# IX: Scenario 4—How Will Better Functioning Land Markets Affect Animal Agriculture?

*The lack of fully functioning land markets is to some extent an obstacle to restructuring in the countries under consideration in this study. The lack of full transferability prevents land from moving to its most efficient uses and tends to perpetuate the fragmented farm structure. In this chapter, we present a model scenario for Hungary. We assume that a functioning land market will cause land to be taken out of agricultural production and impose a reduction of the land base on the model. The result is higher land prices, which lead to higher prices for nontraded feeds. Cattle, which depend more than other species on nontraded feeds, are negatively affected—there is a significant decline in cattle births and exports of live cattle.*

The transition process has led to a situation where land generally has a very low value. At the same time, the lack of functioning land markets makes it difficult for producers to acquire additional land. This leads to a situation in which marginal land remains in production instead of moving to more efficient uses. In addition, users who have virtually free use of land but no permanent rights to it have little incentive to take care of their land, leading to production practices that can further degrade the land. In this section we lay out some of the economic consequences of this situation and present a scenario of rising land prices for Hungary.

## Land Reform Confers Property Rights

Land ownership rights are part of the larger category of property rights that include the following characteristics:

**Exclusivity.** Owners have exclusive right to the use and disposition of their property. Owners may use the land in whatever manner deemed most useful: they may either use the land themselves or assign that use to specific persons, excluding use by all others. This is in contrast to a situation of common grazing rights—a common land tenure feature in many countries and even in the United States—where grazing is permitted on public lands, for a fee.

**Inheritability**. Inheritance laws, or their lack, influence land structures by affecting farmers' decisions about final disposition of their land. Countries with laws that limit inheritance often have relatively fragmented land ownership patterns.

**Transferability.** This refers to the right to allocate land by sale, lease, or rent to whomever one wishes. In transition economies, the ability to allocate land to others is limited. Especially in Russia and Ukraine, allocating land to other than the collective or cooperative of which one is a member is not a practical alternative. Lack of transferability also contributes to fragmented land ownership patterns.

**Enforcement.** To be meaningful, property rights must not only be clearly spelled out in law, but must be enforced both in fact and in perception by economic agents. In transition economies, this criterion is seldom met.

Land rights accrue to both owners and users of land. Frequently, the two are not the same agents. Land rights are defined by government policy and governments may restrict rights by limiting the degree of exclusivity, inheritability or transferability. In the United States, for example, exclusivity is limited by local zoning laws placing limits on land use. In the transition economies, limits on foreign and corporate ownership, taxes, and restrictions on sales and inheritances affect the property ownership and use rights conferred with land reform.

Enforcement remains a major problem in transition countries. Especially in the NIS countries, difficulty and delay in registration, titling, determining boundaries, and settling disputes all add to the uncertainty of buying and investing in land. Also, there is a lack of trust in government, especially in Russia, where the rules governing land ownership result from presidential decrees rather than statutes. If owners feel that land may be appropriated or that change in government could change the status of their property rights, the effect is to undermine land rights and any incentive to own or improve land.

Proper stewardship of the land depends on an "interested" owner with a financial stake in the care, maintenance, and use of the land. That person may be the farmer or a landlord, but absent a financial stakeholder, land will in all likelihood be abused. A reform program that gives ownership rights to citizens is expected to remedy the major shortcoming of collective ownership, which was that no one had a financial stake in maintenance, investment, or stewardship of land.

## The Land Market in Transition Economies

Officially, land use rights are transferable in all five countries, either through sale or lease. Actual sales in transition economies are rare. Some evidence suggests that in many transition economies land turnover is about 1 percent a year. The rate of transactions in Hungary is higher, about 2.5 percent a year. These estimates compare to EU countries where the rate of land sales, though variable, average about 7 percent a year.

In the Russia and Ukraine, sales are even more rare. Some error of definition may exist because people buy and sell dachas and the associated land, but these are not considered land sales. Sales occur in those regions that have enabling legislation on the books, but as yet there is no national land code. NIS data separate completely private transactions from those to which the state is a party. The data for Poland, Hungary, and Romania do not make that distinction. At any rate, land transactions are still uncommon in the transition world. The reasons include limitations on transferability rights, absence of secure property rights, and lack of financing. Note, also, that in some places the state may still be giving away land. Small subsistence farmers may still be acquiring neighboring plots through informal arrangements. Apart from sales, leasing appears to be the dominant form of land transaction in these economies. In Hungary, as much as 70 percent of all agricultural land is leased. In Poland it is about 20 percent.

While data for the NIS is scant, World Bank surveys suggest that about one third of the land is leased in Ukraine. Belenkiy and Wegran (1997) conducted a survey in Russia, which indicated that land leasing from local administrations accounted for more than 99 percent of land turnover in the 1993-1995 period. Actual land purchases were less than one percent. The study showed that among the small amounts purchased, most land is used for small-scale agriculture and collective gardening, i.e., dacha plots.

## Land Tenure and Economic Efficiency

Land tenure affects farmers' basic operational decisions. If land tenure is uncertain—that is if right of exclusivity, transferability and inheritability are weak or uncertain—a farmer will have no incentive to invest in land or land enhancement and maintainance (e.g., best farming practices) activity.

In fact, it probably makes little difference whether the owner and the user are one in the same or two different persons as long as landowner and tenant rights are transparent and enforceable. Someone, either the landlord or the owner/farmer, must have a vested interest in maintaining and husbanding the land resource for the long term.

Changes in land tenure systems can affect economic efficiency and the allocation of resources in agricultural production. In the pre-transition period, land like all other inputs was procured. Land was not a remunerated input. Like other inputs, especially fertilizers and chemicals, land was overused. In the post-reform period, given the weakly enforced systems of land rights, land in all likelihood remains an unremunerated, or at least underremunerated, input. If land remains an underremunerated input, investment in land and land-enhancing activities remains below what it would be if land prices reflected their value as an economic input.

## Land Rights, Farm Organization, and Economic Efficiency

Efficiency can be considered two ways: technical or economic efficiency. Technical efficiency in which a farm unit maximizes output with respect to a given set of inputs and the technology of combining them. That is, the firm operates in a technically efficient manner given the selected technology among a set of possible technologies. Either a large, highly mechanized farm or a small, labor-intensive farm can be technically efficient if it uses its respective resources in a manner such that there are no redundant inputs. Economic efficiency adds to technical efficiency the constraint that inputs should be combined, not only so that none are redundant, but also so that the technology selected should be profit-maximizing, which given that the firm is a price taker, means the firm is cost-minimizing.

Absent a land tenure in which land is remunerated as an economic input, land will be used as if its price is zero, which implies overuse. Extensive overuse implies farming

on land that would not be farmed if the land were priced according to its opportunity cost value, e.g., farming highly erodible lands. Intensive use implies maximizing output in the short run without regard to long-term maintenance of the resource, e.g., overgrazing.

## Modeling the Impact of Rising Land Prices in Hungary

One modeling scenario is included that directly affects land use. It was assumed that liberalization of land ownership laws in Hungary would result in land being bid out of agriculture. The view of some Hungarian agricultural economists is that some land is of such low productivity that it should not be cultivated.[9] In all likelihood it would move to uses such as grassland or forest. Hence, the supply of land for agricultural use would decline. The scenario assumed the land would completely exit agriculture. If it returned to grassland, it could be grazed. However, the energy value of the feed obtained as pasture would be less than that obtained from grain production. This possibility was not modeled here.

The effect on livestock is secondary because land enters livestock production primarily through land necessary to produce feed. Because of the zero cost shares associated with land in producing and processing livestock, poultry, and raw milk, the decreased agricultural land base affects livestock sectors in the model largely through acreage reductions in three nontraded feed inputs: sugarbeets, silage, and forage. These nongrain feed inputs are significant components of cattle feed, comprising 4, 31, and 10 percent of the cost of cattle production, respectively. Acreage reductions for sugarbeets (18 percent), silage (31 percent), and forage (21 percent) lead to domestic price increases of 3, 2, and 14 percent, respectively. Since these items are most closely associated with cattle feeding, the principal impact on the livestock sector is a 16 percent reduction in cattle births. Higher feeding costs reduce milk output slightly. In general, however, the domestic processing end of the cattle industry is not greatly affected. Instead, exports of live cattle fall by 13 percent (table IX-1).

[9] Authors' discussions with Hungarian Ministry of Agriculture officials.

**Table IX-1—Hungary: Impact of agricultural land base reduction on animals and animal products**

| | Pork/hogs | Beef/cattle | Birds/ poultry meat | Milk |
|---|---|---|---|---|
| | *Percent change from 1994-96 base* | | | |
| Processing sector | | | | |
| Cost share: land | 0 | 0 | 0 | 0 |
| Price | 0[1] | 0[1] | 0[1] | 1 |
| Capital returns | -0.4 | -0.2 | -0.3 | 1 |
| Slaughter | 0 | 0 | 0 | 0 |
| Output | 0 | 0 | 0 | 0 |
| Exports | 16 | -2 | -2 | n.a. |
| Production sector | | | | |
| Cost share: land | 0 | 0 | 0 | 0 |
| Price | 1 | 0[1] | 0 | 2 |
| Capital returns | 0 | -16 | 0 | 0 |
| Births/output | 0 | -13 | 0 | -1 |
| Ending inventory | 0 | 0 | 0 | 0 |
| Exports | n.a. | -13 | n.a. | n.a. |

[1]Price change is zero because the good is traded.
n.a.= not applicable because the good is nontraded.

Pork and poultry rely more on traded feeds, the prices of which are unchanged. Consequently, a reduction in the land base has almost no impact on either the live animals or the processed output of these species.

Apart from land responses, the value of land is linked with labor demand and wages. The movement of labor out of agriculture in response to rising wages in other sectors could also have a secondary impact on land markets. Higher wages in the nonagricultural sector would begin to bid labor out of agriculture, but the increase in the land-to-labor ratio would boost labor productivity and farm income. This would create a demand for additional land and would be the impetus for farm consolidation that so far has been absent in the transition economies. Rising land values would make land ownership a more profitable enterprise for both farmer/owners and landlords. These effects are not directly modeled because they are secondary effects of initial shocks to the system. But the longer run response would suggest that changes in the agricultural labor markets would lead to higher farm incomes and land consolidation. What is still absent is a modern financial system that would provide liquidity to the sector for long-term investment as well as fewer restraints on land ownership and sale.