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in the Republic of Georgia:  
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# **Land Reform and Rural Well Being in the Republic of Georgia: 1996-2003**

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## Abstract

Land reform was launched in the Republic of Georgia in 1992, about a year after the country gained its independence from the Soviet Union. While an impressive land individualization process has been in effect since then, the pace and the performance of this process are far from satisfactory. This is due to a combination of institutional and economic constraints. We use comparable survey data from 1996 and 2003 and show that the land reform has been progressing mainly through land leasing. This allows successful farm households to expand their farming operation and improve their well-being. Land documentation doesn't seem to yield the expected results, and the blame may be on less than sufficient labor and credit opportunities. We conclude that there is scope for continuing the process of land reform in Georgia, but this has to be accompanied by measures to develop rural credit and labor markets.

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## **Introduction**

Agriculture has traditionally been an important sector of the Georgian economy. After independence in 1991, the agricultural sector underwent a severe crisis, mainly due to the civil war, which resulted in the destruction of the productive ability of collective and state farms. A process of land individualization has been in effect since then, with agricultural land being distributed to private households. Land individualization was composed of two different mechanisms: privatization and leasing. A program of land privatization was initiated in 1992, involving an establishment of a “privatization reserve” of 850,000 hectares including 200,000 hectares already used by private farm families at that time and an additional 650,000 hectares from collective and state farms. This land was intended for allocation among existing and new family farms. By 1996, land held by private households grew by roughly 200% to a total of 628,000 hectares (Lerman 1996). By 1997, this number grew further to 766,000 hectares (Shuker 2000), and by April of 1999, to 918,000 hectares (FAO 1999).

In addition, private households leased more land from state reserves. In 1996, the government of Georgia permitted the leasing of agricultural land still under government control to private households or legal entities. By 1997, the amount of land leased to producers was almost equal to the amount held privately (Shuker 2000). Still,

about half of the agricultural land in Georgia remains under the control of state agencies, which do not use it productively.

The resulting structure of the farm sector is composed of three types of farms. First, there are the small family farms, cultivating 0.75 hectares of land on average, that do not lease land. Second, there are the larger individual farms that lease land and cultivate 6 hectares on average. These are perhaps the more ambitious and also possibly better connected farmers. Finally, there are the large entities that cultivate close to 100 hectares on average, almost all of it leased (Shuker 2000). In fact, it turns out that the large entities tend not to cultivate all their leased land, mainly because of capital constraints (FAO 1999). They may be leasing the land in part for speculative reasons.

Institutional factors impose considerable limitations on the functioning of the land market. Private land is restricted to a maximum of 1.5 hectares per household. The distribution of both privatized and leased land was at the hands of the Sakrebulo (representative body of local government). There seems to be huge variation across Sakrebulos in the fraction of land distributed to private hands (Lerman 1996). In addition, not all land transfers are formally complete. A transfer is only complete once the state issues a transfer certificate called a “giving and receiving act.” A large number of small farmers are still without certificates, which means that they cannot sell the land

to others or use it as collateral in the capital market. Moreover, land sales between private farmers within a Sakrebulo are allowed only after all agricultural land in the Sakrebulo is systematically registered, a restriction that practically prohibits all private land transactions as of today (Shuker 2000).

These institutional constraints result in an inefficient use of agricultural land in Georgia. On one hand, efficient and successful small farmers cannot expand their landholdings, and cannot utilize their potential and grow into commercial farming operations. On the other hand, inefficient small farmers cannot exit and inefficient large farmers cannot reduce their size since they cannot get compensated for the land and also perhaps lack of economic alternatives. At the macro level, eliminating the institutional constraints in the land market and continuing the individualization process (including privatization and land leasing) would very likely result in a land distribution that includes a much larger fraction of mid-size family farms. Much more of the agricultural land in Georgia will be cultivated, and crop yields will be higher. These have been found to be the results of land reforms in many developing countries (Binswanger, Deininger and Feder 1995). Land registration that will enable private land to be used as collateral will have indirect effects on agricultural productivity through the alleviation of capital market constraints (Feder, Onchan and Raparla 1988).

Moreover, established property rights may increase the incentives of farmers to make costly long-run investments (Besley 1995), thereby promoting prospects for further long-run growth of the agricultural sector.

The purpose of this paper is to investigate the progress of the land reform between the years 1996 and 2003 and assess its consequences for the well being of the rural population. We use data derived from two farm-household surveys conducted in 1996 and 2003 in four districts surrounding the capital city of Tbilisi. The surveys collected information about the demographic profile of the household, household income and its sources, land resources and other farm assets, farming activity and related activities (finances, investments), and social aspects (Gogodze et al. 2005). In the next section we describe the progress of the land reform, and after that we examine the changes in household income. Then, we analyze the association between land reform and household income through a multiple regression analysis. We conclude with a discussion of the policy implications of our results.

### **The progress of land reform**

Figure 1 portrays the changes in farm-size distribution between 1996 and 2003. It is evident that the distribution has shifted to the right, implying that farms are larger

in 2003 than in 1996. This is attributed mainly to a significant increase in the amount of leased land. While the size of land owned by a typical farm has grown from 0.74 ha in 1996 to 0.81 ha in 2003, an average farm rents about 0.77 ha in 2003 relative to only 0.16 ha in 1996. Only 2% of the farms leased land in 1996, while this fraction increased to 12% in 2003. On average, a farm that leased land in 1996 owned 0.85 ha, while an average farm that did not lease land owned 0.73 ha. These numbers have changed to 0.66 ha and 0.84 ha, respectively, in 2003. The number of plots cultivated by each family has increased from 1996 to 2003. In 1996, 74% of families cultivated up to two plots. This fraction decreased to 61% in 2003. In 2003, 70% of farmers possess some land ownership document, an increase of 30% relative to 1996.

In summary, the progress of land reform from 1996 to 2003 is expressed mainly in the possibility to lease land. This possibility is utilized by a relatively small number of farmers, perhaps due to constraints on the availability of credit or labor. This probably leads to increased inequality among farmers. In addition, the increased possession of land ownership documents might lead, in the long run, to an increase in the ability of small farmers to raise credit.

### **The changes in household income**

Since the average cultivated land increased from 1996 to 2003, one would expect an increase in farm production. However, this is difficult to measure because farmers grow many different types of crops and the composition of crops also changed between 1996 and 2003. For example, because rented land tends to be marginal, there has been an increase in the cultivation of hay, a marginal crop. Also, the yield of several crops dropped considerably between 1996 and 2003. This could be because of natural conditions, but inputs of production other than land may be important as well. Georgian farmers rely mostly on family labor and hence may face labor shortages when increasing the cultivated land. However, the average number of workers per farm increased from 2.65 in 1996 to 4.07 in 2003. On the other hand, only 13.5% of farmers used purchased inputs in 2003, compared to 25% in 1996. This may explain the drop in yields.

The value of farm production depends not only on cultivated land and crop yields but also on prices. The data show that crop prices dropped dramatically (in real terms) from 1996 to 2003. This has led to a 50% drop in the value of crop production. The value of livestock production remained roughly the same, and the total value of farm production dropped by about 25% from 1996 to 2003 (figure 2). Farm products may be used for self consumption, sold, or reserved. In rural Georgia, most farmers still

consume all their farm output (Kan et al. 2006). The fraction of output consumed increased from 66% in 1996 to 72% in 2003. This means that household cash income suffered even more in 2003.

In 2003, farm income, while being the most important source of household income, constituted less than 50% of total household income (figure 3). Non-farm labor and business income combined for about a third, and the rest came through public and private transfers. While we do not have these statistics for 1996, we do have a report on the fraction of farm income in total household income in both years (figure 4). We observe that the share of farm income has increased, on average, from 1996 to 2003. Combined with our earlier observation that farm income has decreased over the same period, we conclude that the decline in total household income was even more extreme than the decline in farm income alone.

### **Land reform and household income**

It would not be correct to blame the decline in household income on the land reform. Farm household situation is determined, in general, by a combination of technological factors, market conditions and policy, as well as the household's own decisions. The discussion above implied that market conditions had perhaps the most

significant negative effect on household income. Hence, it could very well be that the marginal effect of land reform on household income is in fact positive. This is supported by the results of Kan et al. (2006), who showed that landholdings have a positive effect on the tendency of farmers to sell their farm products on the market. Moreover, we have seen that most of the increase in landholdings has been achieved through leased land, and hence is concentrated among a small number of farms.

In table 1 we compare several observed characteristics of households who lease land and those who do not, using the 2003 data. We observe that households who lease land have much higher farm incomes, but also considerably higher non-farm incomes. Remittances and social payments are lower for households who lease land, but these constitute a relatively small fraction of household income. Overall, total income of households who lease land is more than twice that of households who do not, on average. As mentioned before, households who lease land own less land of their own, but the leased land more than compensates for that. Those households also have more farm assets, and are more likely to own livestock. On the other hand, they are less likely to hold a land ownership document, and their plots are more remote. In addition, farmers who lease land tend to be somewhat younger and more educated, and have larger families.

In order to find the marginal effects of the land-reform-sensitive variables on household income, we conduct a multivariate regression analysis. The dependent variable is the natural logarithm of per-capita household income (hereafter income), hence the coefficients can be interpreted as percentage changes in income caused by a unit change in each explanatory variable. The analysis is conducted first for the whole sample, and then repeated for households who do not lease land, in order to confirm that the results are not driven solely by the vast differences between households who lease and those who do not lease land that were discussed above. The results are in table 2. We find that an additional hectare of owned land can increase income by more than 5%, while a similar increase in leased land has an effect of less than 1% on income. This implies that the potential of increasing rural household income is much larger among households who own small plots rather than among those who operate larger land areas through leasing. This is consistent with the “inverse relationship” phenomenon (Kimhi 2006). Income is positively related to the number of plots, holding land constant. Land fragmentation is likely to have a negative effect on crop yields through plot-level economies of scale, but could also allow farmers to diversify their output mix and reduce yield uncertainty, and therefore allow them to grow more risky crops with higher mean yields. The latter effect seems to be dominant in this case. In

the whole sample, income is positively related to the distance to plots, but this effect vanishes in the sub-sample of households who do not lease land. This implies that the effect of distance is significant only among land-leasing households, perhaps because those households agree to rent remote plots only when they expect that these plots will yield higher incomes. Land quality has a positive effect on income, as one could expect, but the effect is not statistically significant. Households who hold a land document have lower incomes, and this effect holds even among households who do not lease land. One possible explanation for this counter-intuitive result is that households with land documents have more secure property rights on their land, and thereby undertake land-improving investments that should be profitable in the long run but may be costly in the short run (Besley 2005).

Households who own livestock enjoy almost 80% more income than those who do not. Holding farm assets increases income significantly, but the magnitude of the effect is rather small. Age and education of the head of household (human capital indicators) increase income significantly, as one may expect. However, the effect of education is not linear, with elementary education almost equivalent to academic education, and high school education no different from no schooling at all. This may reflect the highly imperfect labor markets in rural Georgia, where educated individuals

tend to be employed in the public sector and are willing to earn low wages in return for job security (Hoyman and Kimhi 2005). Larger households have lower per-capita income, which is a common result. We also observe regional income disparity, with higher income in Gardabani region and lower income in Sagarejo region, compared to the other two regions.

### **Policy implications**

What can we learn from these results on the prospects of land reform in the Republic of Georgia and perhaps more generally for transitional countries? The progress of land reform in Georgia was gradual and has not reached full coverage, mainly due to institutional complexities. We can think of the land reform as composed of three dimensions: allowing rural families to own one or more plots of land; allowing farm households to lease land from state enterprises; and land registration. We shall now discuss the merits of each dimension as reflected in our empirical results.

First, we found that the amount of land owned by rural households increase their per-capita income. This calls into question the logic of the institutional constraints on the amount of land allocated to each farmer. Supposedly, these constraints were aimed at allowing more households to obtain land, but it is not clear that the low

income gained by cultivating such small plots is better than the alternative. Second, land leasing seems to be a successful channel through which the more productive farmers can expand their farm operation. The land leased tends to be marginal in terms of its suitability to the most profitable crops, but its value at the state enterprises is close to zero, and it allows farmers to enjoy much higher incomes. Leasing is also subject to lower transactions costs, and hence it seems to be the most promising channel in which the land reform in Georgia should proceed.

Finally, we found that land documentation is associated with lower household income, even after removing households that lease land, that have higher income on average and are less likely to hold a land document. We do not see any reason that land registration in itself will cause lower household income in the long run. The main motivation for land registration as part of a land reform is to allow land transactions. This is necessary in order to allow evolutionary changes in land ownership, so that productive and efficient farmers could buy land from less productive and inefficient ones. Land documentation is a necessary but not sufficient condition for land transactions. Farmers who want to expand their landholdings must also have equity or access to credit. Neither sufficient equity nor access to credit is likely to be prevalent in rural Georgia. The fact that landholdings variability in our sample is quite low tells us

that not many land transactions have been conducted so far, despite the fact that nearly 75% of the farmers hold land documents. In this sense, land documentation is perhaps the least promising channel through which to promote land reform in Georgia. In this sense, the need for continued land reform cannot be disentangled from the need to develop other rural markets, such as the credit market.

Another rural market that needs to be taken care of is the labor market. This is relevant to our current discussion of the land reform in more than one way. First, increasing landholdings requires more farm labor, and above a certain threshold, family labor will not be sufficient and additional workers will have to be hired. Second, if some farmers are to give up all or part of their land, they should be able to find an alternative source of income, and the rural labor market will be the first choice. Without a well-functioning rural labor market, the response of farm households to the land reform will be limited.

A final aspect that needs to be discussed in the context of land reform is rural income inequality. Our findings indicate that the expansion of land leasing between 1996 and 2003 has led to a higher polarization of household income. Naturally, continuing the reform will expand this trend, especially if the availability of alternative income sources is far from satisfactory. It has been shown for many countries that

off-farm income allows poor farmers to keep up with the more affluent ones (see for example Arayama et al. 2006 and the references therein). In the case of Georgia, continuing the momentum of the land reform without developing rural labor markets could increase rural income inequality and raise rural poverty, at least in the relative sense.

To summarize, our findings indicate that the potential of increased land market activity is still there. A continuing specialization process that will enable successful farmers to acquire more land could improve the economic well-being of farm families even in a period of depressed produce prices. As has been shown by Zimmerman (2000) for South Africa, other rural markets, including the credit market and the labor market, need to be developed concurrently in order to allow farmers to take full advantage of the opportunities opened by the land reform, and in order to avoid negative repercussions of the land reform, namely rural income inequality and poverty.

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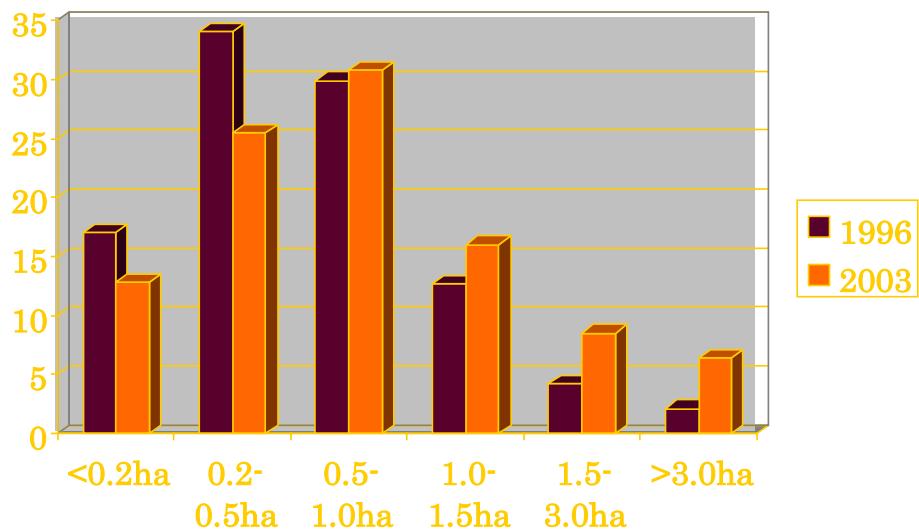


Figure 1 – Distribution of farms size (ha)

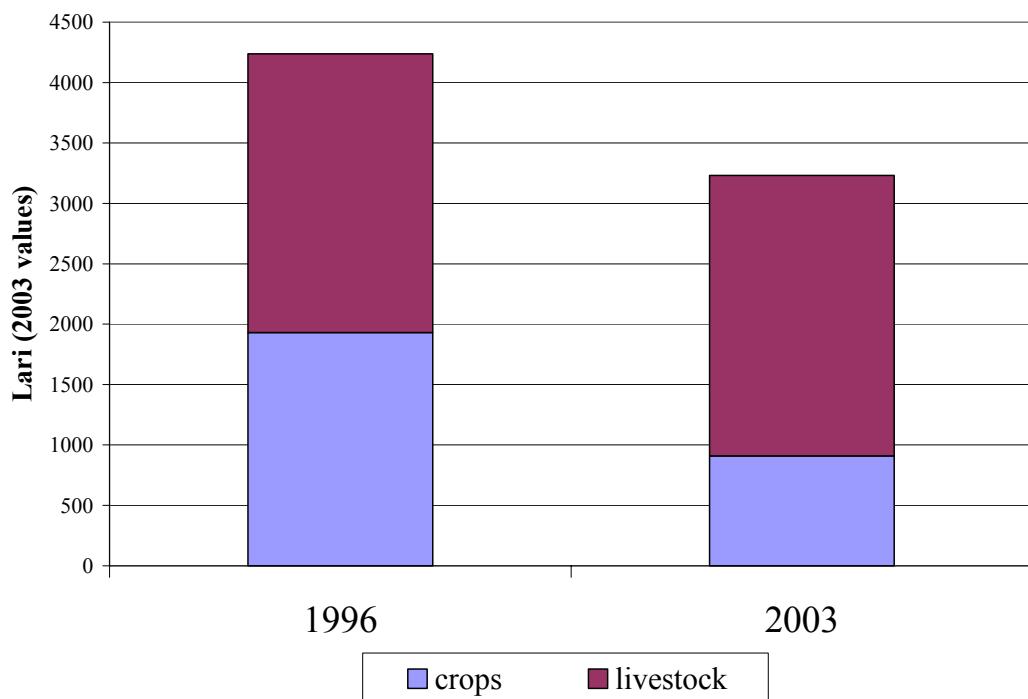


Figure 2 – Value of farm production (Lari, 2003 values)

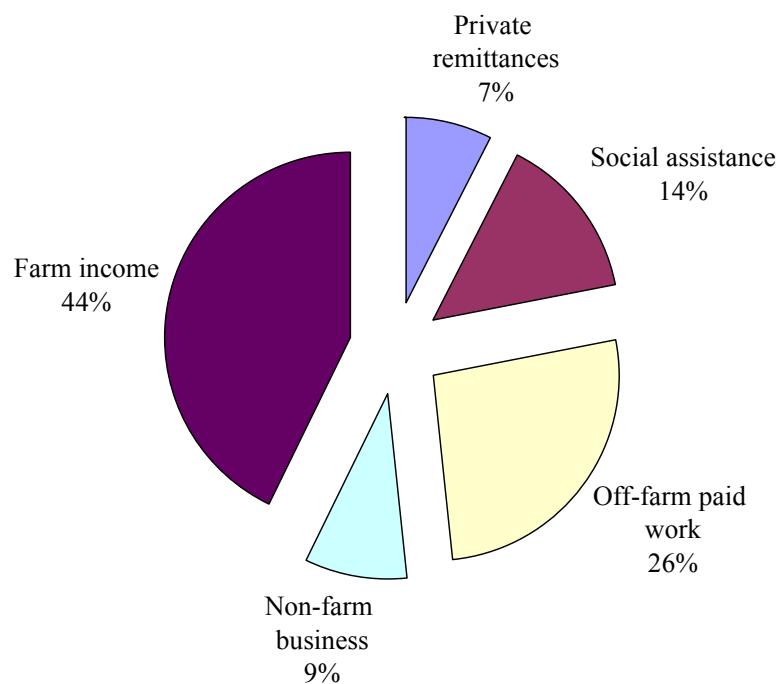


Figure 3 – The composition of household income

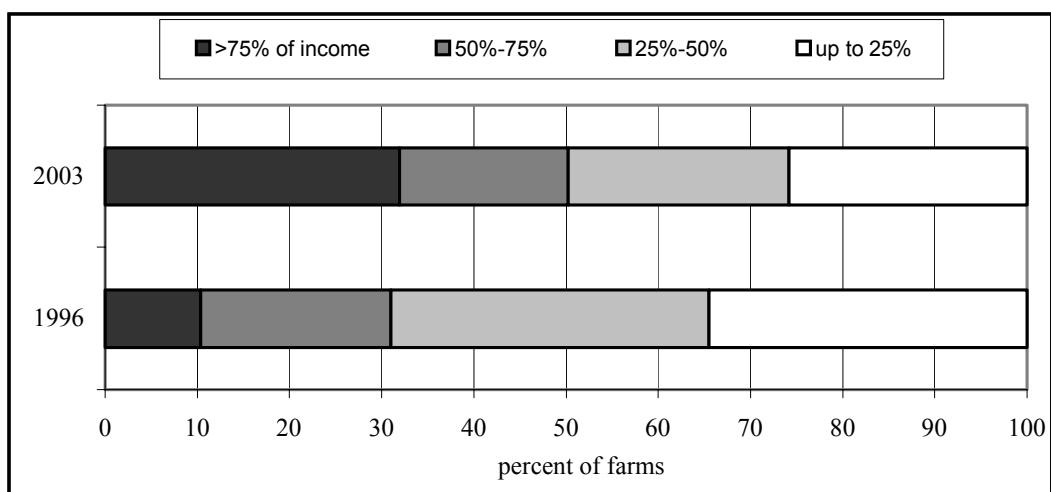


Figure 4 – The share of farm income in total household income

Table 1 - comparison of households who lease land and those who do not (2003)

variable	not leasing	leasing
farm income (lari)	2792	6723
non-farm income (lari)	1053	1487
remittances (lari)	150	58
social payments (lari)	122	76
total income (lari)	4118	8344
land owned (ha)	0.85	0.66
land rented (ha)	0.00	6.49
total land (ha)	0.85	7.15
number of plots	2.37	3.02
mean distance to plot (km)	1.49	3.30
mean land quality (index)	3.17	3.18
land document (dummy)	0.73	0.48
livestock (dummy)	0.80	0.89
farm assets (lari)	16314	23345
age	45.49	42.41
elementary education (dummy)	0.09	0.13
higher education (dummy)	0.47	0.52
professional education (dummy)	0.18	0.14
academic education (dummy)	0.17	0.18
family size	3.92	4.25

Table 2 - regression of per-capita household income (2003)

Variable	All households		No leased land	
	Coefficient	t-statistic	Coefficient	t-statistic
land owned	0.0520242	5.54 **	0.059046	5.08 **
land rented	0.0091638	5.82 **		
number of plots	0.1166889	7.87 **	0.104582	6.51 **
mean distance to plot	0.0227898	3.1 **	0.007492	0.82
mean land quality	0.0205012	0.85	0.039745	1.57
land document	-0.1149916	-3.21 **	-0.139310	-3.52 **
livestock	0.7938670	17.95 **	0.787893	17.05 **
farm assets	0.0369807	7.34 **	0.033248	6.1 **
age	0.0103551	6.45 **	0.010189	5.95 **
elementary education	0.3259938	2.45 *	0.423818	3.03 **
higher education	0.0074639	0.07	0.026756	0.23
professional education	0.2388096	1.98 *	0.218347	1.76
academic education	0.3438532	2.87 **	0.380922	3.07 **
family size	-0.1506635	-12.15 **	-0.158460	-11.83 **
Dusheti region	-0.0662070	-1.38	-0.066660	-1.37
Sagarejo region	-0.1790063	-3.64 **	-0.169970	-2.99 **
Gardabani region	0.3564647	7.25 **	0.252332	4.91 **
intercept	5.2959180	33.42 **	5.353421	32.17 **
r-squared	0.2667		0.2518	
number of households	2486		2186	

\* coefficient significant at 5%

\*\* coefficient significant at 1%

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