

The interaction between land consolidation and land banking/land funds

MATS BACKMAN, SWEDEN

Existing legislation regarding land consolidation/land banking/efforts

Land reform legislation has a rather long history in Sweden which relates back to the 18th century. Around 1750 agricultural land was fragmented and each farm had many narrow strips. The villages were densely built up and the farmers in a village were very much dependent on one another. They had to harvest at the same time more or less collectively and to sow the same kind of crop all of them. This situation was considered an obstacle to the development of agriculture for production of food for an increasing population. According to new ideas farmers should be given the opportunity to improve and expand their farms more individually than before. Legislation for some kind of land reform, aiming at land consolidation was found necessary.

The first law on land consolidation was passed in 1757. New rules were issued in 1807, 1827, 1926 and finally 1972. In many cases land consolidation has been implemented several times because the farmers began to subdivide the properties after deceased persons. The rules of 1757 were laid in the hands of the landowners to make most of the decisions. Later most of the decision-making was entrusted the surveyors together with two trustees. The concluded procedure was open to appeal from those discontent and required the court's confirmation to be legally effective.

During the period 1828 – 1922 land consolidation was carried out for 20 million hectares, including agricultural land and forest land which means an average of 215 000 hectares per year. The number of holdings concerned was 287 000. Land consolidation in those days meant mainly reallocation in order to eliminate fragmentation of land. Road construction and other infrastructural measures could be carried out in connection to land consolidation but were not formally included in the land consolidation procedure.

According to legislation of 1807 and 1827 it could be decided for too densely populated villages that a farmer should have to move with all his buildings to a new place out of the village. During the period 1828 – 1922 83 000 farmers out of 287 000 had to move their buildings to a new place. The cost of the resettlement was to be shared by all the villagers. The results of the land reform were good for the villagers. The improved division into property units remained good in Southern Sweden but deteriorated elsewhere, especially in the County of Dalarna in Central Sweden. The reason to the deterioration of property structure has been a more liberal view on subdivision of real properties and the attitude among the villagers in Dalarna. They have continued to subdivide properties privately and to a minor extent engaged the Cadastral Authority and have ignored the negative consequences for future generations. The holdings became smaller and smaller for most villagers and were no longer a base for the support of living. Another common obstacle for the farmers in Dalarna was the frequent joint ownership of properties, which was the result of a process lasting for generations, when the heirs of a deceased farmer distributed the estate among themselves. According to Swedish law all owners of a jointly owned property must agree on every management decision. Majority decisions are not allowed. A change from joint ownership into "*one-person ownership*" will become a great advantage for the owners.

An example from the village of Färnäs may show the deterioration during one century. When Land Consolidation was concluded in 1860 one of the consolidated holdings was owned by one single farmer. After the conclusion of the Adjudication Procedure in 1960 the same holding was owned by 175 persons, most of them living far away from Färnäs, in other European countries and even in USA. Furthermore, the original holding had been subdivided privately or by the Cadastral Authority into a much larger number of parcels

Therefore it became necessary to carry out Land Consolidation again both from the viewpoint of society and the villagers. Land Consolidation is the main tool to achieve land concentration and simple ownership conditions in areas with cadastral problems.

Today there are three main laws connected to land consolidation – Land Code, Adjudication Act, Real Property Formation Act, Land Acquisition Act and Environment Act. The registration rules also have a strong influence on the documentation of land consolidation. The present legislation framework is effective and will prevent further fragmentation of land in Sweden.

Brief review of land consolidation and land banking/land funds in Sweden

Since 1930 land consolidation has been carried out in two ways

- Voluntary or gradual land consolidation based on agreements between land owners
- Radical/compulsory land consolidation

Voluntary land consolidation is recommended in areas with moderate fragmentation which is found practically all over Sweden. The objective is promotion of rational enterprises in agriculture and forestry mainly family enterprises. Voluntary land consolidation is implemented by the cadastral authority according to the Real Property Formation Act. The parties involved agree on most matters – extent of the consolidation, purchase price, access to purchased land etc. Normally no subsidies will be given to voluntary land consolidation and the buyer pays the fees.

Compulsory Land consolidation is recommended in badly fragmented areas and frequent joint ownership which is found in the county of Dalarna in Middle Sweden. Prior to land consolidation it is necessary to implement an Adjudication Procedure. Since 1930 both adjudication and land consolidation procedures have been implemented by the Cadastral Authority as follows

- Adjudication 1 300,000 hectares
- Land consolidation 450,000 hectares

There is however still an urgent need of Land Consolidation for at least 400,000 hectares, mainly forest land.

Prior to and during a land consolidation project the County Board purchases land on sale to establish a Land Fund to be distributed among the farmers during the consolidation procedure. The Land Fund may also be increased by agreement from proprietors to withdraw their property and receive money according to the valuation made by the cadastral authority. In the County of Dalarna the Land Fund consist of approx. 11 000 hectares. The Land Fund is very important for two reasons

- Facilitates mediations and negotiations during the procedure
- Development of increased family agricultural enterprises

Those farmers who will increase their holding during the procedure will have to pay for the additional land in accordance to the compensation order. The payment conditions normally mean that those farmers have to pay their debts to the bank within one year after access of the consolidated property. During that year they also have to pay interest on debt. The interest rate today is 5 % annually until the date of expiry. In extraordinary cases the farmer may make special agreements with the county board about prolonged payment.

Implication of land fragmentation for rural communities

There are several implications of land fragmentation for both rural communities and the farmers. Land fragmentation has a great negative influence on rural development from various points of views – society, business and environment. In the county of Dalarna there is a unique fragmentation of real properties/parcels combined with very complex ownership conditions in large areas which causes essential disadvantages in agriculture, forestry and for the development of good living conditions in rural areas. The situation is a result of private subdivision of real properties during generations and the inheritance pattern among the farmers.

A bad property structure combined with bad ownership conditions make a rational agriculture and forestry difficult and limit the possibilities for active farmers to get an acceptable income. In many cases the bad structure results in such high management costs that the interest for active use is weakened. Investments in buildings and land facilities are neglected. Arable land is used extensively and results in bad cultivation. Bushes and trees will enter on uncultivated land and the open landscape will disappear. Farmers who do not cultivate their arable land themselves are reluctant to long term lease of land. The efforts from society to promote employment and subsistence in remote rural areas are therefore obstructed.

For forestry the unsatisfying structure conditions and high management costs result in generalised measures which will harm an appropriate sustainable timber production. Fellings on the fragmented properties do not give sufficient surplus for the desirable investments in silviculture. As a consequence the activity in forestry on these properties will be very low and quantities of timber are withdrawn from the forest industries. This is negative from the viewpoint of both business economics and society economics. Land fragmentation will therefore harm rural development.

Shift in purpose of land consolidation

According to present agricultural policies the main objective for land consolidation in Sweden regardless of methodology is to strengthen and consolidate family enterprises.

Voluntary land consolidation continues with the same purpose as earlier which means concentration of fragmented parcels to well-consolidated properties which contributes to a more profitable agriculture and forestry.

In **compulsory land consolidation** a more sincere concern about a sustainable protection of environment in a broad sense has developed from Agenda 21 from the the UN Conference on Environment and Development, in Rio de Janeiro in June 1992. Therefore an ecological working concept of the landscape has been applied. Both forest values as well as important environmental values such as wood habitats and valuable culture environments will be documented in the field inventory. When the reallocation plan is elaborated it should consider the environment values. Depending on the importance of the environmental values different measures can be taken

- The most valuable environments will be protected by the establishment of nature reserves
- Joint environmental properties may be established by agreement from the participants in the land consolidation
- Environments of lower values will be documented in the forest management plans that will be distributed to each proprietor after the conclusion of the procedure

Pros and cons/potentials of land consolidation

Several times the needs of measures in order to improve the structure of real properties for agriculture and forestry have been investigated by the National Land Survey or by special commissions. A report from the latest investigation was published 1983. A summary from the report will be given in the following paragraphs.

The structure of agriculture properties in Sweden i.e. the size of the properties, type of land, number of parcels and their spatial relation varies between different regions of the country. The commission estimates the extent of areas with bad fragmentation of properties to approximately 3 million hectares of which there are 2 million hectares with an urgent need of land consolidation. In the worst fragmented areas the commission recommends radical land consolidation projects. The property structure is relatively good in Southern Sweden but worse in Northern and Central Sweden.

In the County of Dalarna and some other counties there are particularly unsatisfying conditions with small properties. Furthermore the size, design and spatial location of the parcels are also bad. Areas with bad property structure are often characterised by complicated ownership conditions. The properties have several owners or are owned by estates (of deceased persons).

The commission emphasises one particular drawback – joint ownership. Properties owned by more than two persons generally result in lower felling activity and less qualified silviculture in forestry. The joint management by the shareholders is often unqualified and affects the capacity to make both short term and long term measures in agriculture and forestry. The commission therefore strongly recommends a decrease of joint ownership. By amendments of the Land Acquisition Act acquisition of shares of properties has to be approved in order to limit the possibilities to make inappropriate disintegrations.

The future potential and urgent need of radical land consolidation is found in the county of Dalarna. Therefore the cadastral authority has organised a specialized team with the principal task to implement land consolidation projects. There is also a considerable need of voluntary land consolidation in Middle and Northern Sweden.

Experiences of land consolidation since 1930

Voluntary land consolidation became quite common from 1950. The big forest companies were aware of the possibilities to improve their properties by land consolidation. Later even farmers have initiated land consolidation procedures on a voluntary basis. However, it should be kept in mind that voluntary land consolidation is suitable only in areas with moderate fragmentation. The fees from the cadastral authority for voluntary land consolidation procedures are relatively low because the parties involved carry out negotiation and valuation etc by themselves. Surveying and forest management plans will normally not be included in the procedure.

Compulsory land consolidation has resulted in great benefits for both society and participants. The results from implemented projects show clearly that the number of real properties

has been reduced considerably with a subsequent improvement of division into property units and ownership conditions. As a result of these improvements essential benefits for society and business have been achieved.

The main **benefits to society** are:

- Decreased costs for authorities
- Increased activity and employment in agriculture and forestry
- Increased tax revenues
- Documentation and securing of valuable natural and cultural environments

The main **economic and commercial benefits** are:

- Decreased costs for agriculture, logging and silviculture
- Increased timber production
- 80 – 90 % reduction of the total length of property boundaries
- Clear and secure boundaries = less disputes between neighbours
- Simple ownership conditions

Regarding the consolidation process mediation and negotiations are numerous in the large projects where hundreds of participants are involved who require much attention. It is a challenge to the surveyor to match these needs and expectations from the participants. Consensus among the participants is nearly unreachable but should nevertheless be the objective.

Stakeholders – partnership

The regional authorities – the County Administration Board, the County Forestry Board and the Cadastral Authority - have the responsibility to investigate which measures should be implemented in different areas depending on the circumstances and prerequisites. In the County of Dalarna the authorities have established a **partnership** with the Associations of farmers, forest owners and sawmills in order to prepare programmes for these measures from the principle of “*bottom up*”. This means that the main focus should be from the viewpoint of the participating farmers. The co-operation of the members in the partnership is very valuable in the efforts to elaborate adequate solutions of the problems and to make the best choice of measures in order to achieve profitable business for agriculture and forestry. The proposed measures must however comply with environmental objectives and be seen to benefit society.

The Property Formation Act requires that the resistance against a consolidation procedure must not be too strong. Public opinion among the participants is very important and has a great influence on the possible success of a consolidation project. A negative opinion will create a bad atmosphere and generate difficult negotiations thus resulting in delays and higher implementation costs. Relevant and correct information combined with faithful relations between the cadastral authority and participants is highly recommended. Local opinion moulders with personal experience from other already implemented projects will have great influence in the formation of the opinion in a particular project. Often farmers pay more attention to information given by other farmers than from officials at the authority.

According to Real Property Formation Act the authority is obliged to investigate the public opinion among the participants. If the resistance against the proposed procedure is too strong and those participants have noteworthy arguments for their opinion, the whole procedure is not allowed and will be cancelled. If the arguments are not considered noteworthy then public opinion will not become an obstacle for the implementation of the procedure.

The members of the partnership and occurring local opinion moulders are therefore the main **stakeholders** with regards to land consolidation and they have a strong influence on the attitudes among the farmers in fragmented areas.

Legal framework of land consolidation

The legal framework consists of the Land Code, the Real Property Formation Act, the Acquisition Act and the Joint Facilities Act among which the Real Property Formation Act is the most important. To a minor extent the Environment Act also has to be considered. Most of these laws were passed by the parliament in 1972 -1974 and have proved to satisfy the demands in land consolidation work.

In 1990 new policies for food was introduced which imply market adjustment and deregulation in agriculture. These changes were accompanied by a more liberal legislation of acquisition of agricultural land. The present legislation contains three central objectives

- Promotion of settlement and employment in sparsely-populated areas
- Facilitate consolidation in badly fragmented areas
- Limited acquisition by juristic persons

Special permits for acquisition of agricultural lands are required in three situations

- Acquisition in sparsely-populated areas
- Acquisition in badly fragmented areas
- Acquisition in the entire country by juristic persons

Acquisition by relatives is free from scrutiny. A basic principle in the EU-legislation says that a member state must not discriminate citizens from other member states. This requirement is fulfilled in the Swedish Acquisition Act.

The limitations to acquire agricultural land according to the Acquisition Act have principally regional political purposes in order to promote settlement and employment in rural areas. Priority will be given to persons already settled and those who intend to settle permanently on the property. Local industries will also be given priority to in order to secure their raw material supply.

A refused permission according Acquisition Act comply sometimes an obligation for the State buy the particular property. This purchase is made by means of the Land Fund which was established in 1948. There have since then been relatively strong connections between the Acquisition Act, the Land Fund and the grant for subsidies for rationalization

Financiatiion of land consolidation

In land consolidation procedures in Sweden the participants are involved in different payments

1. Fees to the authority
2. Fees for handling costs
3. Compensation for differences in value between the “old” property and the “new” consolidated property.
4. Financing of new truck roads

1. Fees to the authority

All participants are obliged according to Real Property Formation Act to pay fees to the cadastral authority for the work done by the authority. In this context two different situations should be distinguished – voluntary land consolidation and land consolidation procedures where the compulsory rules in Real Property Formation Law may be used.

Voluntary land consolidation may be initiated anywhere but is more common in areas with moderate fragmentation of properties where good results can be achieved to acceptable costs. In these areas there are rather strong interests among property owners to initiate and implement land consolidation procedures.

In areas with very bad fragmentation of properties and complex ownership conditions it is also possible to implement voluntary land consolidation. Such measures, however, will be very expensive and the improvements of division into property units are normally negligible or insignificant. From the viewpoint of society the benefits of voluntary land consolidation in badly fragmented areas are not sufficient to entitle subsidies. Even from the viewpoint of business economics the benefits with voluntary land consolidation in badly fragmented areas are too small especially when the owners themselves have to pay the fees without any subsidies.

In badly fragmented areas compulsory land consolidation procedures measures are strongly recommended for large areas of at least 2 000 hectares. The costs are normally financed partly by subsidies, partly by the participants. Land consolidation projects initiated according to Land division Act from 1926 were financed to 100 % by *subsidies from the government*. Subsidies for projects initiated after 1972 according to Real Property Formation Act have been reduced to 75 % and later to 50 %. If EU subsidies will be granted the government subsidies will be reduced accordingly.

The gross cost for the land consolidation projects in Dalarna during the coming ten years has been estimated to 220 M SEK totally. Therefore there is a need of subsidies from the government and EU amounting to 110 M SEK or 11 M SEK annually. The average gross cost amounts to approximately 1 800 SEK per hectare which means a net cost of approximately 900 SEK per hectare.

Subsidies from EU have been achieved for the financing of land consolidation projects during 1995 – 1999. During 2000 – 2006 there are two EU funds available – structure fund goal 1 and the Rural Development Programme(EAGGF). Environmental objectives, renewal of villages and small towns and strengthening of employment in rural areas are normally required for financing by EU subsidies.

Financing of Swedish land consolidation work by *credits* has till now not been necessary or used for the majority of the participants. After possession they will in most cases finance the fees by income from timber sales or from sales of agricultural products. Since 2003 both fees and handling costs are allowed to be deducted from income in the taxation.

2. Handling costs

The participants have financed the handling costs without subsidies since 1930. In practice manpower has been employed on short term basis and has assisted in control inventory and surveying work in the field. Today handling costs amount to approximately 180 SEK per hectare as an average.

3. Compensation for differences in value between the “old” holding and the “new” consolidated holding

Most participants wish that the new consolidated holding should have a value corresponding to that of the “old” holding. The authority strives to keep the compensations lower than 5 % of the value in order to fulfil wishes regarding allocation and equal value. Some participants however want an increase of the property and consequently they must pay compensation. Therefore quite a few participants will have to pay compensation for the higher value to those participants who accept a lower value on the new property than that of the old property.. The compensations are decided in a compensation order by the cadastral officer and the two trustees.

4. Financing of new truck roads

If there is a need of new truck roads such costs can be financed in another way. Preliminary to the construction work all trees along the projected road have to be logged within a twenty metres width. The owners of the trees will normally sell the timber in co-operation. The income of the timber sales will be at the disposal of the land consolidation project as an advance. When the costs of road construction have to be distributed among the owners who have benefits of the new road the income will also be distributed among the owners according to their share of the timber sale and a saldo is calculated. Some owners have to pay and others will receive money. This solution has been a very successful way to finance road construction and to the satisfaction of the owners concerned.

Apportionment of costs

The decision about the apportionment of costs among the participants is a delicate issue. The participants claim justice and fairness in the principles for the apportionment. According to Real Property Formation Act the apportionment should be based on the benefits for each participant. In some cases adjustments of the calculated cost have to be made to fulfil the objective of fairness.

Participation of banks, use of mortgages

Since 1930 banks have not been involved directly with financing by credits but have been authorized to implement the compensation transactions between all participants. In most cases the transactions have been made very smoothly and fast because there is a common attitude among the farmers in Dalarna that they do not like to owe money to anybody. Problems might occur in times of declining timber prices after the compensation order. In such cases it is possible to extend the date of expiry.

There are seldom needs of mortgages for the payment of fees, handling costs or compensations in a land consolidation procedure. The participants normally finance their payments within the prescribed time of payment with money from their bank accounts or by timber sales. Mortgages are however more common after the conclusion of a land consolidation project, if the owner makes investments in building constructions, drainage systems or acquisition of more land. This is the Swedish way to link land consolidation to a mortgage secure credit system.

Amendments and changes in the process of land consolidation

Successful large-scale Land Consolidation projects require both rational and cost effective procedures but justice is also important and must not be neglected. In earlier projects during

1930 – 1960 the authority used the approach “*top – down*”. Today much more attention is given to the perspective of the participants and a new approach has been applied “*bottom up*”. An appropriate methodology, project management and decision making during the procedure will achieve these objectives.

It is important to analyse the whole procedure step by step from the start until the end. Such a scheme will serve as a base for the working plan, budgeting and manning. In present consolidation projects the following methodology is applied

- Strategy of the project
- Dialogue with the farmers
- Valuation techniques
- Working out of a reallocation design
- Surveying techniques
- Decision making

During the last fifteen years a considerable progress has occurred in various respects and amendments of great importance for both the participants and the procedure have been achieved. Further attention should however be given to

- Methodology
- Partnership
- Opinion issues
- The need of a cost-efficient procedure
- Technical development
- Costs and financing
- Political support

Both society and the farmers require that the implementation time of a consolidation project must not be too long. Therefore the methodology has been improved to speed up the implementation and the decision making. The implementation of a normal size project of 10 000 hectares is estimated to 4 – 5 years excluding trials in courts.

Target groups, benefits

The main target groups are farmers with properties in fragmented areas but society has also to be included in the target group. In the county of Dalarna we estimate that there are between 15 000 -20 000 participants with fragmented properties.

Performance indicators, monitoring

Promotion of the land reform in agriculture includes several activities. The first step is to investigate which areas are supposed to be used for agriculture and forestry. The Ministry of Environment is responsible for the environment, planning and building. Municipalities have the responsibility to elaborate general plans which regulate the land use within the municipality i.e. areas for housing, industries, agriculture, forestry etc.

Within areas designed for agriculture and forestry further investigations have to be made to get all prerequisites for a land reform sorted out. Various cadastral characteristics in different areas of the county will require different programmes of action. For the most fragmented areas a superficial estimation of the attitude among the farmers is also necessary. The investigations are made by the county authorities in co-operation. According to their analysis and conclusions programmes of action are elaborated. The results and recommendations are then presented and discussed with the partnership for rural development in Dalarna.

The needs of a land reform for the participants have to be judged with regards to the following parameters

- Role and importance of agriculture and forestry in a particular area
- Extent of fragmented arable and forest land
- Degree of fragmentation of properties
 - Average size and structure of properties and parcels
 - Number of joint properties
 - Frequency of joint ownership
- Characteristics of the farmers – age, interest and inclination to development and investments
- Type of production – milk production, pasturage, meat production, crops, forest management(timber production)
- Investigation of possible needs of road construction
- Choice of the appropriate consolidation procedure
- Estimation of time and costs for the proposed consolidation procedure

The area requirements depend very much of the type of land consolidation chosen. It is sufficient with rather small fragmented areas if voluntary land consolidation is the appropriate method to improve the property structure. When the *extent of the fragmented area* increases voluntary land consolidation will be more complicated, time-consuming and expensive. The benefits and advantages of this method will then be less than if compulsory land consolidation including is used. The minimum size when the last method is recommended is approximately 100 hectares of arable land and approximately 2 000 hectares of forest land. Naturally the attitude among the participating farmers will affect the choice of method.

The results of the investigation of the above mentioned parameters will be used for the *choice of consolidation scheme*, decisions about subsidies, recommendations to the farmers about the appropriate consolidation method etc. *Time and costs* have also to be estimated for the possible land consolidation procedure that will be recommended for a particular area. Confirmed information about subsidies from the entitled authority is needed in order to calculate the net cost for the farmers. These estimates and the necessary decisions are made by the authorities in co-operation.

Agriculture

The Swedish Board of Agriculture is the Government's expert authority in the field of agricultural policy and the authority responsible for the sectors agriculture, horticulture and reindeer husbandry.

The overriding objectives for agriculture are:

- to promote competitive food production, compatible with the protection of the environment and animal welfare, and beneficial to consumers
- to administer the CAP(Common Agricultural Policy) in accordance with EU legislation
- to ensure food supply, drinking water included, in the event of crises of national security, in times of war and during severe peacetime emergencies.

Forestry

The National Board of Forestry is the central authority responsible for:

- Supervision of the Forestry Act
- Advisory services to, and training of, forest owners
- Inventories of natural values on forest land
- Follow-up and evaluation of practical effects of the forest policy
- Mediation of subsidies for certain forest- and environmental protection measures
- Information to forestry sector, media, schools and the public
- Forestry statistics

Sweden's forest policy was enacted in 1993. It incorporates the commitment made by Sweden at the UNCED Conference in Rio de Janeiro in 1992. The Forestry Act includes goals for both forest production and forest environment. The forest policy states that forest management will be characterised by multiple uses – hunting, gathering of mushrooms and berries as well as active silviculture.

The importance of a sustainable and valuable yield has increased gradually during the last century with the development of forest industries in Sweden. Forestry and forest industries have since several decades a major economic role in Sweden. Reforestation after clear cuts is compulsory to secure a future sustainable production. Clearing and thinning are then necessary for the production of commercial pulp wood and sawlogs.

“Green” forest management plans will in practice contribute to the fulfilment of both sustainable timber production and protection of woodland key habitats.

Management and control of the reallocation

The National Land Survey is the central authority responsible for the support and supervision of the use of Real Property Formation Act in order to secure high standards in the decisions in the property formation procedures and to eliminate mistakes and failures in decisions made by the cadastral officers

Providing of supervision over adherence to rights, nature of land use, timely submission of necessary information

In rural areas regarding the use of arable and forest land the County Administration Board and the County Forestry Board are also responsible for the continuous supervision. Supervision of arable land regarding cultivation, protection of environment and animal welfare is carried out by the County Administration Board according to EU legislation and the Common Agricultural Policy. In forest areas the supervision carried out by the County Forestry Board has to be in accordance with the Forestry Act in order to fulfil the objectives in the legislation.

In cases of transgressions of the prescribed land use legal measures will be taken.

Medium/long term perspectives of current system

Land consolidation has several challenges in both medium and long term perspective

- The financing by subsidies from the government as well as from EU funds has to be solved on a sustainable basis
- The opinion issues have to be managed professionally

The methodology and effectiveness need continuous development

Experiences in other countries

Sweden has been working since fifteen years with institutional consultation in many countries with mapping and the establishment of cadastral systems. Even rural development programs are on the agenda in for instance Greece, Guatemala and the Philippines where both uncertain ownership conditions and fragmentation of properties are common. In these countries there is a need of both adjudication and land consolidation measures.