

Land consolidation and land development in Macedonia

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1. Land consolidation project objectives

Overall objective: To contribute to the development of a competitive agriculture sector and sustainable rural livelihoods

Specific objectives

- Develop appropriate mechanisms, procedures and tools
- Develop the legal, organizational, institutional, technical and managerial framework
- Improve the administrative capacity of the public sector to handle land administration
- Include the private sector in the decision-making process

Issues regarding specific objectives

- Macedonia is undergoing major development changes in the area of land administration, denationalization, systematic cadastral surveys and rights adjudication, registration system development, data conversion, introduction of modern survey techniques and privatization of land survey services.
- One of the primary institutions responsible for many of these activities is the State Authority For Geodetic Works (SAGW).
- The Swedish International Development Agency (SIDA) provides technical assistance for education and training (capacity building), in both the public and private sectors, of technical and professional persons associated with the land administration. Swedesurvey was contracted by SIDA to implement the project in the SAGW.
- The SAGW administration and state will be educated and trained in the management and administration of the national cadastre and registration system, educated in legal matters associated with the creation, registration (security) and transfer of real estate rights and administrative matters.
- Education and training will be delivered through a series of workshops, seminars, lectures, study tours and training trips. Training includes management and staff of the SAGW offices throughout Macedonia, cadastral surveyors, public and/or private appraisers and valuers, taxation and valuation specialists, real estate agents and members the financial institutions which administer mortgage loans and other forms of credits associated with property.
- One of the strategic objectives of these training programs is to train valuers/appraisers and assessors to work with mass valuation/market-value approaches to valuation and assessment by the end of December 2006.
- Among the international courses is the course for "Information Technology for land administration". This course will include a visit to local agencies where the use of information technology in support of the land consolidation project using cadastral information will be demonstrated. (Venue: Gavle, Sweden with a study tour to Mora).

- This project includes a training program in which agricultural and geodetic engineers will be educated in all aspects of the importance and applications of land consolidation.
- As I noted last year, a section of SAGW responsible for cadastral classification and land quality valuation produced pedologic, land quality valuation and erosive maps on 900.000 ha arable land, pastures and forests. The data now has to be scanned, computerized and transformed into electronic form (for easy-of-use and commercialization purposes). Land valuation maps (classes) are of great importance in land consolidation projects.
- One expects that the new legislation for land consolidation will correspond to the European standards.
- The particular form that a land consolidation project takes in our country will depend on the institutional, organization land administrative frameworks and the division of responsibilities between agencies.

2. Importance of land consolidation

There is a great importance for land consolidation. Consolidation has great influence in rural development and in making agricultural production more competitive. Land consolidation is often used in making plans for re-organization of farmland, improving infrastructure, village renewal and influence in environmental protection.

3. The need for a land consolidation strategy

Important structural changes in agriculture can occur only if land consolidation is part of an integral rural development. The strategy should accept that not all fragmentation is problematic. The strategy should ensure that land consolidation protects and enriches the environment and must recognize the need for diverse local solutions. On the other hand, the land consolidation program will have to accommodate national and sub-national priorities as well as local ones and include the private sector in the decision making processes. Due to the complex nature of rural development, the strategy should look at a gradual approach to land consolidation, in planned stages.

4. Application of land consolidation in Macedonia and modernizing agricultural production

From the aspect of total area, natural and created characteristics, the structure of agricultural land and representation of some agricultural products, Republic of Macedonia has eight agriculturally productive territories.

For the issue of improvement of conditions in the property structure and agricultural land in total, land consolidation is a method for improving conditions in general and to overcome the effects of too many small plots of land which are economically too small, grouping of these small allotments in one or several places and the transposition of the property allotments.

Table 1R.Macedonia
SAGW cadastral evidence

LAND		PRIVATE POSS.	%	STATE POSS.	%	TOTAL	%
Arable land	Parcels(No)	2,215,189	83,2	447,482	16,8	2,662,671	100
	Surfaces ha	451,702	65,5	237,882	34,5	689,584	100
	Par./Sur. ha	0,2		0,53		0,26	
Pastures	Parcels(No)	315,605	60,4	206,764	39,6	522,369	100
	Surfaces ha	81,566	12,6	567,507	87,4	649,073	100
	Par./Sur. ha	0,26		2,74		1,24	
Forests	Parcels(No)	278,310	73,7	99,221	26,3	377,531	100
	Surfaces ha	102,374	10,9	832,765	89,1	935,139	100
	Par./Sur. ha	0,37		8,39		2,48	
Non prod.l.	Parcels(No)	661,383	65,5	348,175	34,5	1,009,558	100
	Surfaces ha	21,555	11,3	169,525	88,7	191,080	100
	Par./Sur. ha	0,03		0,49		0,19	
Total	Parcels(No)	3,470,487	75,9	1,101,642	24,1	4,572,129	100
	Surfaces ha	657,197	26,7	1,807,679	73,3	2,464,876	100
	Par./Sur. ha	0,19		1,64		0,54	

From this chart we can see that 65,5% of arable land in Macedonia is in private possession and that the number of plots (cadastral lots) in the private sector is significantly greater than in the public sector; the average plot size is 0,2 ha.

5. LAND CONSOLIDATION PROJECT IN CADASTRAL COMMUNITY EGRI-BITOLA (Republic of Macedonia)

A key element in the decision to select cadastral community Egri for land consolidation was the existence of updated cadastral records in the SAGW department in Bitola. The biggest part of agricultural land of community Egri is in the possession of local agricultural monopolies. In order to provide a more rational utilization of cultivated agricultural land and to improve the conditions for increased agricultural production, land enlargement (arondation) was performed.

Land enlargement was performed only for the local agricultural monopolies. On the other hand, individual farm-owners have a large number of small plots which are often some distance apart.

Figure 2**R.Macedonia - SAGW cadastral evidence**

Surfaces, parcels, ownership document	Cadastral community EGRI	Urban area	Arrange land	Land consolidation area
Total surface (ha)	2209	46.1	1672	490.7
Number of parcels(No)	1557	498	161	898
Number of ownership doc.(No)	187	187	22	155
Average surface of parcel(ha)	1.42	0.09	10.39	0.54
Average number of parcels in ownership doc.(No)	8.33	2.7	7.32	5.79

Regarding the implementation of land consolidation area for all land owners a list of ownership documents was made.

Figure 3

Property surfaces(ha) from / to	Total number of property in the group	Property percentage(%)	Total surfaces in the group (m ²)	Total number of parcels in the group(No)	Average surface of parcels(m ²)
0 0.2	7	4.7	10696	7	1528
0.21 0.5	19	12.7	63680	19	3352
0.51 1	30	20.0	234012	72	3250
1.01 2	37	24.7	509448	155	3287
2.01 3	21	14.0	519159	144	3605
2.01 5	20	13.3	803005	203	3956
5.01 7	16	10.7	942678	227	4153
7.01 10	4	2.7	317212	63	5035
>10	1	0.7	1506864	8	188358
Total	155	100	4906754	898	5464

Property grouping(by size) cadastral community EGRI

The land consolidation area is comprised of 898 plots totalling 4.906.754 m² with 155 ownership documents. The average size of a plot is 5.464 m² and the typical ownership document contains 5,79 plots.

Chart no.3 shows that the most frequent groups of plots are between 0,51 and 1,00 ha representing 20% and between 1,01 and 2,00 ha representing 24,7%.

Construction of new farm roads and canal network for land consolidation area of community Egri was planned in the project. Four (4) old roads will remain and the total road and canal area will be 99.955 m² comprising 18 roads (18 new plots).

Regarding the coefficient (C) for (bonity) land value classes (I class C=1,0; II class C=0,9; III class C=0,8; IV class and non-productive class C=0,7), values were determined for all plots and properties and transformed into value points.

Chart No.4

Ownership document(No)	Number of parcels	Total surfaces(m ²)	Total value of the ownership doc. (value points)	Decrease value of the ownership doc.(value points)
5	5	11425	10282.5	10061
6	2	10896	9806.4	9595.15
7	7	47246	41669.2	40771.6
8	13	61615	55248.1	54057.9
9	12	50124	42761.7	41840.5
10	8	29701	25587.7	25036.5
11	5	16907	13686.4	13391.6
217	1	11040	9936	9721.96
219	1	2310	2079	2034.21

220	1	1731	1557.9	1524.34
222	1	2009	1808.1	1769.15
223	5	19037	16912.8	16548.5
224	2	6038	5234.2	5121.44
225	1	3245	3245	3175.1
Total	898	4906754	4229211	4138104

Definitive value of properties value points Cadastral community EGRI

A coefficient for proportionally decreased property value of participants ownership documents was determine (C=0,9756).

Division of land consolidation mass premise designation of new plots according to the old situation of the owners property value decreased for the value for overall use. The biggest difficulties for property designation, in information consolidation tables is satisfying participants' wishes.

At the very beginning of land consolidation, it was indicated that the process of consolidation should be participatory and democratic.

Designation of new plots position will depend on the position of plots regarding the property owner, familiarity or productive connection with neighboring participants, inability for independent production within the farm holdings.

Chart No.5

Number of parcels in the ownership doc.	Before consolidation			After consolidation		
	Number of ownership doc.	Number of parcels	Total surfaces (m2)	Number of ownership doc.	Number of parcels	Total surfaces (m2)
1	36	36	172971	125	125	1951328
2	16	32	179557	25	50	1112047
3	20	60	215231	3	9	180586
4-5	25	112	430592	-	-	-
6-10	25	180	2153985	1	6	1504858
11-15	23	306	1196907	-	-	-
16-20	10	172	557511	1	20	157935
Total	155	898	4906754	155	210	4906754

Property structure before and after land consolidation: Cadastral community EGRI

From the property structure before and after the land consolidation one can conclude that with eventual implementation of this project for land consolidation perform on one area of cadastral community the number of new parcels from 898 will be reduced to 210 of a more adequate form and road connections. The number of ownership documents which have one or two plots is 150 and with 3,6 and 20 parcels only 5 ownership document.

Bearing in mind that in the Republic of Macedonia, 150.000 farm holdings are cultivating over 1.200.000 plots, one can conclude that with land consolidation projects obtained in overall spatial planes for communities or regions, the number of plots will be significantly reduced.

That kind of situation will have great influence in making agricultural production more competitive.

From my experience during two years of investigations, I came to the conclusion that the most important reasons for not completing the land consolidation project, (it remains only on paper), are the lack of information and cooperation between institutions relevant to land consolidation processes, the absence of public awareness campaign and non-existence of an institution which would continually study and analyze the problem of land consolidation.