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**Armenia: Reform and Growth in Agriculture\***

by

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Abstract

This paper reviews the experience with land reform in Armenia, one of the first ex-Soviet republics to move in this front. Fundamental to the success of the land reform was the clear repudiation of collectivized agriculture through a simultaneous liberalization of prices, the ending of mandatory state orders, and the establishment of a system of property rights. The task facing the authorities now is to foster institutional changes that would increase the supply of financial resources and human capital to the sector.

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## I. Introduction

Privatization of state-owned assets, including land, is one of the main issues in undertaking the transition to a market economy. The process of land reform has never been a simple task as governments have had to confront pre-established state-determined patterns of production and distribution of food, as well as power structures vested in the ownership of a country's most precious asset, land. Armenia was the first former Soviet Union (FSU) republic that embarked in a land reform process. Results under the reform have been quite successful and have contributed to the reversal of a continuous decline in agricultural output observed during the second half of the 1980s. This paper reviews the main elements of Armenia's land reform program and discusses some of the main challenges to be faced over the medium term.

In January 1991, three months after taking office, the elected Government of President Levon Ter-Petrossian launched a major land reform program in Armenia. The decision to move promptly was based on the recognition that the experience with the state-owned farm system had been a failure and that its social engineering was plagued with inefficiencies in production and processing. There was a need to address the problem of food shortages in cities--evidenced by empty shelves at state retail food stores and long queues for food--and the growth of autarky and barter stemming from a deterioration of agricultural marketing. Moreover, focusing on land reform had the potential to yield a rapid supply response and thus increase the credibility of the Government's overall reform efforts to move to a market economy.

The authorities were conscious that a successful land reform rested on the proposition that farmers required investment and production incentives, both of which had been absent under the Soviet system. This required providing secure, reliable property rights to the farmer, as well as liberalizing agricultural prices and phasing out the system of obligatory sales of agricultural production to the state.

Once the reform law was approved by Parliament, the implementation process moved very fast. By end-October 1991, 715 out of 812 large state-owned farms had been liquidated and some 167,000 individual peasant farms and 9,500 collective peasant farms (a type of privately-held cooperative) had been created in their place. Some 65 percent of the perennial crop land, mainly fruit-tree orchards and vineyards, and over one-half of the crop land used for wheat, potatoes, and vegetables had been redistributed. In addition, peasant farmers had received some 300,000 heads of livestock, equivalent to 70 percent of that owned by state-owned farms. Throughout 1992, the amount of farmland and livestock in private hands continued to rise and, by July of 1992, about 80 percent of total crop land had been privatized. The other 20 percent remains with state-owned farms or has been reserved for lease for pasture and forage production.

The reform program succeeded in meeting the Government's objectives in a short period. In 1991, except for livestock production which fell due to a reduced supply of animal feed and disruptions caused by the reform process, crop production rose by an average of 20-25 percent over the previous year, reversing a trend of continuous decline since 1988

(Table 1). At the same time, there was an increased availability of food in the farmers' markets in Yerevan and other cities, and popular support for the new forms of private land ownership remained very high. Besides good weather, a well-timed set of policy actions was at the core of this successful experience.

## II. Background

Armenia is a landlocked, mountainous country located in the southern part of the Caucasus region. The smallest republic of the FSU, it covers an area of 29,800 square kilometers and has a population of 3.3 million. Armenia's agricultural sector accounts for about 20 percent of employment and the net material product (NMP), and is a net importer of food. Agriculture is primarily based in four irrigated regions of the country, the most important being the Ararat Valley in which Yerevan is located. Fruits and vegetables are mainly grown in the irrigated regions while grains, potatoes, and forages are activated in the northern highlands under rain-fed conditions. Cattle and sheep are raised primarily in the mountainous areas of the north.

Before the reform, the structure of farming in Armenia was organized on the basis of large state-owned farms (sovkhozes and kolkhozes), with production and investment decisions taken by the Moscow authorities. (By end-1990, the number of sovkhozes and kolkhozes in Armenia numbered 527 and 285 units, respectively.) Farms produced under a quota system and were obligated to sell most of the output to the state, in fulfillment of mandatory orders, at (procurement) prices established by the Ministry of

Agriculture. Workers on sovkhozes were salaried employees of the state. The kolkhozes were organized along the lines of the sovkhozes, but workers and managers had limited freedom to make production and marketing decisions. In addition to controlling agricultural decisions, the state had a monopoly over the agro-processing and food distribution sectors and the provision of agricultural inputs (e.g., seeds, fertilizers, and pesticides).

The distorted incentive structure facing state farms severely damaged the sector's productivity. Prices played virtually no role in how resources were allocated: procurement prices were set below cost, and state-farms' losses were covered by central transfers and subsidized credit. There was no market-based mechanism against waste, corruption, and environmental mismanagement. Moreover, state payments to farms were made on the basis of the amount of crops planted and not on the basis of actual harvested output. Consequently, by the early 1980s, agricultural output began to decline steadily; land quality drastically deteriorated as a result of salination and soil erosion; agricultural productivity (already low by international standards) plummeted; and the country's food import bill grew dramatically. Also, during this period, rural migration developed into a serious problem, especially after the 1988 earthquake that hit the northern part of Armenia, leaving over half a million homeless.

The political leadership had always been aware of the problems plaguing the agricultural sector in Armenia (and, indeed, in the whole FSU). A number of reforms were attempted over the years. In the 1950s, the state replaced in-kind payments to farmers by monetary payments, increased procurement prices and wages, and encouraged labor-intensive production.

Between the mid-1960s and mid-1980s, the state embarked upon a massive agro-industrial program and allowed farmers to operate "auxiliary" plots of land (often no larger than half a hectare located next to a farmer's dwellings) that could be used for private production. In 1987, a land-leasing program was established throughout the FSU and, in 1991, a limited agricultural price reform was implemented.

These efforts succeeded in alleviating the severity of the problems described above, but not the problems themselves. For example, in recent years, shortages in state food stores intensified despite the relative success of the private-plot and land-leasing programs, which accounted for 3-5 percent of total Armenian farmland but contributed one third of production. This was the result of both the reluctance of farmers to fulfill state orders at prices way below those in the parallel market and the breakdown of interrepublican trade in the FSU, which interrupted food imports and the delivery of packing materials, leading to large losses of perishable crops. Moreover, state farm production occurred at a high cost both to the budget--in terms of large subsidies to cover the difference between retail and producer prices--and to society, in terms of forgone opportunities to produce and consume other goods and services.

### III. The Land Reform

Setting a system of secure, reliable property rights was the first step in providing investment incentives to farmers. This implied giving farmers the right to own a land deed, to pass title to their heirs, and to freely choose whether to operate individually or amalgamate their plots of land to

maximize economies of scale. Farmers were given the right to take economic decisions and risks inherent to private businesses, albeit with a moratorium on selling the land for three years after acquisition. The moratorium was the result of the authorities' belief that a minimum time frame was needed for institutional development of a land market. Two new types of agricultural units were established by the Land Reform Law: the individual peasant farm and the collective peasant farm. Individual peasant farms were given ownership of a plot of land to families or households in exchange for a two-installment payment estimated on the basis of a land cadastre exercise. (Each plot's value was determined by dividing its average production level during 1986-90 by 8 percent. Land was viewed as an asset providing a perpetual income stream, the price of which was equivalent to the present value of that income discounted by a long-term rate of return of 8 percent. The first installment payment was made in November 1991; the second payment is due in November 1992 and will be indexed to the annual increase of the Agricultural Price Index). The Reform Law authorized the head of the family to represent the interests of the individual peasant farm, organize the activities of the farm, hire labor if needed, and conclude legal contracts in the name of the farm. Collective peasant farms, on the other hand, were created via the voluntary association of individual peasant farms, with farms allowed to withdraw from the association when desired. The law left it up to each collective farm to define the procedures for joining and leaving the farm, as well as the common objectives. The activities of each collective farm were to be controlled and directed by the farm's own supervisory bodies.



The process of land distribution was novel in that it involved minimal central government participation and followed a set of basic principles applied across the board in all 38 regions in Armenia. The Regional Councils of People's Deputies were given the responsibility of implementing the Reform Law, with each Council establishing a special committee of representatives from the agricultural community and/or village. The basic steps taken to distribute land were the following. First, an inventory of all land was done. Second, the number of families eligible to receive private land was determined using a list that included (in a decreasing order of importance) current farm workers, previous farm workers who decided to resume farming, and urban workers who decided to move to a rural area and adopt farming as a profession. Due to political considerations, foreign residents were excluded from the eligibility list. Third, land per family was determined by dividing the land base by the number of three-person family units. For example, a family of six persons was eligible to two parcels (each parcel was set around 4,000-5,000 square meters). Finally, land was mapped and categorized into five productivity classes and distributed through lottery (an initial attempt to allocate land through

auctioning fell through as the Regional Councils considered the system too complicated to implement). 1/

Liberalizing prices and deregulating marketing channels for agricultural output were the next two steps in the reform process. Except for milk, whose price remained fixed given the weight of this commodity in the Government's minimum consumption basket, the reform decontrolled all retail and producer prices for agricultural goods. Although, in principle, agricultural marketing was also made more liberal by phasing out the system of obligatory sales of output to the state, in practice, however, two factors mainly limited the farmers' ability to sell their products as they wished. First, most agro-processing enterprises remained in the hands of the state. Thus, important quantities of agricultural production continued to be channeled through state-purchasing organizations. Prices paid in these transactions certainly reflected the monopsonist power of state corporations. Second, suppliers' contracts signed between old state-owned farms and agro-processing state enterprises (specially for grain and milk) were kept in force after land privatization.

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1/ The price schedule in the Ararat Region was the following:

<u>Category of land</u>	<u>Annual Installment Payment (in rubles)</u>
Class 1 with grapes	7,000
Class 1 without grapes	3,400
Class 2 with grapes	4,800
Class 2 without grapes	2,800
Class 3 with grapes	2,342
Class 3 without grapes	1,600
Class 4 with grapes	800
Class 4 without grapes	300
Class 5	0

#### IV. Impact of the Reform

Estimates show that the reform was effective in fostering a recovery of output last year. Despite a sharp contraction in overall economic activity in 1991, crop production increased sharply compared with 1990 (Table 1). <sup>1/</sup> Livestock production fell, however, due to shortages of animal feed imported from elsewhere in the FSU and disruptions in animal husbandry following the reform. In addition to good weather (which, according to some estimates, accounted for 30 percent of the growth in output), the recovery of crop production in 1991 was helped by the timing of the privatization before the agricultural cycle was completed. Specifically, responsibility for the harvest was left to the new owners who managed to reduce the usual post-harvest losses due to waste and theft (under the pre-reform system, losses were officially estimated between 20 percent to 30 percent for production grains and perishable goods). Also, to increase crop yields, private farmers minimized the amount of land remaining idle for cultivation and used all available labor in their families during the harvest campaign.

The reform measures also succeeded in recreating agricultural markets, although important quantities of agricultural production continued to be channeled through state purchasing agencies due to the factors mentioned above. In particular, an average of 60-70 percent of the wheat and livestock sold was still supplied to government agencies (Table 2). Conversely, in the case of potatoes, vegetables, and fruits in general, the

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<sup>1/</sup> A further significant output increase is estimated to have occurred in 1992.

bulk of the amount sold by farmers went through markets located in Yerevan and in other cities. Despite these positive trends, however, remarkable quantities of wheat, potatoes and wool were kept by the individual and collective peasant farms as farm inventories (Table 2).

Perhaps one of the most conspicuous successes of the reform was the positive reaction to the property rights aspects. A survey conducted by the State Committee of Statistics of Armenia among heads of individual and collective peasant farms in November 1991 found that only 10 percent of the surveyed persons preferred the old state-owned farms to the new forms of farm organization. This contrasts with evidence found elsewhere in the FSU, where peasants appear rather reluctant to take over the responsibilities and risks involved in private farming. A possible explanation for this enthusiastic Armenian attitude is that, during the 1950s, Khrushchev's land strategy effectively moved the Armenian economy toward production processes that were labor intensive (e.g., horticulture), which led to farmers being very much "in touch with the land". (This was not the case in Russia and Ukraine, where agriculture is highly mechanized.) The well-known entrepreneurial abilities of the Armenian people could be another explanatory factor.

The survey also found that individual peasant farms have been more successful than collective peasant farms. Despite the fact that in certain regions of the Ararat Valley the degree of land parcelization has been striking following the reform (and less than optimal in terms of economies of size), farmers in collective peasant farms showed a strong preference for individual peasant farms over their current situation. This suggests that a

second stage in the transformation of Armenian agriculture is underway, with individual peasant farms becoming the main institutions dominating the sector.

#### V. Sustaining the Reform Process

The recovery of agricultural output increased the support for the Government's overall reform program. However, additional measures are still needed to improve the outlook of the sector over the medium term. These measures involve further redefining the role of the Government in the agriculture sector and implementing institutional changes that would increase the supply of financial resources and human capital to farmers.

Redefining the role of the Government in agriculture implies mainly diminishing the role of state-purchasing agencies by speeding up the privatization of agro-processing firms. The role of the Government in the sector will remain significant as long as the agro-processing sector is state-owned and predominantly monopsonist. Similarly, to the extent that the distribution networks for agricultural outputs and inputs remain in the hands of state agencies, farmers will face difficulties in escaping the agencies' monopsonist market power, and prices for agricultural commodities may not necessarily reflect their true scarcity value.

The opening of the borders for agricultural trade is another element of a new public policy for agriculture. Despite recent reforms, to date, agricultural foreign trade policy continues to be restricted, with imports and exports of farm goods regulated through a system of licenses and quotas. With a greater openness in international trade, prices of agricultural goods

would be increasingly influenced by international prices and would help ensure that farming is competitive. Another role for the Government would be to try to assure enough funding for critical public investments in agriculture (e.g., irrigation systems and rural roads to improve distribution and marketing) with a sufficiently high rate of return.

The lack of an efficient agricultural credit market is another problem. In the past, the Agricultural Bank of the FSU provided subsidized financing to the large state-owned farms. However, the Bank appears to be technically ill-prepared to provide credit to thousands of small private farmers following the reform, has no deposit mobilization abilities, and is saddled with nonperforming loans. There is a need to adjust the Bank to the new environment in the agricultural sector (e.g., retraining its staff and modernizing its management), and at the same time foster small- and medium-size regional banks able to carry out some basic project and credit analysis. Another positive step could be the removal of the three-year moratorium on selling privatized land. This moratorium, besides delaying the development of a farmland market with sales of land based on supply and demand, has inhibited commercial banks from accepting land as a collateral for investment and working capital loans.

Finally, there is a need to increase the human capital of farmers. This implies providing extension services to farmers to train them in different types of agricultural technologies, production processes, and yield and financial analysis.

## VI. Conclusions

The most notable features of the Armenian land reform program were perhaps its speed and comprehensiveness. A fundamental element was a clear repudiation of inherited institutions of collectivized agriculture through a simultaneous liberalization of prices, the ending of mandatory state orders, and the establishment of a system of property rights. The economic importance of property rights was not that they provided plots of land which benefitted their holders exclusively, but that they gave farmers sufficient incentive to add value to their resources by working hard, minimizing waste in the harvest, and pooling their plots of land together on a voluntary basis for the prosperity and progress of the entire community. While the reform process has not been free of imperfections, the task is now to clearly redefine the role of the Government from one of control and ownership of production, processing, and distribution, to one of support for private farming and the market.

Table 1. Armenia: Volume of Agricultural Production, 1988-91

(In thousands of metric tons)

Activity	1988	1989	1990	1991
<u>Crops</u>				
Wheat	373.5	192.1	271.0	304.0
Tobacco	8.8	3.3	1.7	2.2
Geranium	19.3	28.0	6.5	8.5
Potatoes	207.3	266.3	212.0	276.5
Vegetables <u>1/</u>	567.0	485.0	389.7	438.1
Garden produce <u>2/</u>	60.5	51.5	31.4	35.0
Fruits	241.1	169.5	155.5	165.0
Grapes	214.0	118.8	143.6	194.2
<u>Livestock</u>				
Meat	181.1	167.4	145.1	133.0
Milk	565.9	491.2	431.9	412.0
Wool	4.0	3.3	2.8	2.4
Eggs (millions)	618.1	561.4	517.9	485.0

Sources: Armenian authorities, and Fund staff estimates.

1/ Mainly tomatoes, cucumbers, and peppers.

2/ Mainly cantaloupes, melons, and watermelons.



Table 2. Armenia: Distribution of Agricultural Sales and Output, 1991

(In percent)

	<u>Total Sales</u>			<u>Total Output</u>	
	State Purchasing Entities	Free Market	Other Buyers	Sold	Stored at Farm
<u>Crops</u>					
Wheat	78	15	7	42	58
Potatoes	20	72	8	33	67
Vegetables	37	61	2	89	11
Melons	15	83	2	80	20
Fruits	46	51	3	86	14
Grapes	48	49	3	90	10
<u>Livestock</u>					
Meat	58	38	4	83	17
Milk and milk products	62	36	2	52	43
Wool	39	58	3	17	83
Eggs	90	6	4	73	27

Sources: Armenian authorities, and Fund staff estimates.

