

AGRICULTURAL LAND-USE CHANGES AND RURAL TRANSFORMATION IN THE REPUBLIC OF MOLDOVA

Anatolie IGNAT, Victor MOROZ

Institute of Economics, Finance and Statistics, 45 Ion Creangă str., MD 2064, Chișinău, Republic of Moldova, Phone: +(37322) 501 119, Fax: + (373 22) 74-37-94, Email: anatolie.ignat@gmail.com, vmoroz27@gmail.com.

Corresponding author: anatolie.ignat@gmail.com.

Abstract

This paper focuses on the links between changes in the land use and sustainable rural development in the Republic of Moldova. A particular attention is addressed to the analysis of land ownership fragmentation, existing impediments for creation of sustainable agricultural systems based on principles of economic growth, social equity and protection of the environment. The following research methods such as analysis of the impact of public policies in rural areas, including in agriculture, comparative analysis, analysis of annual time series, were used. There were also used qualitative research methods such as: interviews of key stakeholders and focus groups' interviews. Data for the quantitative analysis were collected from statistical yearbooks of the Republic of Moldova, National Land Cadastre and other available sources. The agricultural sector of the Republic of Moldova after the land reform is characterized by a polarization between large corporate farms and many small and fragmented family farms. The consolidation of land ownerships could become an effective instrument that can address both the problems of land fragmentation, but also the sustainable rural development in a wider context.

Key words: agriculture, land fragmentation, land ownership, land use, transformation.

INTRODUCTION

Modernization of the agricultural sector in the Republic of Moldova, as in many other countries with economies in transition supports complex processes of transformation. Structural changes in agriculture are very dynamic as for example, the size of land holdings, forms of ownership, labor utilization, increased dependence on external financing and markets.

There are several works in literature which examine the structural changes in the economic environment, starting from the least developed countries, where the predominant economic activity is based on agriculture and ending with highly developed countries [0, 0]. The rural economy is highly dependent on efficient use of agricultural land. The structure of agricultural land in the Republic of Moldova was changed through its distribution to workers of former collective and state farms after implementation of the land privatization program "Land" during the period 1998-2001.

In conditions of the lack of institutional support, rural areas of the Republic of Moldova encountered substantial problems caused by the inconvenient structure of farms and highly fragmented ownership of agricultural land and especially of the perennial plantations.

The main scope of this paper is to identify existing problems of the efficient land use and rural development in the Republic of Moldova.

MATERIALS AND METHODS

Given the specific set of problems related to efficient use of agricultural land, have been studied several scientific papers related to land privatization, rural development, and structural changes in rural areas [0, 0, 0, 0].

In this paper have been analyzed data from statistical yearbooks of the Republic of Moldova, data from the National Land Cadastre and other available sources.

The following research methods such as: analysis of the impact of public policies in rural areas, including in agriculture,

comparative analysis, analysis of annual time series, etc.

There were also used qualitative research methods such as: interviews of key stakeholders and focus groups' interviews in order to evaluate the impact of land use changes over the agricultural systems and rural livelihoods in the Republic of Moldova.

RESULTS AND DISCUSSIONS

As the most of the East- European countries the Republic of Moldova has passed through a process of land reform after the political changes around 1990.

The first attempts of land privatization have been made after adoption of the Land Code in 1991. However the massive land privatization has started after the implementation the program „Pământ” (Land) in 1998-2001, when over ¾ of agricultural land were privatized.

During the land privatization process the land was distributed to workers of the former collective and state farms in order to assure the social equity among the rural population.

Based on privatized land new forms of agricultural holdings and farms, limited liability companies, joint stock companies and production cooperatives had been created.

Currently about 74 percent of agricultural land (1,834,600 ha) is privately owned and about 26% of agricultural land (654,700 ha) are public property.

According to the national land cadastre on January 1, 2011 most of private agricultural land (40.4%) is owned by limited liability companies. In the possession of peasant farms are about 33 percent of the land. About 13% of agricultural land are cultivated independently by private owners, while cooperatives and joint stock companies own 7.5% and 2.4% of private land, respectively (see figure 1).

According to preliminary data of the General Agricultural Census in 2011 were working 903 000 farms, including 391,646 peasant farms, 232 agricultural cooperatives, 161 joint stock companies and 3624 limited liability companies.

Average size of an agricultural holding is 2.2 ha, including agricultural holdings with legal entity - 247.9 ha, and those with physical entity - 0.8 ha.

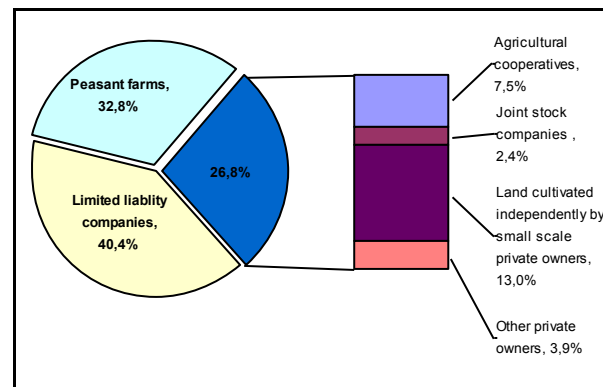


Figure 1. Structure of the private agricultural land according to the form of farms' organization, 2011, %

According to the General Agricultural Census of 2011 lands of agricultural holdings are divided into 2.65 million plots. Each farm holds on average 2.9 plots of land.

At national level the average size of parcels is 0.8 ha, including farms with legal entity - 25.8 ha, and those with physical entity - 0.4 ha. In many cases these parcels are located at a distance of 9-20 km from each other.

This fragmentation of agricultural land is largely a consequence of the imperfection of the legal framework and insufficient law enforcement.

Thus, under the latest version of the Land Code, art. 13 – the equivalent land share to be granted in kind in accordance with the land management project can be divided, depending to the situation at most within 3 plots of land (arable land, vineyards and orchards) [0].

However, within the framework of privatization process "Land" the equivalent shares of land in many cases were divided into 5-7 plots with the minimal size of the plot of about 4-5 ars.

Of the total number of 903 000 agricultural holdings registered within the General Agricultural Census of 2011, only 4800 (0.5% of the total) are farms with legal entity (limited liability companies, agricultural production cooperatives, joint stock companies, state enterprises, research institutes and agricultural schools, local

councils / municipalities owning agricultural land, religious establishments, NGOs and other agricultural enterprises) and about 898 000 (99.5%) are agricultural holdings with physical entity (peasant farms, individual and family households, etc.).

The corporate type of farms in particular such as Limited Liability Companies and Joint stock Companies in recent years have shown increasing trends of the number of households and respectively the reduction of the areas held by them as a result of adjustment to market conditions. Simultaneously, family peasant farms shows increasing trends of the number of households with areas larger than 5 hectares in recent years, keeping at the same level the number of households with 1-5 ha and reducing the number of households that have less than 1 ha of land (see table 1).

Table 1. The number of agricultural holdings, 2007-2011

| Agricultural holdings | 2007 | 2008 | 2009 | 2010 | 2011 |
|----------------------------------|------|------|------|------|------|
| Agricultural cooperatives | 239 | 259 | 283 | 233 | 232 |
| Joint stock companies | 116 | 109 | 108 | 170 | 161 |
| Limited liability companies | 1342 | 1344 | 1513 | 2038 | 3624 |
| Peasant farms (thousand) | 390 | 386 | 381 | 400 | 392 |
| <i>Including with area</i> | | | | | |
| Larger than 100 ha | 186 | 209 | 203 | 276 | 559 |
| From 50 up to 100 ha | 105 | 113 | 143 | 524 | 780 |
| From 10 up to 50 ha | 746 | 904 | 1126 | 1794 | 2729 |
| From 5 up to 10 ha | 3307 | 4156 | 4320 | 3958 | 4175 |
| From 1 up to la 5 ha (thousands) | 2405 | 216 | 224 | 241 | 240 |
| Less than 1 ha (thousands) | 147 | 165 | 152 | 146 | 144 |

Source: Elaborated by authors based on data from the National Land Cadastre

Currently about 98% of the total number of peasant farms have areas less than 5 ha, including about 37% of them that have less than 1 ha, and 61% that holds areas from 1 to 5 ha. Together these agricultural holdings have worked about 42% of total agricultural land in Moldova in 2011.

Peasant farms have a significant share in total agricultural production. Together with

population households they deliver essential quantities of agricultural products. Thus the major part of the production of corn, potatoes, vegetables, fruits and grapes are concentrated in the community of small-scale farmers (see table 2).

Table 2. Share of population households and peasant farms in the total volume of vegetal agricultural production, 2007-2011, %

| Crops | 2007 | 2008 | 2009 | 2010 | 2011 |
|-----------------------|------|------|------|------|------|
| Winter wheat | 23,6 | 29,7 | 33,0 | 28,7 | 28,3 |
| Barley | 26,3 | 26,8 | 30,5 | 36,0 | 37,7 |
| Corn | 91,3 | 83,8 | 89,9 | 84,5 | 80,9 |
| Leguminous vegetables | 53,9 | 56,9 | 51,4 | 58,9 | 69,5 |
| Sun flower | 33,4 | 31,7 | 33,2 | 30,2 | 31,9 |
| Soya | 32,9 | 26,0 | 31,3 | 22,3 | 21,6 |
| Sugar beet | 14,8 | 9,6 | 12,1 | 13,5 | 8,5 |
| Tobacco | 19,4 | 17,9 | 13,6 | 19,7 | 22,2 |
| Potatoes | 88,6 | 90,7 | 88,9 | 83,4 | 84,6 |
| Field vegetables | 80,2 | 78,9 | 84,5 | 83,9 | 84,0 |
| Pumpkins | 96,6 | 96,7 | 97,5 | 97,8 | 98,0 |
| Fruits and berries | 52,1 | 50,5 | 57,9 | 59,8 | 62,2 |
| Grape | 80,0 | 77,8 | 79,7 | 85,7 | 78,6 |

Source: elaborated by authors based on data [0]

The share of small farmers in the livestock sector is even more impressive. Thus, most of the herd of cattle, swine, sheep, goats, horses and poultry are concentrated in small farms (see figure 2).

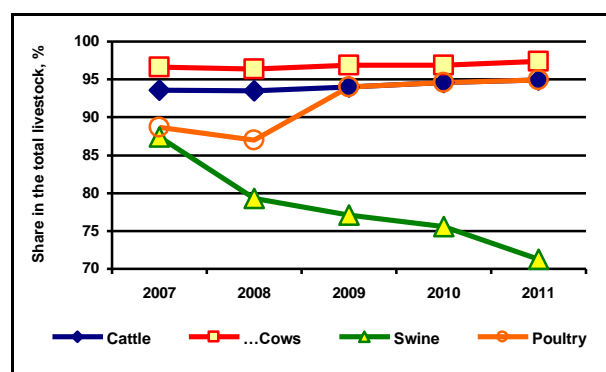


Figure 2. Share of population households and peasant farms in the total livestock production, 2007-2011, %

The small size of farming units and the difficulties they faced in adopting standards of hygiene, environment, plant protection and animal health, accompanied by lack of vocational education in agriculture can be

identified as major obstacles in developing the individual farming sector of the Republic of Moldova.

An alternative to individual farming in order to increase their bargaining power in relation to the processing industry is creating local associative structures such as marketing and production cooperatives.

Currently, there are three agricultural systems in the Republic of Moldova such as: conventional, subsistence system and organic. Specific features of the conventional system in the Republic of Moldova are:

- The concentration of land in large farms;
- Deepening the specialization of agricultural enterprises;
- High level of dependence on imported resources;
- Mechanization and intensive use of chemicals in the production process;
- Increasing labor productivity and reducing rural population.

Subsistence agricultural system is characterized by:

- Agricultural production is used mainly for family consumption;
- Practicing simplified technologies based on manual labor;
- Small size of agricultural plots.

Organic agricultural system is characterized by:

- Production organized at certified farms;
- Ecological certificate performed in accordance with European regulation of organic production;
- Maintenance and restoration of soil fertility.

The share of organic agricultural system is insignificant and does not exceed 1% of the cultivated land in the country.

An important factor for sustainable rural development is the availability of qualified labor force. In the last five years, rapid changes are highlighted in employment in the agricultural sector as whole and agricultural enterprises in particular. Reducing the number of people involved in agriculture in all

farming systems demonstrates inability of agriculture to absorb surplus of labor. This creates an uncertain situation in rural economic development planning (see figure 3).

Taking into account the increasing complexity and uncertainty of agricultural systems of different sizes that compete with each other, it is necessary to form a modern vision of agricultural development.

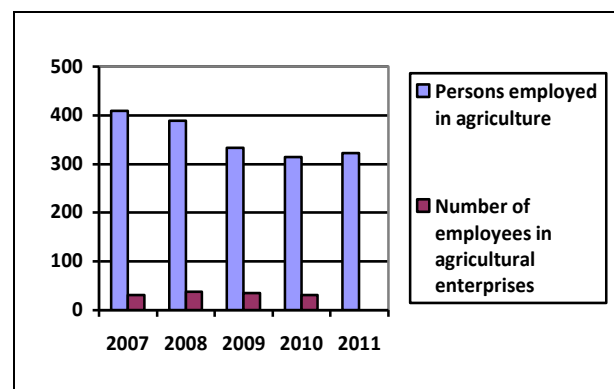


Figure 3. Use of labor force in agriculture of the Republic of Moldova, 2007-2011, thousand persons

The efficiency and competitiveness of the rural sector is dependent on a coherent approach regarding land tenure. Land fragmentation is an important factor affecting the Republic of Moldova as many other countries and its resolution through land consolidation would give to agricultural producers an incentive to invest in their farms and to remain in rural areas.

Taking into account the risk of land abandonment and depopulation, due to the high level of migration from rural areas, there are several opportunities for intervention in order to assure a sustainable development of the rural sector. Thus the demographic development can be influenced to a limited extent, while socio-economic factors and institutional frameworks can be addressed by appropriate policies.

Sustainable development has three principal dimensions: economic growth, social equity and protection of the environment. The economic dimension is the underlying principle for the society's well being that should be maximized and poverty eradicated through the optimal and efficient use of natural resources. The social aspect refers to

the relationship between nature and human beings, uplifting the welfare of people, improving access to basic health and education services, and fulfilling food security needs and respect for human rights. The environmental dimension, on the other hand, is concerned with the conservation and enhancement of the physical and biological resource base and ecosystems.

Today, in majority of the European countries, land consolidation is an essential tool amongst other instruments in the land management tool-box and it is an integrated part of a broader rural development “package” [0].

The most relevant approach of land consolidation is based on the following principles such as:

- Land consolidation has to be participatory, democratic and community driven
- The focus is on rural livelihood rather than on primary production of food staples
- The end result is community renewal, that is, sustainable economic and political development of the whole community
- It is founded on the principle of assisting the community define new uses of its resources and then reorganize its spatial components (parcels) accordingly [0].

Consolidation processes in the Republic of Moldova shows a slow but steady growth trend. Thus, in 2005 the share of agricultural land cultivated by farms larger than 100 ha was of 48.7%, of those with size from 5 to 100 ha was about 1.6%, and of those with areas less than 5 ha - 49.7%. Respectively in 2011 the share of agricultural land cultivated by farms larger than 100 ha was 52.4 (+3.7%), of those with size from 5-100 ha was 5.3% (+3.7 %) and of those with areas less than 5 ha - 42.3 (-7.4%).

Also one can observe a positive development in the agricultural land market. Thus, during the period 2008-2011 the volume of transactions with agricultural land has increased by 7.3% from 169.1 thousand transactions in 2008 to 181.4 transactions in 2011. The major part of these transactions consists of sale/purchase of agricultural land which amounted to about 39% of total number

of agricultural land transactions in 2011. The second important type of land transactions is inheritance, followed by change/donation with 33% and 21% of total number of agricultural land transactions in 2011, respectively. The share of other type of land transactions was of about 7% in 2011 (see figure 4).

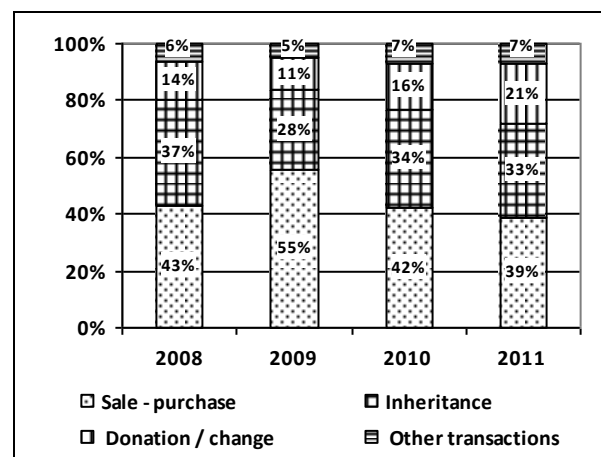


Figure 4. Structure of agricultural land transaction, 2008-2011, %

The main constraints in the development of the land market are manifold for both purchase-sale market and lease on the land. Most of these problems are common to countries in transition. Among the biggest obstacles are the following:

- Difficult identification of the transaction partners for the sale or purchase of agricultural land;
- Too high price of agricultural land and insufficient funds to purchase this land;
- Excessive fragmentation of land parcels;
- Reduced offer for agricultural land;
- The complexity of legal procedures related to sale-purchase and inheritance of agricultural land;
- The uncertainty, complexity, and long transaction process for purchase of agricultural land [0].

These obstacles contribute to increased transaction costs that inhibit the development of the land market. Transaction costs refer to the costs for information search, identification and selection of potential trading partners, negotiation of contractual terms, monitoring,

coordination and implementation of contractual stipulations [0].

At the same time transaction costs are only a part of these barriers that together with other factors such as reduced demand for agricultural land, low profitability of agriculture and insufficient motivation for selling farmland contributes to slowly consolidation of the farmland.

Causes underlying the cumbersome process of land consolidation can be grouped into several categories:

- Continuous enlargement of the process of land parceling due to the lack of the legal framework governing the inheritance of agricultural land to a single heir. Without this legal framework parcels of agricultural land are distributed to several heirs, which only deepen the process of land parceling.
- The negative attitude towards processes of association among the local farmers. This is largely due to their insufficient information about the benefits that can be obtained from the farm association, and the insufficient legal framework regulating the processes of association.
- Absence in the village of landowners, which creates serious problems because people with rights to own land are either deceased or are working abroad. In case of the deceased persons their heirs either are in the process of law to take possession rights or do not know that they can obtain these rights, especially in the situation when these people are not in the country.
- Conceiving agricultural land as a "safety net" under extreme conditions. About 42% of agricultural land is owned by farmers that cultivate areas less than 5 ha. In most cases the income from small scale farms is not enough to serve as the main source of income for rural families. Thus these owners have, as a rule, other income sources, mostly non-agricultural and non-rural, while the agricultural lands are preserved either as an additional source of income and as a "safety net" in the event of socio-economic changes in a fairly instable environment.

CONCLUSIONS

- The agricultural sector of the Republic of Moldova after the process of land privatization is characterized by a clear dichotomy between large scale corporate farms and many very small and fragmented family farms.
- Land consolidation is still at a vulnerable stage in Moldova due to the inadequate structure of the agricultural systems that does not correspond to main principles of the sustainable rural development
- Among major impediments to the process of land consolidation one can mention legal gaps, poor law enforcement and underdeveloped institutional framework.
- The small size of agricultural land plots, internal fragmentation of land in farms, predominantly subsistence nature of agricultural production in family farms significantly influence farmers' income, and their ability to maintain a sustainable rural community.

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