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**Evolving Farm Structures and Land Use Patterns in
Former Socialist Countries**

by

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Evolving Farm Structures and Land Use Patterns in Former Socialist Countries

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Evolving Farm Structures and Land Use Patterns in Former Socialist Countries

The former socialist countries in Europe and Central Asia (the ECA countries) entered the transition in 1989-91 with a common institutional and organizational heritage in agriculture: most land, regardless of its legal ownership, was cultivated collectively in large-scale collective and state farms that managed thousands of hectares and employed hundreds of member-workers; the commercial production from the collective and state sector was supplemented by subsistence-oriented individual agriculture based on rural household plots of less than one hectare, creating a distinctly dual agricultural structure; product markets and input supply channels were largely controlled by state organizations within an administrative command framework; production targets were set centrally; budget constraints to penalize underperformers virtually did not exist. This, in effect, was the Soviet model of socialist agriculture that had dominated the region since the late 1920s in CIS and since the early 1950s in CEE. Only Poland and former Yugoslavia partially deviated from this common pattern: here large-scale collective farms never achieved the same prominence as in other socialist countries, and their agriculture remained largely based on small individual farmers throughout the decades following World War II. Yet pervasive central controls plagued farmers in Poland and Yugoslavia exactly as in all other socialist economies.

The well-documented persistent inefficiency of socialized agriculture was an inevitable result of the command economy, which insulated the farms from market signals, imposed central targets as a substitute for consumer preferences, and allowed farms to function indefinitely under soft budget constraints without proper profit accountability. Yet this inefficiency also can be attributed to two “micro-level” factors, which sharply distinguished socialist agriculture from agriculture in market economies: exceptionally large farm sizes and collective organization of production. The typical farm size in socialist countries was an order of magnitude larger than the average in land-rich market economies, such as the USA or Canada. The excessive size was reflected not only in large land endowments, but also in the large number of workers employed (in absolute terms and per hectare of land). Such large farms are a rarity in market economies, because they are relatively inefficient due to high transaction costs (including the cost of monitoring labor and various agency costs associated with hired management) and can survive in a competitive environment only under special circumstances. As to the other micro-level factor, collective farms—in the form of production cooperatives or communes—virtually do not exist today in market economies, also because of their inherent inefficiency stemming from a variety of behavioral and governance features.

Related to these micro-level factors was also the issue of ownership and transferability of land. The stylized model of agriculture in market economies is characterized by a predominance of individual or family farms—not collectives—that operate on privately owned land and enjoy fully transferable use rights. In some socialist countries (the 15 republics of the Soviet Union and Albania), all land was nationalized and held in exclusive ownership by the state. In CEE countries, only a small portion (up to about 20%) of the land was expropriated by the state after World War II; most land remained in formal private ownership, but the landowners had no control over the disposition of their land. In either group of countries, regardless of ownership,

land was locked into fixed collective use patterns, and land transfers among users could be initiated only by central authorities. Even in Poland and Yugoslavia, where land largely remained in individual cultivation (and in private ownership), transactions were rendered virtually impossible by administrative barriers and land could not flow from less efficient to more efficient users.

Because of this common heritage, efficiency considerations suggested a fairly uniform conceptual framework for agricultural reform in all transition countries. On the macroeconomic level, the reform framework called for elimination of central controls, price liberalization, and introduction of hard budget constraints. On the sectoral micro-level, it included a shift from collective to individual agriculture and general downsizing of corporate farms, all in line with the established experience of market economies. The abolition of collective agriculture was naturally to be accompanied by privatization of land rights, which in Western thinking implies transferable property rights and functioning land markets. Ultimately, these actions were intended to change the entire system of producer incentives, leading to a more efficient and competitive agriculture.

Without in any way detracting from the importance of actions on the macroeconomic level, it is progress on the sectoral micro-level of the reform agenda that had the potential for a significant impact on the agrarian rural population. Individual responsibility and direct accountability were expected to cure free riding, shirking, and moral hazard that make collective organizations generally inefficient. Smaller farm sizes were expected to be more manageable and less wasteful, reducing the level of monitoring and other transaction costs between managers and workers that are typically high in large organizations. Property rights associated with private ownership of land (or secure tenure) were expected to induce farmers to put a greater effort into production. Finally, transferability of use rights was expected to facilitate the flow of land from less efficient to more efficient producers, or more concretely from passive landowners (such as pensioners in an aging population) to energetic active operators.

The Divergence of Land Policies

In this conceptual framework, transition to the market had to involve radical reconfiguration of the land resources in former socialist countries, including changes in both property rights and land use patterns. These issues are usually characterized under the rubric of land reform and farm restructuring. The agrarian policies of transition countries related to land reform and farm restructuring should be evaluated against the basic attributes of market agriculture, namely private land ownership, transferability of use rights, and individual or non-collective organization of production. An examination of these attributes reveals that, despite far-reaching commonalities imposed by the communist regimes on societies and economies, the agricultural sectors in CEE and CIS are in fact following divergent paths of market reforms, which gradually create a sharp “East/West divide” between the two subblobs in the formerly Soviet-dominated region. Since the common institutional and organizational heritage dictated a conceptually common framework for transition in all these countries, the divergence appears to be associated with differences in the specifics of implementation, which in all likelihood stem from inherent cultural, social, and political differences that persisted throughout the Soviet era, even if hidden under the surface by the pretense of socialist fraternity of nations.

The three main components of land policies in the region include the legal attitude toward private land ownership, transferability of land, and land allocation strategies. Most transition countries today allow private ownership of potentially all farmland, and agricultural land remains largely state-owned only in Belarus and parts of Central Asia. Private ownership, however, is not synonymous with the right to transfer land among users. The ten CEE countries plus the four “small” CIS countries (Armenia, Georgia, Moldova, and Azerbaijan) recognize private ownership of land and have no legal barriers to land transactions. In this respect, these fourteen countries have the most liberal land policies. Russia and Ukraine, which control the bulk of farmland resources in the region, legally recognize private land ownership, but buying and selling of land is legally restricted despite the recent passage of new land codes (October 2001 in Ukraine, July 2002 in Russia). The Ukrainian land code imposes a moratorium on buying and selling of land until 2005, whereas the Russian land code (or more specifically the July 2002 Law on Agricultural Land Transactions) allows regional authorities to set limits on both maximum and minimum size of holdings and grants them preemptive purchase rights. As a result, land transactions in Russia and Ukraine have been and are still mainly limited to leasing. Kyrgyzstan recognized private land ownership following the June 1998 referendum, but immediately imposed a 5-year moratorium on all transactions in land (thus moving backward by measures of transferability compared with the pre-referendum period, when land was state-owned but use rights were secure for 99 years and transferable). The remaining countries of Central Asia and Belarus generally do not recognize private land ownership, but they differ in their attitude toward land transactions. Land use rights are transferable in Kazakhstan and Tajikistan, whereas Turkmenistan, Uzbekistan, and Belarus prohibit any transactions in land.

An important caveat is in order concerning transferability. Even in countries that do not impose legal restrictions on transfer of land, land transactions are often severely restricted in practice. Restrictive factors include high transaction costs (registration fees, transfer taxes), complex administrative procedures (requirement to present a long list of documents, difficult access to land registry offices), or even social-policy limitations (such as the ruling in Poland that persons with more than 2 hectares of land lose their unemployment benefits from non-farming occupations). Local and foreign observers in Russia are concerned that various bureaucratic barriers and traditionally obstructionist attitudes, which are endemic to former Soviet societies, will in all likelihood severely constrain the emergence of buying and selling of land, which is now allowed by the new land code. As a result of such constraints, land markets are developing quite sluggishly even in the CEE countries. Yet the basic legal attitude toward transferability of land definitely has an impact on land market development. Countries without legal restrictions on land transfers register a higher frequency of transactions (both leasing and purchase) than the rest. In this respect, the new land code in Russia is a major step in the direction of ensuring transferability of farmland.

Private ownership of land is the norm in market economies, and it is certainly an appropriate goal for countries in transition. Yet successful market agriculture can develop on state-owned land (it suffices to recall the case of Israel, where most land is leased by the state to farmers for terms of 49 or 99 years). Security and transferability of tenure appear to be more important determinants of productivity and efficiency gains than legal property rights. The experience in developed market economies indicates that many farmers are “operators” and not “landowners:” they cultivate land that they do not own. Thus, farmers in Belgium, France, and Germany rent

more than 60% of the land they cultivate, while the overall “tenancy rate” in the 15 countries of the European Union is 40%. In Canada, 30% of farmed land is not owned by the farmers, and in the US, only 35% of farmed land is fully owner operated: another 55% is a mixture of own land with land leased from others and 10% is cultivated by farmers who do not own any land. In ranking the land privatization policies in transition countries, one should give separate scores for two dimensions of the process: one score for actual legal recognition of private ownership of land (as in a market economy) and another, totally independent score for transferability of land and security of tenure. Transferability is important no less, and perhaps even more, than private ownership for the development of land markets that enable the farmers to adjust the size of their holdings and allocate resources to the most efficient producers.

While restrictions on land transferability are a real barrier to flow of resources from less efficient to more efficient users and thus an obstacle to overall efficiency improvement in agriculture, pragmatic considerations suggest that temporary moratoria on buying and selling of land in transition countries may be necessary from political or social considerations. Policy makers in CIS and CEE are often concerned that immediate exposure of the new landowners to the full range of land market transactions after decades of collectivism may lead to negative social consequences, which may involve excessive concentration of land in the hands of speculators and foreign owners. Thus, Kyrgyzstan motivated the moratorium imposed simultaneously with the introduction of private land ownership in 1998 by the need to let the new landowners get used to the entire set of their property rights and fully recognize the implications of their decisions. The same considerations probably motivated the Ukrainian lawmakers when they renewed the moratorium on land sales until 2005 while in principle allowing buying and selling of land in the October 2001 land code. Psychologically, people need a delay period to adjust to the new reality before making irrevocable decisions.

To borrow an example from an area outside of agriculture, many recipients of mass privatization vouchers in Russia in the early 1990s blindly rushed to sell them to speculators and professional investors. They did not recognize the long-term value of the new asset and precipitously converted it into something familiar—cash. These early “voucher sellers” understood the implication of their irrevocable decision only much later, when gradual normalization had led to steep increases in the value of stock of the privatized companies, which they could have owned had they only avoided selling the vouchers. In Kazakhstan, unscrupulous managers of farm enterprises took advantage of the total lack of asset management experience among the rural population to entice the new shareholders to sell their land shares. In this way, large segments of the rural population were stripped of their main asset and land was concentrated in the hands of a small number of farm bosses. This negative effect probably could have been avoided had the government of Kazakhstan temporarily restricted buying and selling of land rights and instead limited transferability to short- or perhaps medium-term lease transactions. Such approach to transferability of land would allow rural people to postpone irrevocable decisions to a later stage, when the economic situation has normalized and individuals have become more cognizant of the implications of land transactions. To ensure that the temporary moratorium quickly achieves the intended educational effect, it should be accompanied by appropriate information campaigns explaining property rights and land market transactions to the new landowners.

Another dimension of land policy in transition countries is the land allocation strategy. All CEE countries plus the “small” CIS countries allocate land to beneficiaries in the form of physical plots. In Russia, Ukraine, Kazakhstan, and other CIS countries, beneficiaries usually receive paper shares that certify their entitlement to a certain amount of land within the local farm enterprise, without specifying a concrete physical plot (in addition to paper shares, rural families in CIS cultivate small household plots of less than 1 hectare – a long-standing tradition in the former Soviet Union that dates back to the 1930s). Allocation of physical land plots is clearly a better option in terms of potential transferability and impact on land markets. Ownership of a plot of land allows one to decide whether to farm it, sell it in return for a one-time lump sum, or perhaps lease it to somebody who can operate it more profitably, thus retaining the property rights “just in case” while earning a stream of future returns. If one holds a paper share, it represents fractional ownership in a large tract of jointly shared land, which in reality is managed and controlled by somebody else (typically the former collective farm in the village). Realizing land disposition options as a shareholder is much more difficult. The easy way is simply to leave the land share in the large farm that is already cultivating the land (as it always did in the past). Any other alternative will require negotiating with the current operator to identify, survey, and mark a physical plot of land that can be withdrawn for individual use from the jointly shared tract. Eventually, if the negotiations go well, the shareholder will end up in the same place as a person in a country that allocated land plots to beneficiaries from the start. Only this will have taken much longer and may involve considerable uncertainty as to the final outcome. For purposes of ranking land policies, allocation of physical plots gets a much higher mark than distribution of paper shares.

The last difference in land policy between CEE and CIS concerns the privatization strategy. The CEE countries (except Albania) have chosen to privatize land by restitution to former owners. The CIS countries (and Albania) have adopted the “land to the tiller” strategy: land is privatized to workers without any payment and in an equitable manner. Hungary and Romania are two CEE countries that used a mixed strategy: land was restituted to former owners and also distributed without payment to agricultural workers in the interest of social equity. The common explanation attributes the restitution-distribution dichotomy to the different length of time since nationalization or collectivization—80 years in CIS and 50 years in CEE. This explanation clearly carries a lot of weight, but a number of prominent counter-examples cast doubts as to its general validity. Thus, in CIS, Moldova, Ukraine, and Belarus rejected the concept of restitution, although the western parts of these countries were integrated into the Soviet Union after World War II, at the same time as the Baltic states, and the memory of private land ownership was much fresher than in Russia. In CEE, Albania deviated from the general practice of its neighbors and opted for distribution, not restitution. Perhaps the choice of restitution over distribution was determined more by the desire to make a clean break with the Soviet past than by the memory of land ownership. In other words, this was probably a strictly political decision, and not necessarily a decision driven by rational economic considerations.

Examination of the impacts of restitution versus distribution does not indicate anything that recommends one strategy over the other. Both are guided by clear justice principles, although the beneficiaries turn out to be different (former owners under restitution, “the tiller” under distribution). The distribution procedure with its strict egalitarian foundations may be simpler to design, as it does not require any decisions concerning former ownership rights. Yet both

procedures are equally complex to implement if extended to the ultimate stage of physical allocation of land plots to individuals. True, restitution typically ends with allocation of physical plots of land, which is the preferred allocation strategy according to our “scorecard.” But distribution is not necessarily restricted to paper shares. Albania, Armenia, and Georgia followed a strict “land to the tiller” strategy, and yet it took the form of distribution of physical plots to individuals. Azerbaijan is preparing to launch a similar procedure. Moldova is currently in the middle of a large-scale “share conversion” process that allocates physical plots to shareholders. Whether a country adopts restitution to former owners or distribution to agricultural workers, the major determinants remain the allocation strategy (plots or paper shares), the legal status of private ownership, and the transferability or tradability of use rights and property rights. Restitution and distribution get the same mark on our score card.

Table 1. Differences in the Implementation of Land Policy in Transition Countries

	Potential private ownership	Privatization strategy	Allocation strategy	Legal attitude to transferability	Land-policy index*
Hun	All	Restitution+distribution	Plots	Buy/sell, lease	10.0
Rom	All	Restitution+distribution	Plots	Buy/sell, lease	10.0
Bul	All	Restitution	Plots	Buy/sell, lease	9.2
Est	All	Restitution	Plots	Buy/sell, lease	9.2
Lat	All	Restitution	Plots	Buy/sell, lease	9.2
Lit	All	Restitution	Plots	Buy/sell, lease	9.2
Cz	All	Restitution	Plots	Buy/sell, lease	9.2
Svk	All	Restitution	Plots	Buy/sell, lease	9.2
Alb	All	Distribution	Plots	Buy/sell, lease	9.2
Arm	All	Distribution	Plots	Buy/sell, lease	9.2
Gru	All	Distribution	Plots	Buy/sell, lease	9.2
Mol	All	Distribution	Plots/shares	Buy/sell, lease	8.5
Az	All	Distribution	Plots/shares	Buy/sell, lease	8.5
Rus	All	Distribution	Shares	Lease**	6.7
Ukr	All	Distribution	Shares	Lease#	6.7
Kyr	All	Distribution/conversion	Shares	Moratorium	5.4
Kaz	Household plots	None	Shares	Use rights	5.4
Taj	None	None	Shares	Use rights	2.5
Tur	All	None; virgin land to farmers	Leasehold	None	4.0
Uzb	None	None	Leasehold	None	0.6
Bel	Household plots	None	None	None	1.3
Pol	All	Sell state land	Plots	Buy/sell, lease	9.6

* On a scale of 0 to 10: land policy index 10 corresponds to ideal market attributes, 0 to no market attributes. For computational details of the land-policy index see Lerman, Csaki, and Feder (2002), Ch. 2. The index does not reflect the existence of practical restrictions on transferability, such as high transaction costs or bureaucratic barriers.

**Buying and selling of land allowed by the Law on Agricultural Land Transactions passed in July 2002.

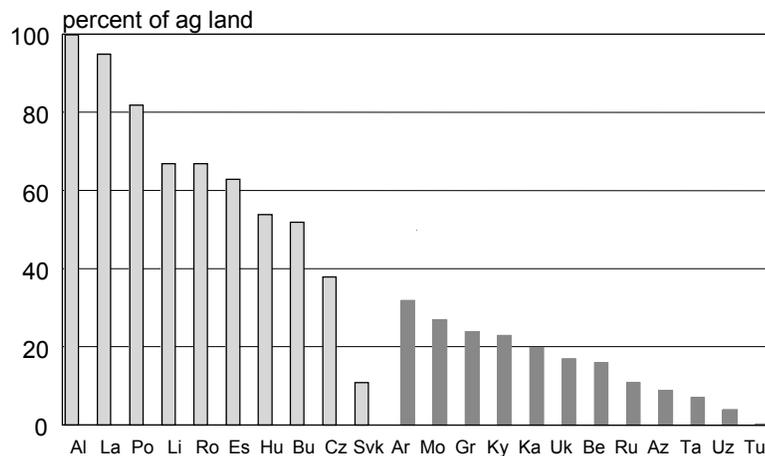
#The October 2001 Land Code imposes a moratorium on buying and selling of land until 2005.

Table 1 summarizes the differences in land policies across the ECA countries—recognition of private ownership of land, transferability of property and use rights, allocation of land in physical plots or paper shares, privatization by restitution or distribution. To quantify these differences, we have ranked the land policies on a scale of 0 to 10, where 10 corresponds to the ideal attributes: private land ownership, full transferability (at least in the legal sense), allocation in the form of physical plots (see the last column in Table 1). In this ranking of land policies, the CEE countries as a group get a score of 9 out of 10 and the CIS countries a score of 6. This is indeed significant divergence.

Individualization of Agriculture

Market economies are characterized by predominance of individual or family farms, with a smaller share of corporate farms managed by hired outsiders. How have the divergent land policies affected the transition from collective to individual agriculture in CEE and CIS? Individual agriculture is possible without land privatization, and land privatization does not necessarily create individual farmers. Yet primarily because of differences in land allocation strategies—paper shares versus physical plots—the extent of individual cultivation in CIS is substantially lower than in CEE (Figure 1). On average, 16% of agricultural land is cultivated individually in household plots and family farms across CIS, compared with 63% across the CEE countries (up from 4% and 14% respectively in the pre-transition decade). Although in CIS the share of individual agriculture in land is relatively modest, its contribution to agricultural product has been steadily increasing over time and now approaches (and in some countries exceeds) 50% of total agricultural output.

Fig. 1. Share of Ag Land in Individual Use in CEE and CIS:
1997



Land-policy decisions, and especially the specific land-allocation strategy (physical plots versus certificates of entitlement), determine the resulting mix between corporate farms and individual agriculture (Table 2). Countries that have opted for allocation of land in the form of physical plots (whether through restitution to former owners or distribution to workers) have a larger individual sector than countries that distribute land entitlements in the form of paper shares.

There is a strong correlation between the land-policy choices of countries and the degree of individualization in agriculture. A higher land policy score goes with a higher individualization rate: the CEE countries get 9 out of 10 for land policy and the degree of individualization is 63%; the CIS countries get 6 out of 10 for land policy and the degree of individualization is 16%. This is not surprising, as we have discussed the impacts of land policies on the shift of resources from collective to individual farming. Perhaps less trivially, there is also a fairly strong association between the degree of individualization and agricultural performance. All six countries showing

positive growth in agricultural output between 1992-99 are countries with a relatively high share of land in individual cultivation (more than 50% for CEE countries and more than 20% for CIS countries). Among the 16 countries that did not achieve agricultural growth, 10 have a relatively low degree of individualization. A formal view of the correlation is shown by the regression line in Figure 2. It seems that more market-compliant land policies lead to higher individualization of agriculture, which is in turn associated with agricultural growth.

Table 2. Restructuring Modes for Collective and State Farms

Allocation strategy	Immediate outcome	Resulting farm structures	Countries
Physical distribution of land and assets	Dismantling of collective structure	Individual farms	All CEE, Armenia, Georgia, Moldova
		New corporate units created by reconfiguration of individual holdings	CEE (except Albania), Moldova
Distribution of "paper shares"	Retention of former collective structure as a new organizational form	Individual farms established by withdrawal of shareowners	All other CIS
		Corporate units created by reconfiguration of shares inside the former collective shell	
		"Stay as is": Successor farm created by keeping the shares in the former collective	

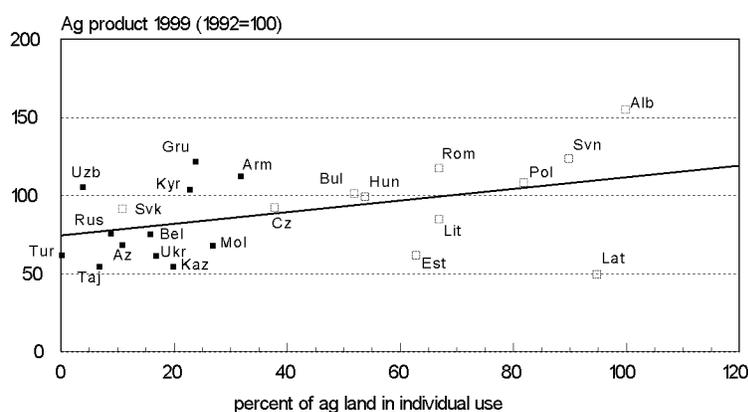


Figure 2. Change in agricultural product (1992-97) versus land in individual use. Legend: black squares – CIS countries; white squares – CEE countries; the straight line shows the regression fit with slope coefficient ($b = 0.32$) significant at 10% ($p = 0.08$), $R^2 = 0.14$.

A different analysis of the effect of individualization on agricultural performance was carried out for Russia (using official regional statistics). Across Russia's 80 regions, those with a higher level of individualization achieve higher productivity of agricultural labor, despite the fact that they employ relatively more labor in agriculture (Lerman and Schreinemachers, 2002). Figure 3 demonstrates that output per agricultural worker increases with the increase of the share of land used by the individual sector. The results were obtained by two alternative analytical techniques, and are statistically significant in both cases.

Ag Product and Productivity vs Individualization: Russia

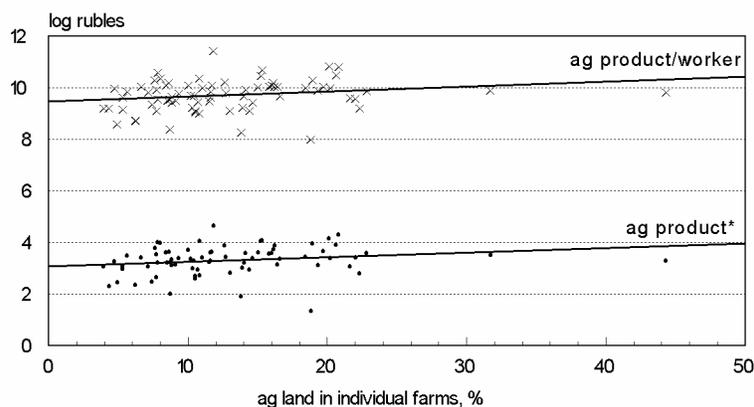


Figure 3. Productivity of agricultural labor in Russia (based on 1997 data for 80 regions).

* Adjusted for the effect of ag land and ag labor

The positive impacts of individualization are also evident at the rural household level. In CIS, the process of land reform consists of two main components: the assignment of paper shares to the rural population and actual allocation of land for augmentation of household plots. While a land share corresponds to an endowment of 10–20 ha, the average household plot is less than 1 ha after enlargement. Yet a bird in the hand is better than two in the bush: the land share remains on paper, while the household plot is allocated in a physical form for real individual cultivation. The average plot size virtually doubled in the early 1990s, the number of plots increased significantly, and the share of total agricultural land in household plots in the CIS countries rose from 4% in the 1980s to 16% in the late 1990s. The household plot is mainly a source of food for the family, but 10%-20% of the output is sold for cash in nearby markets. The cash revenue from these sales augments the income of rural families, and the household plot contributes altogether 40%-50% of the family budget (including the value of home grown products consumed by the family). Some families increase the household plot even further by leasing additional land from friends and neighbors. Other families pool the land resources of parents, grandparents, and married children to create relatively large holdings. Surveys of rural households show that the larger the plot, the greater is the surplus available for cash sales and the greater the contribution to family income.

Private farmers cultivating land independently outside the collectivist framework are another segment of the rural population that appears to enjoy the benefits of individualization in CIS. 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 employees remaining in farm enterprises come basically from the same population as private farmers, but they have a different set of attitudes and priorities. They prefer the relative safety of the traditional collective framework to the risks and uncertainties of independent farming. This may be attributed to personal attitudes toward risk, which are determined, among other factors, by age, education, and skills. Both groups give a fairly low evaluation of the general standard of living in their countries. Yet their responses in numerous surveys show that on the whole private farmers are better off and more optimistic than employees of collective enterprises (Table 3). Since private

farmers represent the ultimate individualization of agriculture, their positive assessment of family well-being—at least relative to the individuals who have decided to stay in the collective rather than face the risks of personal initiative—is evidence of the benefits of individual farming.

Table 3. Characterization of Well-Being and Optimism Among Independent Farmers and Employees of Corporate Farms in CIS (percent of respondents)

	Independent farmers	Farm employees
<i>Change of family's material situation in recent years</i>		
Improved	42	8
Unchanged	34	51
Deteriorated	24	41
<i>Adequacy of family income at present</i>		
Sufficient for subsistence (or worse)	45	70
Adequate for basic necessities	45	29
Comfortable – no material difficulties	10	1
<i>Perception of family's economic future</i>		
Better	43	14
Unchanged	47	55
Worse	9	31

Source: World Bank surveys for Russia, Ukraine, and Moldova 1994-98.

Persistence of Collective and Corporate Farm Structures

Despite reallocation of land to the individual sector in the process of land reform, large collective and corporate farms still play a much more prominent role in CEE and CIS than in market economies, where agriculture is primarily based on family farms. Various collective, cooperative, and corporate forms of farm organization continue to manage nearly 40% of agricultural land in CEE and 80% in CIS. As a result, the distribution of farm sizes in most transition countries retains the sharp duality that traditionally characterized socialist agriculture: a high proportion of very small farms (mainly household plots) control a relatively small proportion of land, and a small proportion of very large farms control a large proportion of land, if not most of the land (Table 4). This dual or bimodal distribution of land is at a sharp variance with the distribution observed in market economies (USA, Canada, the countries of the European Union), where most of the land is concentrated in mid-sized farms and the two extreme tails of very small and very large farms are much less prominent. The striking difference in land concentration between Russia and the USA (representing the pattern generally observed in market economies) is visually demonstrated in Figure 4. The Russia pattern is typical of the CIS and CEE countries that are listed at the bottom of Table 4 in the “sharply dual” category. The “normal” countries, on the other hand, approach the market pattern as represented by USA. Finally, the land concentrate curves for the “over-fragmented” countries are closer to the equal-distribution diagonal than the market pattern.

Table 4. Concentration of Land: Percentage of Agricultural Land in Top 10% of Largest Farms

Country	Percentage of farm land	Characterization of farm structure
Armenia	-10	over-fragmented
Georgia	-10	
Latvia	20	
Lithuania	30	
USA	35	
Canada	38	
EU15	40	
Slovenia	40	"normal"
Poland	40	
Romania	50	
Estonia	60	
Czech Republic	82	sharply dual
Bulgaria	90	
Hungary	92	
Slovakia	97	
Russia	95	
Ukraine	90	
Kazakhstan	99	

Source: Official country statistics.

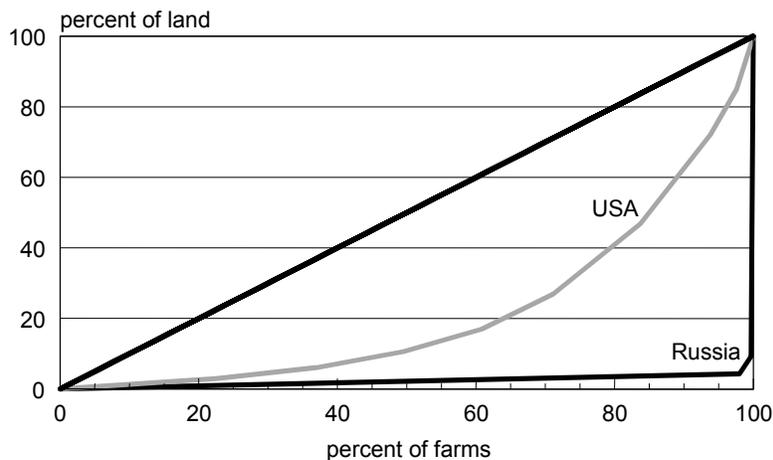


Figure 4. Land Concentration: Russia and USA (1997).

Although large collective or corporate farms remain prominent throughout the region, important differences are beginning to emerge between their organizational forms in CIS and CEE. Most large farms in CIS continue to operate like the former collectives, without significant change in size or management, although they are now registered under a variety of “market sounding” names (joint-stock societies, limited liability companies, partnerships) and are not called “kolkhozes.” The workers-shareholders of these farms report very little organizational change

since the beginning of reforms in 1992-93 (Table 5). By contrast, the corporate farms in CEE—called “companies,” not “cooperatives” any more—are substantially smaller than the original collectives (averaging less than 1,000 ha, down from 3,000–5,000 ha before the transition) and are beginning to show greater sensitivity to market signals, including the ability to adjust the labor force to operating needs in the interest of higher profitability. Overall, the CEE corporate farms appear to be developing the basic attributes of market-oriented operation that are still not observed in most large farms in CIS.

These emerging differences in farm organization are linked to differences in the philosophy of agricultural transition. Policy makers in CIS essentially perceive market agriculture as based on successors of former collective and state farms, which are to be subjected to a “horizontal” transformation toward improved productivity but otherwise remain largely unchanged in scale and scope. Politicians in CEE, on the other hand, appear to have recognized the need for radical changes in the farm-enterprise sector, including introduction of hard budget constraints and enforcement of strict bankruptcy procedures for failing farms, which radically change the organizational behavior of farm enterprises and sharpen their response to market forces. While CIS policies show a definite bias toward successor farm enterprises at all levels of government, CEE policies often favor individual farms and show a negative bias toward large corporate farms, thus forcing them to shift even further toward new market-oriented forms of behavior.

Table 5. Shareholders’ Assessment of Changes After Farm Reorganization – Ukraine and Moldova (average percent of respondents)

	Worse	Better	No change
General situation on farm	35	11	45
Worker relations	23	12	55
Motivation	23	17	52
Average score	27	14	53

Source: World Bank surveys.

As noted in the previous section, individualization of agriculture has positive impacts at both the sectoral and the household level. Yet there has been no rush into individual farming by members of former collectives, and on the whole large corporate farms have not disintegrated. Different motivations are possible for the mutually exclusive decisions to farm one’s land individually or “collectively.” Individual risk preferences provide one explanation. A collective or cooperative farm may provide lower income but in a relatively safe, non-volatile environment. This in itself is sufficient for some individuals to forgo the potentially higher incomes of individual farming that are necessarily associated with much higher uncertainty. In CIS, the privatized land resources represented by the individual shares are typically left by the shareowners in joint cultivation in the former collective farm or some corporate successor. Overall, a very small proportion of rural residents opt for exit from collectives and the individual farming sector is mainly growing through the increase of household plots assigned to collective farm employees. Another explanation, particularly relevant in CEE, is that many of the new landowners created through restitution left farming long ago and now have jobs and property in urban areas. They have no immediate personal use for their restituted land, and yet they would like to keep this newly found asset in their ownership rather than sell it. Entrusting the land to a larger corporation or cooperative in return for lease payments makes good economic sense. These new landowners, of course, also have the option of leasing their land to other private individuals, but

this may be perceived as riskier than leasing to a large organization, which is regarded as a more reliable source of lease payments.

But there are at least two other broad sets of reasons that may create barriers to transition from collective to individual agriculture. One set may be characterized as market failure or, more modestly, market imperfection. The other group is related to regional and local power play and politics.

There is generally no evidence of economies of scale in primary agricultural production, while individual or family farms are easier to organize and operate than corporations. This accounts for the predominance of individual farming in market economies, where an individual farm is not necessarily a very small farm: the optimal farm size is determined in each particular case by the managerial capacity of the farmer, and it may be quite large for highly capable individuals. Corporate farms normally develop in special niches, where the corporate form of organization and the relatively large scale of operation have clear advantages. Thus, poultry and pig production are easily amenable to industrialization and corporatization, especially if integrated with processing.

Yet, in an imperfectly competitive environment, large farms may have easier access to input supplies, product marketing channels, and credit facilities. This gives them a practical advantage relative to smaller individual farms and encourages the creation of large corporate farms in higher proportions than in a perfect market environment. Such market imperfections are observed in all market economies, and individual farmers typically overcome them through the creation of service cooperatives. A service cooperative is a large corporation that interfaces between the member-farmers and the imperfect market to exploit the special advantages enjoyed by large-scale operations. It can wield the combined power of the productive resources of 300 or 500 members when negotiating with input suppliers, product marketers, or banks, and yet the members keep their individual identity in production. The two-tier structure of individual family farms supported by a network of service cooperatives is a common phenomenon in market economies. It evolves naturally in any community of individual farmers who seek to overcome barriers to competition and access to market services.

The situation is more complex in CEE and CIS. The markets in transition countries are still far from perfect, and the established large corporate farms that have had decades of experience operating in the former socialist environment indeed may have substantial advantages in access to these imperfect markets compared with newly created and relatively inexperienced individual farmers. As a result, there is little motivation for individuals to exit from existing collectives and corporations and force their breakup through the creation of family farms. Potential farmers report in field interviews that, in the prevailing environment, they will be strongly disadvantaged relative to the established large corporate farms that succeeded the former collectives. Farmers interviewed in areas where individual farms are created in sufficient numbers display strong psychological resistance to the formation of service cooperatives: they see too much similarity between the collective organization that they have left behind and the cooperative organization advocated as a market solution for their difficulties. As a result, they prefer to fight it out on their own, individually, from a position of inferiority relative to the large farms, and unwittingly forgo the strengths and benefits that true voluntary cooperation imparts to the individual members.

Underdeveloped market services and other market imperfections in ECA transition countries apparently explain the latest empirical findings, which indicate that individual farms still have not achieved a clear efficiency advantage compared to large-scale corporate farms – the successors of former collectives and cooperatives. Table 6 shows that the technical efficiency scores of individual and corporate farms are practically the same across the region (Hungary is the only country where the technical efficiency of individual farms is significantly higher than that of cooperatives – but not of other corporate farms). This evidence goes against the prior expectation of higher efficiency of individual farms, as suggested by world experience, and the indications of positive impact of individualization on performance, presented in the previous section, but it certainly refutes the traditional socialist view that justifies the emphasis on large collectives by arguments of economies of scale. Yet, as long as the efficiency balance has not shifted clearly toward individual farms due to negative biases in the underdeveloped market environment, it is not surprising that large corporate farms continue to play a prominent role throughout the ECA region.

Table 6. Mean Technical Efficiency Scores: Individual and Corporate Farms

	Individual farms	Corporate farms
Hungary	0.58	0.44 (coops), 0.50 (new companies)
Czech Republic	0.62	0.57
Bulgaria	0.44	0.44
Belarus	0.54	0.58
Ukraine	0.55	0.59
Moldova	0.54	0.56
Turkmenistan	0.72	0.72

Notes:

Hungary, Czech Republic, and Bulgaria: crop farms, Mathijs and Swinnen (2000).

Belarus, 1999 World Bank survey, Data Envelopment Analysis (DEA); Ukraine, 1998 World Bank survey, DEA; Moldova, 1997 World Bank survey, Stochastic Frontier (SF); Turkmenistan: 1998 World Bank survey, SF.

Closely related to the whole issue of market imperfections is the question of power politics at the local and regional level. In many countries, especially in CIS, the regional political system still retains many of the crude interventionist features that characterized the socialist command economy. Even if the central government no longer interferes directly in farm operations through plans and targets, the regional authorities often preserve the traditional pattern of prescription and proscription. Although regional governments no longer command central budgets that they can distribute among their favorite farms, they often have access to other resources and authority mechanisms that can be used to force compliance with behavior in their interest.

There is a symbiotic relationship between the management of large collective and corporate farms, on the one hand, and the regional authorities, on the other. The large farms still represent the organized backbone of agriculture in each region, and even though they often produce less than 50% of agricultural output, they are much easier for the local authorities to control and tax than the thousands and tens of thousands of individual households. The organizational logic that fueled the collectivization strategy in the Soviet Union in the 1930s and then in Central Eastern Europe in the 1950s remains equally valid today: it is easier for the authorities to deal with a small number of large farms when trying to meet budget targets, food availability objectives, and other procurement goals. In return for the rents and payoffs that the local authorities extract from the large collective farms, their managers are rewarded with preferential access to inputs and

credits, as well as personal prestige and other perquisites. This interplay between managers of large collective farms and regional authorities acts to preserve the existing farm structure, suppressing the expected shift from collective to individual farming and to viable corporate farms that act like business entities accountable to their shareholders.

This phenomenon has largely disappeared in countries and societies that became highly democratized during the transition. Yet in less democratized countries with strong remnants of the former authoritarian mentality it persists and, together with market imperfections, plays a role in shaping the farm structure. Generalization is impossible for lack of data, but the specific case of Russia demonstrates that agriculturally productive regions, where large collective farms are still a potentially rich source of payoffs for the regional authorities, have little tendency to reform. Farms in agriculturally poor regions, on the other hand, are less attractive as a cash source or provider of strategic agricultural products (e.g., grain) for the regional authorities and there is a higher likelihood that they will be left alone to adjust and adapt to the new environment, possibly breaking up into a large number of smaller units or even individual farms in the process. This prediction is borne out by the election results in Russia, where the fertile agricultural provinces form the “Red Belt” that consistently returns the conservatives to power (Table 7). It is also supported by recent empirical findings of a World Bank study in Russia, which shows that the agricultural sector in the fertile Saratov Oblast is much less reformed than the agricultural sector in the less fertile Leningrad Oblast (Amelina, 2000).

Table 7. Average Economic Indicators for Regions with Predominantly Conservative and Predominantly Reformist Voting Patterns in Russia’s 1999 Duma Elections

	Most conservative regions (29.4% of national vote)	Most reformist regions (16.7% of national vote)
% of agriculture in regional GDP	15	6
% of labor in agriculture	17	6
% of budget to agriculture	7	3
% of urban population	62	80

Note: The two political-preference categories include the 25 regions with the highest percent of votes for the bloc of 8 conservative parties and for the bloc of 5 reform-minded liberal parties, respectively. The numbers are averages for the regions in the two categories. All differences are statistically significant at 5%.

Source: Pepijn Schreinemachers, 2001 (unpublished).

Barriers to individual farming and persistence of large-scale collective or corporate farming in CEE and CIS thus may be explained by various factors: personal risk preferences of individual landowners, lack of alternative occupation opportunities, market imperfections, cronyism and special relations between regional authorities and farm managers, and the desire of local authorities to use the farm sector as a tool for social and political objectives. All these factors play a certain role, but their specific importance or weight varies from country to country depending on local conditions. In combination, they maintain the proportion of collective and corporate farms in transition countries at a higher level than in established market economies.

Performance and the Policy Environment

Agricultural performance in CEE and CIS is correlated with the degree of individualization of agriculture, which in turn depends on each country's choice of land policies. Yet the discussion in the preceding section has highlighted a range of additional factors that impact on the shift from collective to individual farming, and thus probably on agricultural performance. The most general among these factors are the market environment and the socio-economic norms that govern the human relations within the agricultural sector.

Land policies are just one component of the market environment for agriculture. Additional factors include liberalization of price and trade policies, farm restructuring and development of land-reform institutions, privatization and demonopolization of agro-processing and input supply, development of rural financial systems, and establishment of a market-oriented institutional framework. A country scorecard can be constructed for each of these factors, like the scorecard for land policy discussed above. Averaging the scores for each of these components, one obtains an index that reflects the level of market reforms in agriculture. This index (constructed annually by the World Bank's Environmentally and Socially Sustainable Development unit) is more general than the land policy score used previously, as it incorporates additional dimensions of agricultural reform beyond land policy. The results, however, are essentially the same: countries with a higher level of the agricultural market reform index (referred to in short as the ECA index) show better agricultural performance.

A similar positive association is observed when relating agricultural performance to the World Bank's Country Policy and Institutional Assessment (CPIA) index, which is based on four groups of policy variables that are not directly related to agriculture: macroeconomic management and sustainability reforms; policies for sustainable and equitable growth; policies for reducing inequalities; and public sector management. A more comprehensive aggregate index incorporating in addition the Freedom House Freedom Index, which includes assessment of democratization and corruption, and the Euromoney Creditworthiness Index, which assesses the development of financial institutions and the risk level associated with each country's transition policies, demonstrates that higher values of the index are associated with smaller decline in agricultural output.

The CEE countries receive consistently higher scores than the CIS countries by all policy-related indices. An average index incorporating five standard policy indices (with equal weights) gives a score of 6.6 for ten CEE countries and 3.8 for twelve CIS countries. More advanced policies go hand in hand with better economic results. In terms of agricultural performance, the agricultural output in 1999 is practically at the 1992 level for CEE and 20% below the 1992 level for CIS. In terms of overall economic performance, CEE countries show a healthy 20% growth in GDP between 1992 and 1999, while the CIS countries register a drop of 20% in GDP during the same period. Finally, in terms of developments in agricultural employment between 1992 and 1999, labor productivity in CEE rose 28% following a 20% reduction of total agricultural labor, while in CIS labor productivity dropped 24% following a 10% increase in total agricultural labor. The relationship between reform policies and performance across different subgroups of countries in CEE and CIS is illustrated in Table 8.

The tangible differences in agricultural and economic performance between the two groups of countries are clearly related to differences in the general policy environment, as well as differences in land policy. It is very likely that the political, social, and macroeconomic factors characterizing the different policy environments in the CIS and CEE, as reflected in the policy-oriented indices, have in fact influenced their different land reform decisions. Land reform alone may have been insufficient to trigger and sustain the divergent trend, but combined with political commitment and resolve it has produced the patterns of divergent performance that we observe today. Countries that decisively implement market-oriented policies—in agriculture, in the whole economy, and in society in general—are outstripping the reluctant reformers by measures of both agricultural and overall economic growth. The main message is that market reforms in general, with land reform as part of the overall policy package, have been reflected in better agricultural and economic performance.

Table 8. Performance Ranking and the Policy Index by Groups of Countries in CEE and CIS

	Change in GDP	Change in Ag Output	Change in Ag Labor	Change in Ag Labor Productivity	Performance ranking (1=best, 5=worst)	Policy Index# 1997-98
West CEE (4)*	Up	Down	Sharp down	Up	1	7.3
East CEE (4)**	Down	Steady	Steady	Steady	2	6.0
Transcaucasia (3)	Down	Up	Sharp up	Down	3	4.3
European CIS, Kazakhstan (5)	Down	Down	Down	Down	4	4.1
Central Asia (4)	Down	Down	Up	Down	5	3.0

* Czech Republic, Slovakia, Hungary, Estonia.

** Bulgaria, Romania, Latvia, Lithuania

On a scale of 1 to 10: higher values imply closer to market environment. Calculated as simple average of five policy-oriented indices: the ECA Index (Csaki and Nash 1998), the Freedom Index (Karatnycky et al. 1997), the Liberalization Index (de Melo et al. 1996), the Creditworthiness Index (*Euromoney*, September 1998), and CPIA Index (internal World Bank documents; the methodology of calculation is available from the authors on request).

Implications for Agricultural Strategies

Our analysis suggests that policy makers aiming for a transition from the former socialist structure to an efficient and viable farm sector should place the emphasis on individual agriculture and corporate entities with strict business orientation that operate under hard budget constraints. We cannot ignore the evidence of market economies: agriculture is predominantly organized around individual farms, with a small share of corporate farms, and certainly not collective or labor-managed farms. Albania, Armenia, Georgia, Moldova, and more recently Azerbaijan and Kyrgyzstan are examples of countries that move toward complete individualization. In these countries, governments and the international community should support the process by developing the institutional tools of individual land management, including titling, registration, extension, and farmer education.

In countries where fast transition towards individualization is not feasible for social and political reasons (e.g., Russia, Ukraine, Belarus, Central Asia), the strategy should focus on creating the conditions that provide inducement to the breakup of the large corporate farms into farms of

more efficient size given local circumstances—farms that typically will be much smaller and certainly more manageable. Various subsidization avenues allowing “restructured” farms to avoid being exposed to market discipline need to be curtailed, as these only serve to slow the transition process and sustain farms that are not economically viable. This implies also that central governments need to induce local authorities to cease viewing corporate farms as a tool of social policy (e.g., a source of life-time employment for the rural population or a source for producing cheap food). A level playing field is required that allows farms of all structures and sizes to operate if they can maintain viability under market conditions. The procedure for breakup of non-viable corporate structures needs to be in place, thus facilitating the emergence of smaller farms where larger farms have failed. Identification of land ownership or land rights entitlements with distinct tracts of land is an important ingredient of such a procedure.

Dismantling of large farm enterprises, as implemented in Albania, Armenia, Georgia, and to a certain extent Romania, is the most direct path, but not the only path to the creation of an agriculture dominated by family farms. Distribution of land and asset shares can serve the same purpose, as is becoming evident in Moldova. To be effective, however, the first stage of allocating paper shares must be followed by a second stage in which land and assets are distributed to individuals in kind. This is the only way to achieve genuine restructuring of the former socialist farms. A possible strategic direction that combines the advantages of individual enterprise with economies of scale of corporate organization is to support a two-tier agricultural system. In this system, land and production are managed by individuals, whereas services are provided by corporations or cooperatives. This is similar to the system practiced in the Israeli moshav. This is also similar to recent developments in Russia, where according to anecdotal evidence some former farm enterprises act as a service shell for household plots, which are responsible for all production. The extent to which these service shells evolve into genuine service cooperatives for individual producers will ultimately depend on the elimination of subsidized input deliveries by local authorities and introduction of hard budget constraints requiring strict repayment of all debt.

As we have noted previously, an individual farm is not necessarily a small farm. In the USA, the average family farm controls 144 ha and the average family corporation 443 ha (USDA data). Moreover, world experience indicates that leasing of land is an important mechanism for farm enlargement: in Western European countries with a highly developed practice of leasing land (i.e., countries in which more than 70% of farmed land is acquired by leasing), the average farm size is 77 ha, which is significantly higher than 46 ha in countries with less widespread leasing practices (Eurostat data). To exploit the full potential of individual farming, the strategy must ensure relatively free transferability of land from the state to private users (either in ownership or in long-term leases) and, more importantly, among private users. This naturally involves development of land-market institutions, including titling, registration, full cadastral services, and possibly also mortgage banking. Yet these technical aspects on their own are not enough. Governments in the region need to be convinced of the importance of land transactions for efficiency and productivity improvement. While there is much concern among various observers and policy-makers regarding the damage of excessive land fragmentation and the need for land consolidation, transferability of land should be recognized as the recipe for curing these problems. Land policy should aim for elimination of restrictions on land transactions (including

prohibition on corporate and foreign land ownership, which persists in some CEE countries) and lowering of fiscal and administrative barriers (taxes, fees, bureaucratic requirements).

The thrust to promote transferability of land by international bodies must be managed so as to avoid possible conflicts with countries that do not wish to recognize private land ownership. World experience shows that in most cases transferability and security of tenure are more important than formal ownership for efficiency and productivity increases. The proven capacity of rental markets to improve land allocation suggests that excessive focus on convincing ideologically stubborn governments to relent in this regard may be counter-productive. Rather, progress on legitimizing rental markets and providing the legal and enforcement apparatus for long-term leases may prove to be a more feasible objective in the medium term.

A related issue is the disposition of large areas that for various reasons (typically relating to political, historical, and ideological factors) are maintained under state ownership. The ultimate objective is to privatize the ownership of such land, but as has been argued above long-term leases to private operators provide for a fairly efficient utilization of such land. The focus of the policy discussion should be on ensuring that the access to such land is available to all potential operators, rather than only or preferentially to those who intend to manage very large farms. Competition in accessing leases from the state is also necessary to avoid a hidden subsidy (through artificially low rent) to farm entities that ultimately would not be viable.

The general lessons and conclusions that we draw from a decade of transition in CIS and CEE are schematically summarized in Table 9.

Table 9. Lessons of Transition in the Farm Sector

General patterns of success

- Privatization without true reorganization does not lead to performance breakthroughs
- Better agricultural performance goes with
 - larger individual sector
 - greater liberalization
 - better performance of the overall economy
 - greater political commitment to reform
- Change varies across the region depending on
 - government's commitment to reform (both executive and legislative branches)
 - regional and local acceptance of new ownership modes and farm structures
 - presence of hard budget constraints for corporate farms
 - emergence of supporting market services
- CEE countries as a group have undertaken more of the steps associated with better performance and are outperforming the CIS

Lessons for governments and the international community

- Achieving agricultural potential is not possible without true restructuring of farms
 - Subsidization cannot be effective in the absence of performance criteria, transparency, a well-defined time frame, and well-conceived targeting
 - Formal privatization and formal adoption of reform do not necessarily imply real change in farm operation and performance
 - Local power group alliances involving regional governments and the former collective farm leaders can stall change as the old pattern of farm organization and operation may suit their interests
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