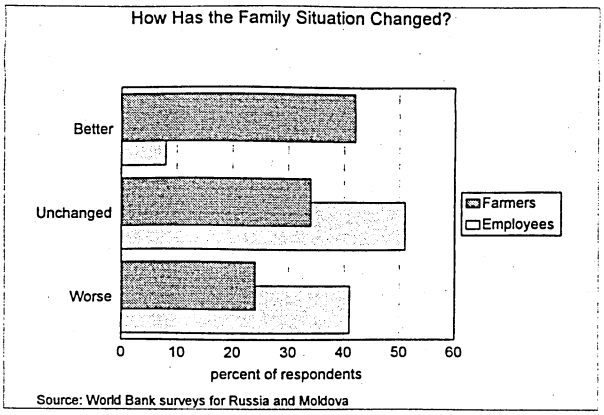

Figure 2. "How Has the Family Situation Changed in the Last Few Years?" Subjective assessment of the change in family situation since the beginning of reforms by private farmers and employees-members of collective enterprises.

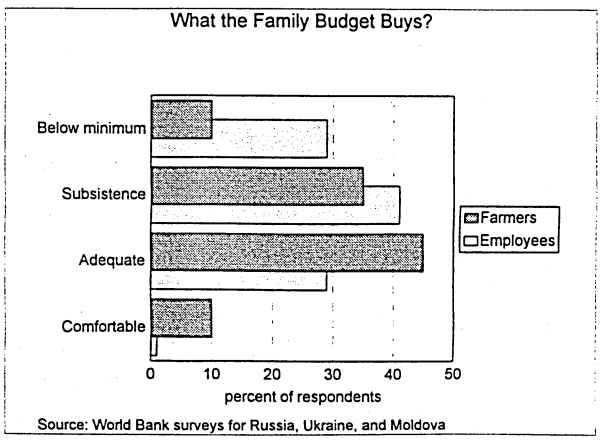

Figure 3. "What the Family Budget Buys?" Subjective assessment of the family's purchasing power.
"Below minimum" - family income not sufficient to buy all the food it needs; "Subsistence" - family income sufficient to buy food and the bare necessities of life; "Adequate" - family can afford clothing, shoes, etc., in addition to food; "Comfortable" - family can also afford durable products and experience no material difficulties.

extreme, a much higher percentage of private farmers report that they can afford more than just the bare subsistence needs, including even the purchase of durables (Fig. 2). Private farmers offer a much more positive evaluation of the changes during the last few years than farm-enterprise employees: a significantly higher percentage of private farmers judge the situation to have improved, while most farm-enterprise employees at best regard the situation as unchanged (Fig. 3). Finally, private farmers face the future with much greater optimism than employees remaining in

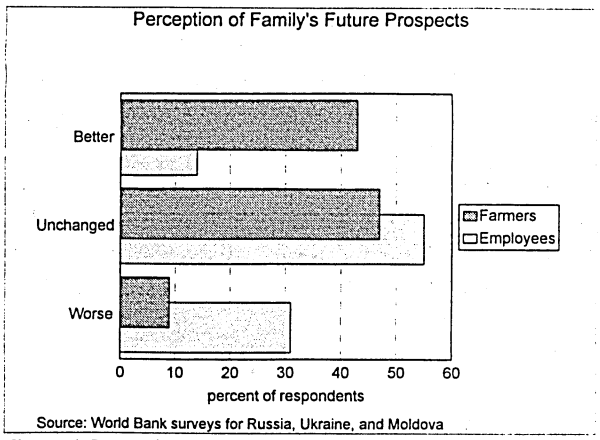

Figure 4. Perception of family's future prospects: "How Will the Family's Economic Situation Change in the Next Few Years?"

collective farm enterprises: the percentage of private farmers with positive expectations for the future is much higher than the percentage of farm-enterprise employees; and conversely, the percentage of farm-enterprise employees with a negative expectations for the future is much higher than the percentage of private farmers (Fig. 4).

Private farmers are basically at the leading edge of reform. They have taken a clear decision, and there is no turning back to the safety of the collective umbrella. They are fully exposed to all the risks that producers have to face in a transition environment that is prone to extreme economic and legal uncertainty, including the ultimate risk of not infrequent bankruptcy. And yet they appear to be happy and optimistic, if not in absolute terms then at least relatively to the other segment of the rural population, the individuals who have decided to stay in the collective rather than face the risks of personal initiative. In a certain sense, this is the most significant and most encouraging outcome of reforms: the efforts have not been in vain.

Conclusion

It is still difficult to measure the economic impact of reforms in agriculture, not only because the time is too short and the data are poor, but because no country has implemented a comprehensive set of reforms in all relevant dimensions and the observed negative features can always be attributed to the failure to implement some subset of necessary reforms. The only indisputable observation, namely the decline in agricultural output, is probably associated with the general transition in the economy, and is not an outcome of agricultural reforms.

Another negative feature of reform is the continued dominance of large farm enterprises in FSU agriculture. Despite definite downsizing of the traditional farms and the substantial increase of the individual sector, most land resources are still controlled by collective organizations. Internal restructuring of these collectives toward smaller autonomous units more consistent with principles of market operation is a task of highest priorities for all economies in transition.

Yet reforms in agriculture appear to have had a beneficial, albeit limited, effect on the rural population. Distribution of land to individuals has improved the food supply situation both in the village and in town markets. Restructuring of large farm enterprises has not produced rural unemployment, and the village now appears more attractive to urban residents. Individual producers show a definite commercial orientation, and are progressively gaining independence as the collective farms reorganize and their role in rural communities changes. Finally, private farmers, who have inseparably linked their fate with the process of agrarian reform, appear to be better off and more optimistic than members and employees remaining in collective enterprises.

The evidence is limited and not conclusive. Much remains to be done on all three levels of agricultural reforms so as to reduce the risks and create the right conditions for the emergence and stabilization of diverse market-oriented structures. Yet the experience so far is not all bad: land reform and farm restructuring in the FSU has definitely produced some encouraging positive results.

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