

Agricultural Land Fragmentation and Land Consolidation Rationality

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Agricultural Land Fragmentation and Land Consolidation Rationality¹

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Adopted about one year after the 1989 Revolution, Land Law (Law 18/1991) represented the starting point of land reform in Romania. As a result of this law implementation, at the beginning of the year 2000 the private sector owned 84% of total agricultural land: 82% of arable land, 74% of land under vineyards, 67% of land under orchards and 87% of land under meadows and pastures.

Besides the benefic social and economic effects, the mutations produced represent a distortion source in the rural area, determining the following, among others: a) crisis of ownership relations - a main aspect of this being the confusion concerning the ownership rights. The prolongation of clearing up these rights represents a major obstacle to a good operation of land market, to agricultural land consolidation implicitly; b) managerial crisis, manifested by the lack of competitive behaviour, which gives an increased importance to the production function, to the detriment of commercial function; this results in the increased share of small-sized subsistence farms (households), lack of strategic orientations, etc; c) land market crisis - occurred in the context of the lack of legal and institutional framework concerning the land market operation (credits in advantageous conditions for buying land through the banking system or by establishing specialised banks, solving up the problems in connection to using land as collateral for obtaining credits, mortgage credit stimulation); d) crisis of agricultural economic efficiency - mainly generated by land property excessive fragmentation, large area (about 55%) owned by old persons or by persons not having their domicile in the rural area, lack of main production factors combination, limited circulation of land capital, lack of an adequate legal and institutional framework, etc.

An analysis of the concrete, social and economic situation of land fragmentation and of agricultural land consolidation opportunity was conducted in the commune Balaciu; this commune is located in the plain area, with a population of 3540 inhabitants and a total area of 8462 ha.

In order to identify the rural social actors which can favour land consolidation by their structure, behaviour and functionality, the following typology of rural households has been used as methodology: agricultural households (consisting of persons working only in agriculture); pluriactive households (consisting of persons involved in both agricultural and non-agricultural activities); non-active households (consisting of non-active persons); non-agricultural households (only persons working in other non-agricultural activities).

The survey revealed that the main entities which can become the social actors of rural/agricultural modernisation, of land consolidation implicitly are the pluriactive and non-agricultural households.

In order to consolidate the agricultural land, there is an obvious and imperative need to conceive an well-articulated and coherent framework of support measures, understood and treated as a complex of economic, social, legal and technical measures, aiming at rural community development.

1. Introduction

The need to improve land management is obvious in a changing environment. In this respect, special interest is paid to rural areas where land relations have profound implications for agricultural productivity, environmental sustainability and the economic and social status of rural households. The recent and dramatic shift from a centrally planned to a market-based economy has emphasised the urgent need for the designing of an effective framework to promote a smooth and effective

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transition to agriculture land tenure relations consistent with market-oriented development.

A decade of reform in agriculture and rural areas followed, from the perspective of our study, a sinuous, hesitant evolution. Land reform is still under way, while the legal and institutional framework needs permanent improvement for normal operation and the flexibility required by regional diversity.

A crucial issue is private land fragmentation, as an historical characteristic of Romanian rural society. At the beginning of the 20th century, holdings ranging between 2 and 5 Ha in size comprised the highest percentage (35%) of total land area; at the end of the century, the average farm size was 2.28 Ha (December 1999). In 1948, rural households with less than 1 Ha represented 36%, whereas in 1998 they represented 45% of total land area.

The sector of small farmers, operating approximately 8 million Ha of agricultural land, is the main sector in the rural regions as regards land tenure, income and contribution to GDP. This sector is characterised by subsistence strategies, traditional agricultural methods, an ageing labour market and low educational/academic levels of achievement.

The legal framework, with direct and indirect implications upon the land issue, tried to encourage the establishment of private property institutions, to normalise the methods of the right to use land and to help educate people of the ecological side of the problem.

The transfer modalities of the right to use land (land lease and association), although showing a decreasing trend, remain the main factors of agricultural land consolidation.

The main characteristic of agricultural territory fragmentation is the discrepancy between the juridical situation of the assignment reflected in the property titles, and the association type in land operation, which is practised on a large scale, especially in the plain region.

2. The socio-economic profile of the investigated community

A field survey for the analysis of concrete social-economic possibilities for agricultural land consolidation was conducted in the Balaciu commune, Ialomita county, in the southern part of Romania (Southern Development Region).

A strong argument in favour of land consolidation is the commune's location in the plain region; another argument, both in favour of consolidation and, at the same time, against it, would be that this commune had an agricultural production co-operative in the past: on one hand, this means that people already have an association attitude and, on the other hand, people are reluctant to contribute their land to an association/co-operative because of the negative connotations associated with the co-operative movement in the former communist period.

An economic analysis of the investigated commune offers arguments in favour of land consolidation: there is a high proportion of arable land in the total agricultural land, i.e. 86.2% out of total 8,462 Ha; the quite rapid re-orientation of agricultural activity - in the last 3 years the agricultural activity dynamics experienced the emergence of a new crop in cultivation and the disappearance of soybeans and sugar beet; the existence of an entrepreneurial attitude due to the efficient private farms - however the number of these is low; the existence of the association movement - there are 3 agricultural associations (legal entities) and 28 family associations (non-legal entities); land leasing is a common practice, although the leasing out of land is more frequent than leasing in; there is a quite large economic sphere in which property relations operate - in the commercial sector, private property is the only property form; 25% of landowners do not live in the commune; there is no soil pollution.

The economic factors representing arguments against land consolidation, or those that may become obstacles difficult to surmount in the case of land consolidation, are the following at commune level: the decline of the association movement as a result of the erosion of the moral prestige of the association leaders – the invoked argument being their irresponsibility/lack of seriousness; of total ownership titles, only 30% were issued - the local authorities consider that this situation is a result of land owners having to pay money for such titles, and they do not have any spare money; community poverty, estimated as traditional poverty by the authorities - which comprises 60% of the commune's population; there is no land market; there are very few alternative jobs - there is a very small dairy unit (for milk processing), one workshop for wood processing, two forges and four units for fodder processing, with a very small number of workers.

The community problems represent potential problems for the possible reorganisation of agricultural land operation. The weak points would be the following: the church has no role in community life; the local authorities are not involved in the life of the commune; there is a lack of collaboration both among the local authorities and between the decision makers at commune and county level; there is much bureaucracy found at commune level; there is no Cupertino among people living in the community- during the repair and maintenance of common property (bridges, roads, fountains, etc.), there was an 80% contribution from the Town Hall and 20% from community members; the existence of a specific social disease – alcoholism, in the local authorities' perception.

3. Aspects and experiences of the consolidation processes

In order to identify the rural social actors which can favour land consolidation by their structure, behaviour and functionality, the following typology of rural households has been used as methodology: agricultural households (consisting of persons working only in agriculture); pluriactive households (consisting of persons involved in both agricultural and non-agricultural activities); non-active households (consisting of non-active persons); non-agricultural households (only persons working in other non-agricultural activities).

Table 1. Average area of land property by household type

	No. of households	Average area (ha)
Agricultural households	57	3.56
Pluri-active households	37	3.43
Non-agricultural households	9	3.45
Inactive households	43	4.30
Total	146	3.74

Land tenure is a representative dimension of rural areas. The agricultural land in the property of rural households included in the sample ranges from 0.5 Ha to 10 Ha. The average area in property is 3.74 Ha, larger than the rural average i.e. 2.9 Ha and the national average of 2.3 Ha. The analysis of the number of rural households by size reveals their concentration in the 3 to 5 Ha group, totalling 38% of investigated households.

The distribution by category of size in the Balaciu commune is not much more balanced than that at county and national levels.

The analysis of the average area by type of household reveals that the households consisting of pensioners have the largest land area as property, i.e. 4.3 Ha. This situation can be explained by the fact that Romanian Law no.18/1991 re-established ownership rights to

people who were former landowners before the communist period: these are the old people included in this category.

One can notice that the main method of property acquisition is by inheritance (69%), followed by ownership right reconstitution and constitution. The instances of property, through land purchase donations or as a gift are very few, we could say even insignificant at 2%. Ownership right constitution is specific to households with an area smaller than 3 Ha. The reason for this may be found in the Land Law's provisions. There are also fluctuations in the methods of property acquisition and by the types of households. Thus, the agricultural and pluri-active households, the households of pensioners in the first place, acquired their land through inheritance.

Table 2. Distribution of households according to the land acquisition method (%)

	Reconstituted		Inherited		Constituted		Other cases	
	No. of households	Average area (ha)	No. of households	Average area (ha)	No. of households	Average area (ha)	No. of households	Average area (ha)
Agricultural households	12	4.22	42	3.41	2	1.0	1	0.5
Pluri-active households	7	3.49	26	3.58	8	1.05	1	1.0
Non-agricultural households	2	2.75	6	4.10	2	0.5	-	-
Inactive households	19	3.41	27	4.22	3	0.83	2	3.23

*) Certain households acquired land by several methods.

The gaining possession of property documents in the Balaciu commune is quite limited. Thus, per the total sample, only 51.4% of households received ownership titles, while 41.1% declared that they effectively took the land into their possession.

A non-correlation is noticed between the peasants' statements and official declarations. The mayor of the commune declared that he is confronted with great difficulties with the distribution of ownership titles; this situation, according to him, is generated in the first place by the owners' financial difficulties. According to the mayor, less than 30% of the ownership titles were distributed (approximately 1,000 out of 3,500).

Table 3. Distribution of ownership titles and the repossession by household type (%)

	Received their ownership titles		Took possession of land	
	Yes	No	Yes	No
Agricultural households	54.4	45.6	45.6	54.4
Pluri-active households	43.2	56.8	21.6	78.4
Non-agricultural households	88.9	11.1	88.9	11.1
Inactive households	46.5	53.5	41.9	58.1
Total	51.4	48.6	41.1	58.9

One can notice the high proportion (88.9%) of non-agricultural households with their property situation resolved. This household type is known to consist of people with a high level of education and of a relatively young age.

The lack of production equipment necessary for the optimum operation of the production process, the owners' old age and their precarious health condition and the lack of financial means for the initiation of production cycles may justify the land owners' option for the association form in crop production organisation, i.e. 55.5% of the total sample; only 6.2% of those sampled were in favour of individual land operation.

Table 4. Land operation modality by household type

	Individual	Legal association	Family association	State farm	Mixed types
Agricultural households	7.0	84.2	15.8	17.5	17.5
Pluri-active households	10.8	40.5	13.5	10.8	24.3
Non-agricultural households	11.1	33.3	33.3	11.1	11.1
Inactive households	0	23.3	27.9	30.2	18.6
Total	6.2	35.6	19.2	19.2	19.2

The agricultural associations established as production units capable of providing high labour and capital productivity and satisfactory incomes, in fact establish and maintain the framework of the formal participation of associated members, subordinated to the satisfaction of the modest requirements of the family. In the most common situations, relations between the associated landowners and the association management consist of merely establishing the cropping structure of plots and the conditions for sharing the obtained products. Interest in the techniques and land operation methods (e.g. soil mechanisation works, input utilisation, average yields, costs, etc.) is very low. From discussions held with landowners who were members of an agricultural association, it was clear that they are familiar only with the quantities of agricultural products going to their own household, this attitude being atypical of a landowner. In the Balaciu commune there is a yearly movement of parcels, determined by the economic interests of the associations and State farms. With this background, it is difficult to explain how an improvement in the level of interest can be achieved.

The way agreements are reached between association chiefs and association members are highly informal, verbal agreements being 49.3% and non-registered contracts 39.9%.

Table 5. Types of agreement concluded by household type (%)

	Contract registered at notary's office	Non-registered contract	Verbal agreement	No responses
Agricultural households	1.8	45.6	45.6	7.0
Pluri-active households	2.7	27.0	62.2	8.1
Non-agricultural households	11.1	33.3	44.4	11.1
Inactive households	14.0	41.9	44.2	0

Property transfer in Romania is dominated by inheritance. Regardless of the type of household and size, the main type of inheritance is by dividing property into equal proportions to heirs.

Table 6. Property transfer options by household type (%)

	To only one child	Equally to children	To child who remains in household	Sale	Other	Not known
Agricultural households	36.8	50.9	1.8	0	8.8	1.8
Pluri-active households	35.1	40.5	16.2	0	2.7	5.4
Non-agricultural households	22.2	33.3	33.3	0	0	11.1
Inactive households	27.9	62.8	4.7	0	0	4.7
Total	32.9	50.7	8.2	0	4.1	4.1

In Romania, the main causes of fragmentation are the following: the method of inheritance, political will and, in certain regions, the shortage of financial resources.

The traditional practice of inheritance, i.e. of property transfer by dividing it into equal proportions to heirs, generation by generation, led to the fragmentation of land over time. However, it is quite difficult to determine to what extent this method of inheritance had determined parcel or property division.

In order to identify the degree of fragmentation, the following parameters were used: household size, the number of parcels, parcel size and distance to parcels. According to the fragmentation index (Januszewski index), all households, regardless of size, are considerably fragmented. As this index does not take distance into consideration, the average distance to the nearest and farthest parcel was also included in the table. Thus, one can draw the conclusion that the distance parameter further stresses the degree of fragmentation. The results indicate that larger households also have the highest degree of fragmentation.

Table 7. Degree of fragmentation

Household structure by size in Ha	Number of household	Mean plot size in Ha	Mean no of plots	Mean of Januszewski's fragmentation index	Mean distance to farthest parcel	Mean distance to nearest parcel	Believe land is too fragmented (%)	Desire less-fragmented land	Average age
< 1 Ha	6	0.4	1	0.88	4.5	1.92	60.0	50.0	45.5
1-3 Ha	41	0.79	3	0.63	7.04	2.06	63.2	61.0	60.2
3-5 Ha	54	0.88	4	0.54	7.2	1.7	72.0	72.2	63.8
5-7 Ha	32	0.91	6	0.48	7.56	1.95	86.7	87.5	67.9
> 7 Ha	13	0.92	8	0.4	7.46	1.82	60.0	47.2	74.8
Total*)	146	0.85	4.39	0.55	7.15	1.88	71.20		64.0

*) All totals are weighted averages according to population distribution across household size

The attitude of household heads to land fragmentation is a significant indicator of the situation of ownership rights to land. When asked *"Is land too fragmented, in your opinion?"* most interviewed people answered that land is too fragmented (71%). This option is more obvious in the size category 5 to 7 Ha.

Parcel exchanges between landowners were very few. By type of household, the non-agricultural households, consisting of young people with a high level of education, exchanged parcels to a percentage of 11.1%. By categories of size, the households of 3 to 5 Ha and 5 to 7 Ha took the first initiatives in this respect.

Table 8. Parcels exchange by household type (%)

	Did you exchange any parcel?		
	Yes	No	Not the case
Agricultural households	0	98.2	1.8
Pluri-active households	2.7	91.9	5.4
Non-agricultural households	11.1	89.9	0
Inactive households	4.7	95.3	0
Total	2.7	95.2	2.1

The interviewed farmers perceive differently the consequences of fragmentation, i.e.: a high proportion of respondents (32.2%) consider fragmentation to generate low efficiency; 24.7% believe that land fragmentation is due to the application of crop technology under optimum conditions; 7.5% think that fragmentation has positive consequences related to the household head's ability to disperse risk and to cultivate a series of crops on several parcels, each with its own soil and microclimate characteristics; 5.5% consider that the existence of several parcels offer greater security of harvests against theft.

Table 9. Perceptions of the fragmentation consequences (%)

	Low efficiency	Bad technology	Unsure harvest	Advantages	Others	Not the case	Not known	No answer
Agricultural households	24.6	33.3	7	1.8	1.8	1.8	28.1	1.8
Pluri-active households	35.1	21.6	2.7	13.5	2.7	5.4	16.2	2.7
Non-agricultural households	22.2	11.1	0	11.1	0	11.1	33.3	11.1
Inactive households	41.9	18.6	7	9.3	2.3	4.7	16.3	0
Total	32.2	24.7	5.5	7.5	2.1	4.1	21.9	2.1

Respondents perceive the lack of possibilities to buy land as the main obstacle to having a less fragmented land area (30.1%).

Table 10. Perceptions of the consolidation obstacles (%)

	Cannot buy the desired plot	Cannot buy	There aren't land exchanges	Legal constrains	Others	Not the case	No answer	Don't know
Agricultural households	19.3	33.3	15.8	1.8	5.3	8.8	0	15.8
Pluri-active households	16.2	24.3	13.5	10.8	5.4	10.8	0	18.9
Non-agricultural households	22.2	33.3	11.1	0	0	11.1	11.1	11.1
Inactive households	7	30.2	11.6	9.3	9.3	2.3	4.7	25.6
Total	15.1	30.1	13.7	6.2	6.2	7.5	2.1	19.2

4. Survey conclusions

It is obvious that one can find in the investigated community, a category of pluri-active people, who, owing to their multiple job holding and social capital owned, have the desire to become associated and, implicitly, to consolidate their land. They are the would-be agents of rural development, who are able to establish highly productive associations.

At a community level, the establishment of certain associations and organisations should be encouraged, that must induce, through a normative framework, a participative attitude. It is necessary to teach rural people to participate in decision-making in problems regarding their own economic and organisational strategies.

As a general conclusion, any type of agricultural land consolidation can be achieved only by taking into account the local/regional specificity (the economic history of the zone, its socio-economic and sociological characteristics, the rural population's expectations and orientations) and the social-economic needs. The application of uniform consolidation schemes is doomed to failure, as they might be perceived by people as being a second collectivisation. This would spell disaster.

5. Proposed measures

For agricultural land consolidation, a coherent and well-articulated set of measures must be established.

The economic environment. The main proposals of rural development policies and programs are focused, and have to be focused, on the following: an increase in the performance, efficiency and competitiveness of farms by promoting technical progress, production rationalisation and the better utilisation of inputs and of labour in particular; the continuation of privatisation in agriculture, the service sector, the food industry and the distribution of agricultural products; the integration of competitive farms into agricultural chains; the implementation of economic and financial policies that stimulate the stabilisation of agricultural products and their markets.

One of the important proposals that can be made in this respect is the improvement of the economic climate in which farmers are working. This should result in their natural orientation towards land consolidation. The improvement of access to credit, the development of agricultural markets and of the infrastructure in the rural areas could lead to land consolidation. It is necessary that land consolidation programs should be linked to programs having an increase in farm size as an aim. The policy of structure reform should have as a target the establishment of efficiently managed, viable farms, endowed with modern technical resources, which should provide farmers with a respectable standard of living.

Land cadastre. The speeding up of the issuing of ownership titles is vital, i.e. both the titles given according to Law 18/1991 and the creation of the technical cadastre necessary for the application of Law 1/2000. Potential buyers and lessors will not buy ownership or utilisation rights if they cannot identify the real landowner and if they are not convinced that such rights are reliable.

Simultaneously the following are necessary: the acceleration of the agricultural cadastre reform and the consolidation of the Land Book offices; the delimitation and strict establishment of areas of responsibility for the cadastre offices at county level and the Office for Cadastre and Agricultural Territory Organisation, in order to eliminate the overlap that characterises the present responsibilities of the two institutions.

Taking into consideration that currently, most of the property titles on land issued by the Ministry of Agriculture, according to the Land Fund Act, no. 18/1991 (the Land Restitution Law), are not registered in the Land Registry (the Land Book), due to the debate

on the accuracy of the measurements, the Land Consolidation Projects could be the best opportunity to solve this issue.

Rural credit. As regards rural credit, it is necessary to develop an institutional framework and a specific infrastructure. Rural credit policy should be based upon the principle of investment financing neutrality in the rural areas. Rural credit should support land buying by farmers with loans at lower interest rates and with a longer repayment period. At the same time, it is necessary to adopt a land parcelling prohibition for those who benefited from subsidies when buying land (for 10 –to 30 years).

The land market. By developing policies and legislation that can improve the quantity and quality of information on land and land transactions, a land market would develop, thus facilitating land consolidation without other special measures being taken. The utilisation of land price controls and limiting mechanisms may facilitate land consolidation in the future. The establishment of a land bank, the task of which would be to buy land for sale and to resell that land with certain facilities after a specific period of time, to those wishing to enlarge their farms.

Land lease. Under the conditions of scarce financial resources, the stimulation of land lease is an extremely important element in the establishment and development of viable farms in Romania. The legal and institutional framework should take into consideration both local experience and traditions and the social and economic realities. It is necessary that land lease laws should provide greater security to the lessee, so that he might be interested in the development and modernisation of his farm. It is desirable that land lease should be over a longer period of time, in order to favour land consolidation.

The creation of non-agricultural jobs. It is well known that land consolidation leads to an increase in unemployment. This imposes the necessity of the creation of non-agricultural jobs, as farmers adapt more readily to changing their profession if they do not have to leave their native region. The promotion and diversification of economic activities can be achieved by the following strategies: the completion of the legal framework, and its implementation, in order to increase economic competitiveness; stimulating the development of traditional activities.

Land inheritance. Certain legislation is needed in this respect that should avoid farm fragmentation. Thus, the landowner could leave the farm to only one heir, while the others could receive different compensation (cash, access to education, etc.).

Retirement from activity. Old people's retirement from work and their leaving the farm to younger farmers could be achieved by various ways, i.e.: farmers older than 65 who commit themselves to leave their farm to younger farmers would receive a complementary income equivalent to public support for partial unemployment; an anticipated retirement pension.

The development of human potential. Vocational guidance of young people towards activities that are necessary in rural areas; conceiving certain programs for stimulating young people under 30 to enter self-employment (e.g. in agricultural and non-agricultural activities); support for young farmers to increase farm efficiency and quality; ensuring conditions for qualification/re-qualification having as an aim the performance of certain new agricultural and non-agricultural activities;

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