

Land Consolidation in Sweden and Land Reform in Romania – similarities and discrepancies - a Comparison

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Key words: land consolidation, stake holder's role, participation of the land owners, methodology, benefits

SUMMARY

This paper presents development of Land Consolidation in Sweden implemented during several centuries and the challenges of the impending Land Reform in Romania. There are both similarities and discrepancies between the two countries.

Since late 18th Century Land Consolidation of fragmented land has been implemented in practically the whole of Sweden. Because of inheritance traditions land owners in some counties continued to subdivide land after the conclusion of Land Consolidation.

In Romania the fragmentation of land is a result of several agrarian reforms from mid 19th century until mid 20th century, when the violent socialist transformation of agriculture was implemented. After the revolution in 1989 land was privatised resulting in an extreme fragmentation of land. The objective of Land Consolidation in Sweden is to achieve forest properties well suitable for sustainable forest management. In Romania the objective is to develop competitive commercial agricultural farms. Both classical Land Consolidation of private family farms and the creation of joint properties/associations have to be used.

Land Consolidation in Romania and Sweden will affect a major part of the rural population. The reform work will begin with an extensive awareness campaign and multiple means of communications will be used. Committed stakeholders at central, regional and local level have a very important role in this awareness-campaign. In Romania the importance of participation of the land owners has been stressed in order to apply a “*bottom-up approach*”, which also has been used in Sweden during the last decade.

A number of crucial issues have to be addressed in a land reform e.g. efficient legislation for Land Consolidation, methodology of alternative Land Consolidation solutions, access to a Land Fund, capacity building, organisation and institutional framework, support schemes.

Experiences from both countries indicate that a number of factors have to be considered when areas should be selected for Land Consolidation e.g. degree of fragmentation, attitude among the farmers, presence of interested stake holders, available Land Fund, presence of associations in the area and need of infrastructural measures

Land Consolidation implies considerable benefits from both society's point of view and from a business point of view. Experiences from Bavaria and Sweden confirm that benefits substantially exceed the costs.

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1. INTRODUCTION

Land Consolidation in Sweden has a long history and started during the 18th Century. Land Consolidation was practically implemented for all fragmented land in the whole of Sweden. However Land Consolidation had to start again in the beginning of the 20th Century in the county of Dalarna mainly due to inheritance traditions among the land owners who continued to subdivide land by themselves after the conclusion of the previous Land Consolidation regardless of the consequences. *“Land Consolidation is a never ending story”*.

In Romania the fragmentation of land is a result of several agrarian reforms from mid 19th century until mid 20th century, when the violent socialist transformation of agriculture was implemented. After the revolution in 1989 land was privatised resulting in the fragmentation of land which prevailed just before the *take-over* of the communists.

The extent of fragmented areas is very different between Romania and Sweden. In Romania the extent of fragmented areas is approximately 7,7 million hectares arable land distributed over the whole country. In addition there is also approximately one million hectares fragmented forest land. In Sweden only a few hundred thousands hectares of arable land is fragmented and approximately one million hectares of forest land is fragmented mainly in the county of Dalarna in the central part of Sweden. Furthermore the fragmentation in Romania can be expressed by the size of the parcels which is only 0,5 hectares whereas the size of the parcels in Sweden is 2 - 5 hectares. These discrepancies between Romania and Sweden regarding the extent and character of fragmentation will greatly affect the awareness among the politicians, stakeholders and the land owners.

The objective of Land Consolidation in Sweden is to achieve forest properties well suitable for sustainable forest management. In Romania the objective is to develop competitive commercial agricultural farms and radically reduce the number of parcels from approx. 16 Millions parcels to less than 1 Million parcels. In order to achieve these challenging both simple Land Consolidation and Comprehensive Land Consolidation will be used.

Simple Land Consolidation	↔	Comprehensive Land Consolidation
Optimising the premises in the agricultural sector - parcel concentration - land exchange		Will also include - rural development - land use planning - land management
Common features: Strengthened ownership and rights		

Figure 1-1. Features of simple and comprehensive Land Consolidation

In Sweden both voluntary as well as compulsory measures have been used but in the most fragmented areas compulsory Land Consolidation is recommended. During the preparatory work for a land reform in Romania the politicians and the authorities are inclined to give preference to voluntary measures because of bad experiences during the communist regime. According to experiences in Western Europe voluntary Land Consolidation will not give acceptable effects.

Radical forms of Land Consolidation will affect a major part of the rural population. The reform work has therefore to begin with an extensive awareness campaign and multiple means of communications will be used. Committed stakeholders at central, regional and local level will have a key role in this awareness-campaign. They will greatly promote successful information. All national and local authorities should be involved.

The radical forms of Land Consolidation will address a number of crucial issues e.g.

- Efficient legislation for Land Consolidation
- Working concept
- Public opinion in land consolidation
- Stakeholders - partnership
- Methodology - the need of a cost-efficient procedure
- Powerful data support
- Access to a Land Fund
- Resources needed
- Organisation and institutional framework
- Capacity building
- Support schemes

In Sweden most of these issues have gradually been solved. The situation in Romania will be completely different when the land reform is initiated. Experiences from Land Consolidation in West-European countries regarding e.g. legislation, methodology and organisation will be useful when an appropriate strategy for the Romanian land reform will be applied.

2. EFFICIENT LEGISLATION FOR LAND CONSOLIDATION.

It is necessary with an appropriate legislation for Land Consolidation and the most important contents of such legislation should be

- Conditions or provisions for Land Consolidation
- Right to initiate the process
- Extent of area to be consolidated
- Opinion issue
- Responsible, independent and neutral authority for Land Consolidation Procedure
- Principles of re-distribution of land
- Provisions for the formation of joint properties or associations
- Valuation provisions and procedure
- Decision process
- Permissibility order (if needed)

- Property formation order
- Compensation order incl. payment conditions
- Order of possession
- Order of cost-sharing
- Conclusion order incl. provisions of appeals

It should be emphasized that future fragmentation has to be forbidden by law.

In Sweden there have been several legislations for Land Consolidation since 18th century and the present property formation act since 1972 satisfies the above mentioned objectives. In Romania there is no adequate legislation for Land Consolidation. In the project “*Policy Support for Land Consolidation - Romania*” a Draft Land Consolidation Law was proposed but it has not yet been decided by the Romanian parliament. Therefore an adequate legislation for Land Consolidation must be decided before the land reform can start.

3. WORKING CONCEPT

The guide lines of a Land Consolidation should be elaborated in such a way that the final result will achieve a renewal of the society and a sustainable development of the rural areas. Besides techniques and redistribution of land the working concept should focus on e.g. the social/economical development for the proprietors, resolution of the fragmentation problems, which land use is relevant, improved infrastructure, village renewal and environmental issues.

In Sweden some of the mentioned issues have been considered in the implemented Land Consolidation projects e.g. resolution of the fragmentation problems, improved infrastructure and environmental issues. Romania which is in the planning stage of a nationwide land reform has no experience of implemented Land Consolidation projects but according to the terms of reference of the project “*Policy Support for Land Consolidation - Romania*” the government has the ambition

- to facilitate the restructuring of the agricultural and rural sectors through the implementation of reformed agricultural and rural policies
- to stimulate economic growth and alleviate poverty
- to increase the competitiveness of the Romanian farming sector.

4. PUBLIC OPINION IN LAND CONSOLIDATION

Public opinion among the participants in a Land Consolidation is crucial regarding the success of the project. The reason is that if the public opinion among the participants is positive it will lubricate the mediations and the negotiations between the cadastral authority and the participating land owners thus promoting the whole procedure. This statement is valid for both Romania and Sweden. Bad experiences during the communist period are the main argument in Romania for the *bottom-up approach* whereas the previous *top-down bureaucracy* in Sweden is the reason for the new approach. Participation from the participants will also promote public opinion and it is important that the cadastral authority offers the participants opportunities to participation in important issues e.g. principles for the

elaboration of the re-allotment design, principles of valuation and investigation of infrastructural measures.

5. STAKEHOLDERS – PARTNERSHIP

Stakeholders play an important role in the initial stage of a Land Consolidation when the authorities organise information meetings for the land-owners concerned. The way this awareness campaign is conducted will affect the attitude and the opinion among the participants very much. Figures 5-1 and 5-2 are examples of awareness campaigns in Romania and Sweden.



Figure 5-1 Initial information meeting in Sweden



Figure 5-2 Initial information meeting in Romania

It is very important that stakeholders at central, regional and local level dedicate themselves at this stage in order to achieve successful information. The collaboration between the various actors in this process is shown in Figure 5-3.

Collaboration between participating authorities (institutions) at local level

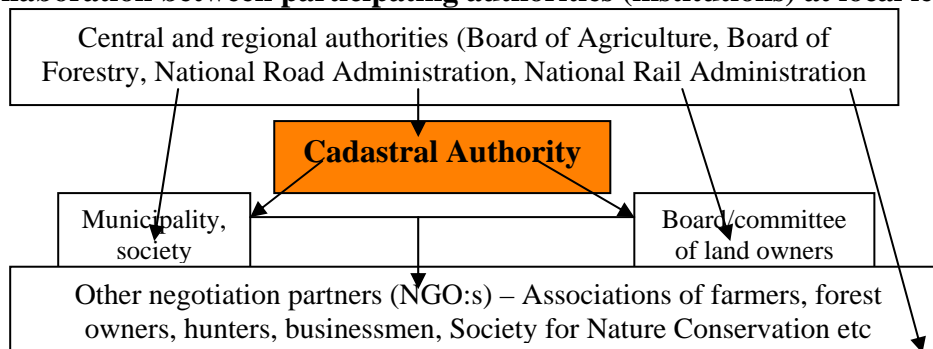


Figure 5-3 Collaboration between various actors in Land Consolidation

According to figure 5-3 the Cadastral Authority has a very central position in this collaboration.

It is also very important that the message is crystal-clear so that everybody can understand the information and avoid misunderstanding.

Nearly thirty years ago a partnership similar to Figure 5-1 was established in the county of Dalarna, Sweden, and during the last ten years the associations of farmers and forest owners have increased their commitment considerably in order to promote the interest for Land Consolidation in the most fragmented areas. Their activities have influenced the public opinion in a positive direction among the land owners concerned.

Besides the mentioned actors there are also non-governmental organisations (NGO:s) as negotiation partners e.g. Association of farmers, hunters and business-men, Society for Nature Conservation. Land Consolidation (L C) influences the rural environment to a great extent and consequently L C also influences the situation for these organisations.

Experiences from both Romania and Sweden show that in some cases local stakeholders with a strong negative attitude might argue against the proposed Land Consolidation project. In some cases such stakeholders continue their creation of negative public opinion during the Land Consolidation procedure thus complicating the whole procedure. According to the Swedish Property Formation Act there is a condition regarding the public opinion among the participants. If the opinion against the proposed Land Consolidation project is too strong the procedure has to be cancelled. In cases when the public opinion is uncertain the Swedish Property Formation Act offers an opportunity to take a permissibility order which can be appealed to the district court. This measure should be used to avoid plenty of unnecessary work.

6. METHODOLOGY - THE NEED OF A COST-EFFICIENT PROCEDURE

There is requirement in a Land Consolidation project from both the participants and the sponsors that the methodology should contribute to a cost-efficient procedure. In order to fulfil this objective the various activities have to be time-scheduled and streamlined. Romania has no experience regarding methodology. In Sweden a well elaborated methodology has gradually been developed as shown on Figure 6-1. The figure shows the chronological order of the various activities. Most of the orders will be taken at the last meeting with the participants in order not to delay the procedure. If this order is taken directly after the interviews of the participants some dissatisfied participants might appeal to court thus causing considerable delays in the procedure.

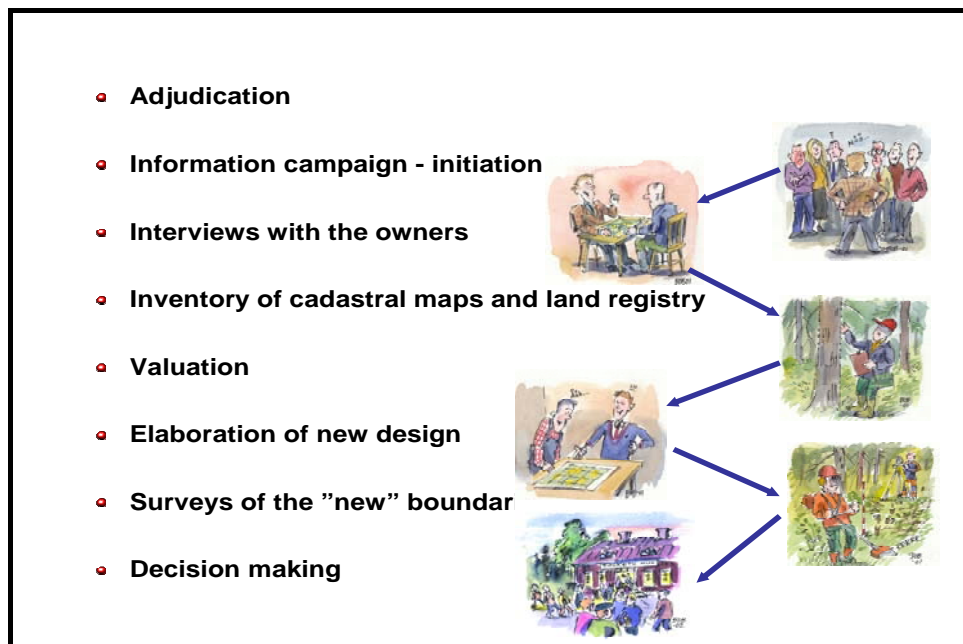


Figure 6-1 Methodology in Land Consolidation in Sweden

The described methodology will promote a cost-efficient procedure which is demanded both from the participants and the sponsors. The pictures 6-2 and 6-3 show how the bottom-up approach is applied in L C projects in Sweden. According to picture 6-2 it is important to give the individual land owner an opportunity to a dialogue regarding his proposed consolidated property. Normally forest owners are concerned about the value of both their present properties and the value of the land which they will be allotted. Forest excursions therefore play an important part to increase their knowledge and understanding.



Picture 6-2 Dialogue with a land-owner regarding re- allotment design in a L C project in Sweden



Picture 6-3 Forest excursion regarding forest valuation in a L C project in Sweden

There is one essential difference between Romania and Sweden. In Romania there are millions of subsistence and semi-subsistence farms with an average size of approximately 2 hectares. The objectives of the future Land Reform are to create competitive viable family farms. If this objective will be fulfilled the number of farms have to be decreased with

approximately 75 %. Some of the farmers might decide to sell their land or accept the proposed early retirement alternative. A majority wants however to keep their land which they recently have got back by the restitution. How can such a problem be solved? In the project “*Policy Support for Land Consolidation - Romania*” there was proposed that those farmers who did not fulfil the target of minimum size of the agricultural farms should either try to buy additional land from the land fund if its available or be shareholders of a joint property or association. The creation of a joint property or association is a low-cost procedure and the farmers do not loose their land but keep it as share of a joint property or association. It is a difficult challenge mainly for the cadastral surveyor and will require a lot of mediation and negotiation with the farmers.

In Land Consolidation projects there have to certain extent been similar situations with requirements of minimum property size exceeding that of several land owners. Under such circumstances the creation of joint properties have been a good solution but it should also be mentioned that many land owners decided to sell their land because they did not evaluate a share in a joint property very high. Today the required minimum size of forest properties have been decreased and normally it is possible for those land owners with small properties to buy additional land from the Land Fund.

7. POWERFUL DATA SUPPORT

A tremendous number of data will be handled in a Land Consolidation project. In a normal size project in Sweden approximately 500 000 data will be handled. There will be the same situation in the future land reform in Romania. Under such circumstances it is necessary with a powerful data support for

- calculation of the values
- the access to cadastral registers and to keep the cadastral information up-to-date
- the elaboration of the re-allotment design by GIS techniques and the analysis of different alternatives
- the calculations of the economical settlements for the participants

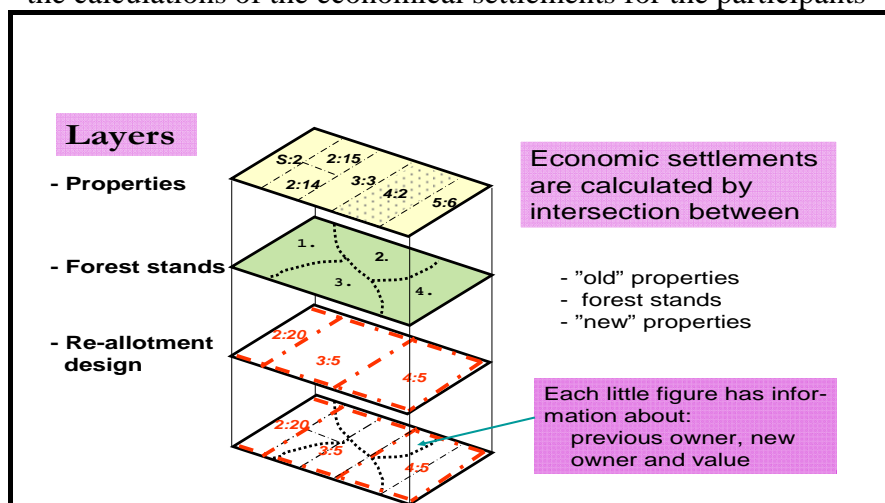


Figure 7-1 Re-allotment techniques in Land Consolidation

In Sweden a considerable progress has been achieved in the work with the re-allotment design by the development of the new GIS-system, GISOM, which matches the requirements from both participants and stakeholders. Especially the overlay-techniques offer essential advantages. The principles of the overlay-techniques are shown on Figure 7-1. During meetings between the participants and the cadastral authority it is very advantageous to show the consequences of alternative locations and design for the participant. Earlier a manual calculation of an alternative location or design of the proposed consolidated property would require at least a man-day. With the new techniques such a manoeuvre can be made within one minute!

8. ACCESS TO A LAND FUND

Experiences in many countries where a Land Fund is available for a Land Consolidation project confirm that considerable advantages have been achieved. The Land Fund will serve as a catalyst and a lubricating medium in the consolidation process. The fund can start to purchase land before and then during the Land Consolidation. During the Land Consolidation the Land Fund will then sell real estate to farmers who want to increase their farms in order to create more competitive commercial farms. The presence of a Land Fund also greatly facilitates the elaboration of the re-allotment design.

In Sweden the Agriculture Board is the agency responsible for the Land Fund and it is recommended that a similar Agency is established in Romania for the same purpose.

9. RESOURCES NEEDED

The resources needed depend on several matters e.g. the extent of the fragmentation area that need to be consolidated, the time schedule for the implementation of the L C, available subsidies, the attitude and interest among the land owners regarding L C.

As mentioned earlier the total extent of the fragmented area in Romania is approximately seven times larger than that of Sweden. Another difference between the two countries is that the future land reform in Romania will concern mainly the arable land whereas L C in Sweden concerns forest land. Therefore it is understandable that the government of Romania gives a much greater priority to the Land Reform than the Swedish government gives to L C. With regards to the extreme fragmentation in Romania it should be expected that the attitude among the land owners will be positive to a land reform. On the other hand it might be difficult to implement compulsory measures when the Romanian farmers recently have got back their land after the communist regime. The many subsistence farmers who will be obliged to sell their land or become shareholders of a joint property or association are probably not in favour of to give away their titled land.

The available subsidies have a great influence on the net cost for the Land Reform or L C which at the same time affects the attitude among the land owners regarding L C. The amount of subsidies is also an expression of to which extent the government gives priority to L C.

In Sweden the subsidies have gradually been decreased from 100 % to approximately 50 % of the total cost for L C today. This decrease of the subsidies has forced the cadastral authority to rationalize the procedure in order to keep the net cost for the land owners more or less unchanged.

In Romania the government gives higher priority to L C and has decided that the subsidies for a land reform will be 75 % including EU-subsidies during 2007 – 2013.

The time-schedule of the future land reform in Romania is mainly a political issue. In the project “*Policy Support for Land Consolidation - Romania*” the estimated accomplished area implemented per year and the number of farmers who would be concerned at two alternative ambitions of implementation time 30 respectively 50 years according to the following table.

<i>“Target” Implementation time years</i>	<i>Accomplished area hectares per year</i>	<i>Number of farmers concerned</i>
30	approx. 250 000	approx. 140 000
50	approx. 150 000	approx. 80 000

Table 9-1 Land Reform in Romania – ambitions of accomplished area/year

According to experiences from Western Europe it is neither realistic nor recommendable to assume a shorter implementation time than 30 years. Even 30 years is a very high ambition from various aspects.

During the last 35 years Land Consolidation projects in Sweden have been implemented for approximately 300 000 hectares or 8 500 hectares per year. With an increased ambition of 10 000 hectares or 20 000 hectares per year the implementation time of 1 million hectares can be seen in Table 7-2. The reason why it is not recommendable to calculate with a larger implemented L C area per year is that the majority farmers will not support a higher ambition if the subsidies will not increase considerably.

A comparison between the two tables 7-1 and 7-2 shows clearly a very great difference between Romania and Sweden regarding the importance and need of Land Consolidation

<i>Target Implementation time years</i>	<i>Accomplished area hectares per year</i>	<i>Number of farmers concerned</i>
50	approx. 20 000	approx. 4 000
100	approx. 10 000	approx. 2 000

Table 9-2 Land Consolidation in Sweden – accomplished area/year

10. ORGANISATION AND INSTITUTIONAL FRAMEWORK

10.1 Institutional Solution

In Romania there is an urgent need to establish a Land Consolidation Agency responsible for the Land Reform. This independent agency should be established without delays and should be a part of the present National Agency for Cadastre and Land Registration.

At the central level the agency will basically take responsibility for the following tasks

- establishment and maintenance of the technical system for planning and monitoring of Land Consolidation at national level
- good communication with the local offices and reporting routines
- technical support (mapping, IT, GIS)
- support to the local offices in promoting consolidation activities to land owners and the general public
- responsibility, competence, staffing and activity in legal matters for advice to local consolidation offices

At the agency's headquarters there are high rank specialists e.g. lawyers, economists, IT-specialists, public relations personnel and administrators to give the regional offices the necessary support

In Sweden where Land Consolidation has been implemented since the 18th century the organisation has gradually been adapted to the political objectives, current situation and needs. Since several decades the National Land Survey is the responsible agency for the implementation of Land Consolidation projects. The National Land Survey is organised with headquarters in the city of Gävle and regional cadastral authorities in each county. At 1st of June 2008 the Land Registration Agency will be a part of the National Land Survey. It should be stressed that the agency has to work independently in the implementation of various procedures according to the legislation. According to the rather few appeals to court all over the country there is a great common confidence and trust regarding the competence of the agency's personnel in their application of the legislation.

The staffing at the agency's headquarters includes high rank specialists similar to what is mentioned for Romania.

Regardless in which country Land Consolidation is implemented it is absolutely vital that the relationship between central and local levels as regards responsibility for production, technical guidance, operational guidance, legal support, financial conditions etc., is crystal clear.

In the project "*Policy Support for Land Consolidation - Romania*" it was estimated that the total number of personnel would be approximately 300 employees with an annual target of 150 000 hectares and approximately 500 employees with an annual target of 250 000 hectares. The target will also be determined by the number of land owners concerned. At both targets in Table 7-1 the mediation and negotiation work will be very tough.

In Sweden with a much smaller target the figures will be 15 employees with an annual target of 10 000 hectares and approximately 30 employees with an annual target of 20 000 hectares.

10.2 Coordination Committee

The land reform is a very important issue for Romania that concerns many people, institutions and organizations. It is important that the land reform offers opportunities to a participatory and “*bottom-up*” approach. The Ministry of Agriculture is recommended to be the main promoter of land consolidation. As a first step to promote land consolidation Ministry of Agriculture should initiate the establishment of an Inter-Ministerial Coordination Committee responsible for co-ordination of information activities, publicity and awareness campaigns.

The Committee shall include all relevant stakeholders including e.g. Ministry of Agriculture, Ministry of Environment, Ministry of Finance, National Agency for Cadastre and Land Registration, National Board of Agriculture, National Association of Farmers and Agricultural Research Institutions.

Rural development will be promoted if consensus can be achieved on priorities at high political level and gain political support and ensure the co-operation of stakeholders.

The Ministry of Agriculture should also initiate the establishment of regional/local committees of stake holders with a broad representation from National Agency for Cadastre and Land Registration, municipalities, county administration, association of farmers etc. These regional/local committees of stake holders should be responsible for information campaigns in order to make the land owners aware of the fragmentation problems and how to stimulate rural development. These local committees of stakeholders should also participate in the land consolidation procedure because they have good capacity as stakeholders and “*ambassadors*” thus promoting the land reform. The stakeholders have no decision capacity but will assist in the procedure as advisors and reference group.

This solution with an Inter-Ministerial Coordination Committee for Romania is proposed in the final report of the project “*Policy Support for Land Consolidation - Romania*”. It is my conviction that such a solution would promote Land Consolidation even in Sweden although the extent of fragmentation is much smaller than in Romania.

11. CAPACITY BUILDING



Picture 11-1 A Cadastral surveyor chairs a meeting

The Land Consolidation or a Land Reform can only be implemented if well educated and trained professional staff is available. This is especially important in Romania due to the huge size of the work to be done but also in Sweden because of cost reasons. This capacity building is especially important for the following categories who will work in practice with the implementation of Land Consolidation projects.

One of the most important persons in the project team of a Land Consolidation is the **cadastral surveyor** (graduated surveyor) who is responsible for the management of the Land Consolidation project.

He/she has to supervise the project, carry out the negotiations with the land owners, make the necessary investigations and have decision capacity. He/she is the key person in the project team. The Cadastral surveyor's role in Sweden is unique – it is strong and involves great responsibility.

Map engineers are responsible for the elaboration of cadastral maps and description – the final documentation of the concluded Land Consolidation procedure. These documents are very important for future research and investigation.

Surveying and valuation in the field are the most time-consuming and expensive activities in the Land Consolidation procedure. At the same time the result of these activities concern individual land owners very much. Therefore **survey engineers** and **valuation specialists** are very important personnel categories who influence the confidence and trust among the land owners.



Picture 11-2 Survey engineer and his assistant surveying new boundaries in a L C project in Sweden



Picture 11-3 Forest valuation specialist carries out forest inventory as the basis for the valuation in a L C project in

The **Valuation specialists** need adequate professional capacity in economics, agriculture and forestry, preferably on university level.

The **IT- and the GIS-specialists** are very important in a land consolidation project because they will be responsible and capable of the handling of the huge data bases, use of advanced software (GIS-applications) to elaborate the re-allotment design and the final calculations of the important compensations to be paid.

12. SUPPORT SCHEMES

During 2007 – 2013 there are EU-subsidies for Romania available for Land Consolidation for several measures entitled to subsidies e.g measure 113, 121 and 125. For Romania it was estimated in the project “*Policy Support for Land Consolidation – Romania*” that the annual subsidies from EU and the Romanian government would be approximately 15 Mill. EUR for Land Consolidation projects. It was also estimated that there will be sufficient subsidies for Land Consolidation during 2007 – 2009. The Land Reform would then accelerate gradually. The institutions have to be established at central level and in the counties and the staff adequately educated and trained. The co-ordination committees of stakeholders have also to be trained and well prepared for the planned information campaign. Information material has to be prepared and distributed. Then it will be possible to consider where to begin with the first projects.

After this initial period 2007 – 2009 the land reform will speed up in various counties.

The cost for present Land Consolidation projects is today approx. 200 EUR/hectare. Subsidies to Land Consolidation projects will be supplied from the Ministry of Environment via the

National Land Survey and from EAFRD (European Agricultural Fund for Rural Development) Axis 1 will be granted 1 Mill. EUR during 2007-2013. These subsidies will be sufficient to accomplish 10 000 hectares annually. With the higher ambition 20 000 hectares annually the budgeted subsidies will not be sufficient to cover the needs.

13. SELECTION OF AREAS FOR LAND CONSOLIDATION

In Romania the importance of participation of the land owners and stake holders has been stressed in the terms of reference of the recent project “*Policy support for Land Consolidation*” in order to apply a “*bottom-up approach*”, which will promote their attitude regarding Land Consolidation. In Sweden this approach has also been used during the last decade. Therefore it is obvious that land owners and stakeholders should participate together with authorities, associations etc when the possible areas for Land Consolidation should be selected

Experiences from both countries indicate that a number of factors have to be considered when areas should be selected for Land Consolidation e.g.

- Degree of fragmentation
- Attitude among the farmers
- Presence of interested stake holders
- Available Land Fund
- Presence of associations in the area
- Need of infrastructural measures

14. BENEFITS OF LAND CONSOLIDATION

The economic evaluation shows clearly that Land Consolidation is very profitable for both the individual land owner and the society. The benefits will exceed the costs several times according to experiences in Bavaria and Sweden. Regarding the benefits of Land Consolidation there are just similarities between Romania and Sweden. In Romania where the fragmentation is extreme the benefits of the future Land Reform will be very substantial and bigger in comparison with Sweden.

14.1 Benefits for Society

There are two important objectives related to Land Consolidation – land concentration and simple ownership conditions. If these objectives are fulfilled, then Land Consolidation will give considerable benefits of various kinds for society, business economics and environment and the conditions of life and employment in rural areas will be improved.

The main *benefits for society* are as follows

- Decreased costs for authorities
- Decreased costs for municipalities, National Road Administration, tele communication companies and electric power suppliers

- Higher quality in the Cadastral Registers (which includes the Cadastral Index Map in digital form)
- Increased activities and employment in agriculture and forestry
- Increased tax revenues

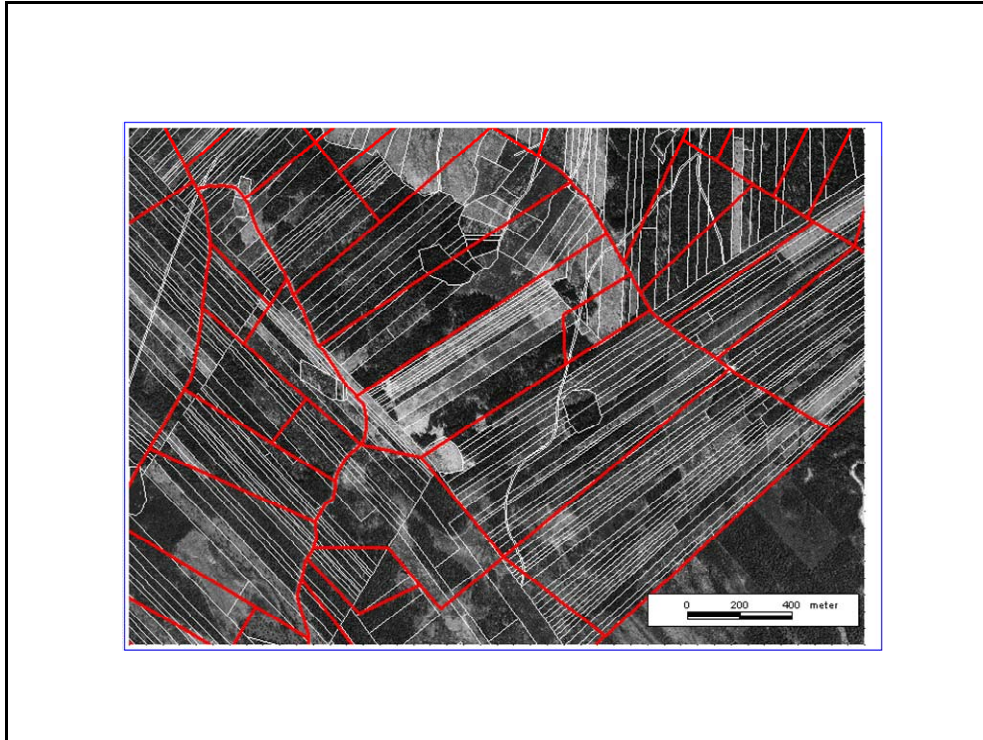
14-2 Benefits from a Land Owner's Point of View

Fragmentations into properties combined with bad ownership conditions are real obstacles for the individual farmer to achieve a rational *management* in agriculture and forestry. The main commercial and economic benefits are shown in the following summary:

- Larger cultivation areas →→ increased stumpage, lower costs for silviculture and agriculture
- 80 - 90 % reduction of boundary length →→ decreased costs
- Clear and secure boundaries →→ less disputes
- Simple ownership conditions →→ more effective management and prompter decisions.

15. CONCLUDING REMARKS

The theme during FIG Working Week 2008 is "*Integrating generations*". A Land Reform or a Land Consolidation will involve many land owners of various generations from young people to retired people. This situation is similar for both Romania and Sweden and I am sure that it is the situation in all countries where Land Consolidation is implemented. This fact offers both opportunities to learn from each other and challenges to solve contradictory views and opinions. With endurance and patience from both land owners and the staff at the cadastral offices good results will be possible to achieve. This is confirmed by numerous examples in many countries which have practiced Land Consolidation during a long time. The picture 13-1 tells you more than 1000 words – the red thick boundaries around the consolidated properties will enable a sustainable and profitable forest management mainly for the young generation. The thin white boundaries are just history.



Picture 15-1 Example of a consolidated forest area in Sweden

BIOGRAPHICAL NOTES

Mr. Mats BACKMAN born 1936, Graduated in 1963 from the Royal school of Forestry, Stockholm as M. Sc. in Forestry. Passed courses in Land Legislation 1974-75 at the Royal Institute of Technology, Stockholm. Valuation Expert in the cadastral authority in Mora and at the National Land Survey, Gävle until 1976. 1976–2004 Senior expert Land Consolidation at the cadastral authority in Mora, lecturer on cadastral courses at Swedesurvey AB. Since 2004 consultant on rural development, Land Consolidation and Valuation and an EU project in Romania during 2006. Awarded *Silverkvisten* from the Swedish Forestry Association 2001.

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