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LAND FRAGMENTATION AND LAND CONSOLIDATION IN THE AGRICULTURAL SECTOR

A CASE STUDY FROM HUNGARY

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The State of Agricultural Land Ownership, Land Tenure and Initiatives for Land Consolidation in Hungary [1]

The aim of this study is to identify the economic and social consequences that follow a transformation process in agriculture and the effects it has on rural residential society. We focused our research on how the liberalisation of the previous, limited private ownership of arable lands as well as the methods of their privatisation, affected prudent land utilisation and the trends in residential incomes arising from agriculture. We also analysed the consequences of the current extreme subdivision (or fragmentation) of ownership, the ways of handling this situation, and the methods used to aid prudent land consolidation.

1 Introduction: The Initial Conditions

By international standards, Hungarian agriculture has huge potential in terms of soil quality, climatic conditions and terrain. Seventy percent of the country's total area of 9.3 million ha, (93 thousand km²) is suited to crop production. The ratio of agricultural area including arable-land, garden, vineyard, orchard, and grassland, to total land area is similar to Denmark, and is very high compared to other European countries. In Hungary, the ratio of agricultural land supply per hundred people exceeds the European average of 45 ha by 35 percent. Regarding arable land per agricultural employee, Hungary is only preceded by Denmark, Sweden and France.

Due to these favourable conditions in agriculture, land ownership and farming structure have always been important and politically charged issues in Hungary. This is illustrated by a history of three contradictory land reforms in the past half-century, their only common feature being the underlying political motivation at the expense of economic efficiency. These land reforms created huge problems for a rural population dependent on agriculture, and it is generally agreed that agriculture and land ownership have failed to develop functionally in the past decades.

As a result of the first land reform of 1945-1948, agrarian structure became characterised by a dual structure of many small-scale farms, co-existing with a few relatively large state farms, which covered 15 per cent of the arable land. After 1948, under a more severe socialist regime, individual farmers were forced to establish cooperative farms. This process – a second large-scale land reform -- was completed by 1962, with 90 percent of total arable land being covered by large-scale farms. From then on, the size of the large-scale farms was gradually increased due to continued mergers. Small-scale farms however were not fully eliminated, and during the communist period they provided about 35 percent of total production, mainly in livestock, and horticulture. Under communism, the small-scale farms worked mostly in conjunction and co-operation with the large-scale farms. Since the 1960's

[1] This study is the final summary of research carried out in Hungary and specifically in Harta and Szakmár villages in the first six months of 2000 by the Research and Information Institute for Agricultural Economics commissioned by the Budapest Office of the FAO. The study represents the individual observations of the authors rather than the Institute. We are grateful for the generous assistance and the warm and friendly reception we were given while preparing our study, throughout our visits, discussions and time-consuming data-surveys. We are especially thankful to the people of Harta and Szakmár villages. Finally, our thanks go to Fritz Rembold and Karl Kollmer, the representatives and experts of FAO for their advice and comments on the work.

there has been a rapid change in Hungarian agricultural structure, which led to the establishment of 1,500 large-scale farms and nearly 1.5 million small-scale agricultural producers.

In the 1980s after approximately two decades of successful farming, increasing economic problems emerged in the agrarian sector, which required prompt solutions and changes. At the beginning of the 1990s, after the collapse of command economy structures and state socialism, a return to private ownership and farming through a third agricultural land reform was pursued as a potential remedy to the problems. Agricultural land reform, as in the other former socialist countries, revealed numerous contradictions. A significant majority of them are still unresolved even today, nearly a decade after the transformations. One of the main problems with the current move to land privatisation is that, again, it was politically motivated without consideration of economic efficiency. The lengthy process of transferring large state owned cooperatives to private landowners, came to a head in 1992, a period heavily burdened by economic crisis. This protracted crisis itself is more than enough to make land consolidation imperative, but the urgency of the task involved is further emphasized by the forthcoming EU accession.

The recent land reform of the early 1990s attempts to overcome the problems associated with the forced collectivisation and organisational transformation that took place under communism. Starting in the early 1990's, the Compensation Act was carried out followed by land privatisation of the cooperatives. Both processes have caused a significant change in the agricultural structure. The outcomes affected more than half of the total area of the country and over 2.5 million new owners were created. Compensation and land privatisation resulted in inadequate land size and shape, and an overly fragmented distribution of plots belonging to one owner, failing to support viable family farming and competitiveness. Plot ownership patterns differ significantly from land use structure e.g. the viable agricultural plots. The introduction of a well-established land consolidation procedure, supported by the National Land Fund integrating the rural development approach of some EU Member States, can significantly contribute to a better quality of life in rural areas.

Due to the collectivisation experience agriculture has become characterised by a disinterest and indifference. To remedy this the current land reform attempts to remedy ownership grievances in the following ways:

- Compensation - all those who were entitled to ownership compensation or who owned compensation vouchers, in the form of state-issued securities, were able to obtain land ownership at a lower cost through an auction system, exchanging these vouchers. The area of the land purchased by this system was determined by bidders previous land holdings, local interest and demand, and the land fund available for compensation. These lands were very diverse in terms of quality and size depending on the location and time of the auction, and to a lesser extent than in the past, inheritance procedures.
- Under the terms of the compensation, members of Co-operatives owning less than 30 Golden Crowns could supplement their lands up to 30 Golden Crowns and the employees of large agricultural farms were allowed up to 20 Golden Crowns. This method and principle resulted in the take up of a large number of small plots.
- Previous owners and their heirs were permitted to take possession of plots formerly in their possession. The size of these lands depended on the size of the former ownership.
- A special form of land acquisition involved the distribution of remaining land funds available at those large cooperatives where the above-mentioned first two legal titles

combined had not accounted for the entire available land fund. (Priority in obtaining land from the total area went to those who had always remained owners according to the registers.)

The major source of compensation from the land funds came from the common and indivisible land property belonging to the cooperatives.

Under the new land reform, approximately 36 percent of the total land area managed by cooperatives under communism returned directly to its owners, 61 percent was common land and 3 percent is owned by the state. Specifically, it was the common-owned land, and a small proportion of state-owned land, which was distributed in the compensation process based on legislative decision. Fifty three percent of members' common property was obtained by those 'originally compensated', 24 percent was given to smallholders supplemented to 30 and 20 Golden Crowns, while the remaining 23 percent was distributed among all the members according to each Cooperative's different principles of distribution of the total property besides land.[2] The land was divided into a great variety of different sizes, but with characteristically low ownership ratios.

As a final result, the compensation process, intended to remedy previous aggressive interventions and deprivations of rights, led to changes in ownership, which, despite its more or less consistent aims and intentions, became more of an obstacle than an opportunity for private farming. Two aspects deserve special attention:

- In several settlements and agricultural cooperatives the new land owners decided to maintain common land usage and the cooperative framework for the cultivation of land . Typically, these are cooperatives that are able to provide necessary farming inputs and production co-ordination as well as marketing and warehousing services for individual farmers.
- Overall, in the wake of decollectivisation agrarian structure has become characterised by a few large, viable establishments and a large number of small economic units based on smaller property areas. These latter land holdings are often farmed by an aged population. The latter can in no way meet the requirements of profitability, but provide their owners with a vital subsistence requirements. For these owners, the lack of enterprises providing suitable support services is a real problem, and their situation, due to their decreasing physical strength and obsolete machinery, is worsening rather than improving.

Local heirs and owners, the majority of who are pensioners, obtained a significant proportion of the land. They are not independently able to cultivate their lands efficiently (if at all) although, in most cases, they are strongly dependent on private land usage. It is difficult to imagine that any form of land consolidation of very fragmented, small plots will happen in the near future. A dynamic land market needs to emerge and the dependence of the aged rural population on land will need to be assuaged. An impending danger is, however, that a bigger part of private producers are not entitled to pension schemes due to government

[2] **GOLDEN CROWN** is the official measure used for expressing the estimated value of arable land as well as different qualities and branches of soils in Hungary. As there still does not exist a real land market, the legal rules and economic regulators all build on the golden crown system which derives from the old Austrian - Hungarian Monarchy's Land registration .

problems, this way the necessity of supplementary income and subsistence farming will not decrease in the future.

Rural Development

Due to the economic and social transformation at the beginning of the 1990s, previous territorial disproportions became even more significant. The loss of markets, drastic drops in profitability, increasing unemployment etc, brought about new economic and social tensions, with territories in permanent crisis struggling not to fall behind. This problem needs urgent remedy, and is made more urgent by the preparation of the accession to the European Union. It is of primary importance in EU politics to decrease the differences in the economic development of the different territories. The Act on Regional Planning and Development[3] passed by the Hungarian Parliament on 19 May 1996 had been worked out in accordance with this. The Act obliged the ministries concerned to prepare the National Regional Development Conception, passed by the Parliament in March 1998, together with the Rural Development Program, which forms an integral part of the Conception, and was prepared under the responsibility of the Ministry of Agriculture.

'Rural development', a new term in regional development and not used in Hungary before, is in accordance with EU terminology. The regional development conception considers 83% of the country as rural area, to be treated according to the principles and methods of regional development accepted in Europe. It is not possible though, to grant significant subsidies to the whole rural area, therefore, only small territories with a high proportion of agricultural employees, low population density, poor soil quality and supporting potential, and permanent transmigration can be regarded as rural.

In accordance with the above definition, rural development is an extremely complex task. It includes the development of rural farms, villages and small towns, the economic concentration of rural territories, improvement of employment and living conditions, modernisation of communal and production infrastructure as well as the forming of rural communities and the preservation of traditions. It is obvious that the resolution of this complex range of tasks needs contribution from each sector of the economy. The tasks of the different sectors need to be harmonised, bearing in mind the different characteristics of the rural territories. It is of primary importance also because according to the qualifications applied in the OECD, 85 percent of Hungary's territory is rural.

This study attempts to address the following problems.

- At the turn of the millennium, Hungarian agriculture has not yet arrived at a position that would enable its development under consolidated economic and political circumstances.
- The negative consequences related to the parcelisation of agricultural land that has occurred due to the compensation law and other state measures will take a long time to remedy.

The conditions for creating a reasonably functioning land market have not yet been created. The main economic reason for this is the crisis of agricultural production and permanent income deficiency. At the same time, the legal conditions for a potential land market's participants to compete as equal buyers are still missing. All thorough considerations of the current agrarian situation lead to the conclusion that, instead of

[3]The Act XXI. of 1996 on Regional Development and Planning

emphasising the question of land ownership, the rationality of land utilisation should be paramount. The issues of ownership and land market regulations should be re-addressed to encourage the creation of a viable farm structure.

In section two below, we review the legislation and legal procedures underpinning the recent land reforms of the 1990s. Section three provides an overview of the system of land administration in Hungary. Section four presents a picture of the macroeconomic climate of contemporary Hungary, followed by a review of agrarian landholding structure and the socio-demographic environment that landholders typically find themselves in. The next section presents the results of a small survey that we carried out to assess rural reactions to the possibilities for land consolidation. Finally, we summarise the chapter and present some conclusions.

2 Land Reform: An analysis of the current legal situation

2.1 An analysis of the legal framework

Unlike many Central-Eastern European countries, Hungary avoided both restitution to former owners and land allocation to agricultural producers without land in its land privatisation procedures after the collapse of socialism. Land confiscated by the communist state in the 50s and 60s was not returned in kind to its former owners or their heirs. Instead of 'physical' land reform, Hungarian land policy, based on partial compensation, resulted in land privatisation which was determined by the following factor. The legislation did not acknowledge that communist efforts to consolidate land into large-scale cooperatives had eliminated the notion of private property or private land ownership. The land cooperatives set up under communism were not deemed illegal, therefore, the constitutional court could not demand the return of the ownership of the available land to prior owners. Instead, the Act on Compensation (Act XXV of 1991) regarded this infringement as simply unjust and to be dealt with in accordance with the conditions of compensation for other types of unjust damage caused to citizens' property. This legal solution, however, excluded the constitutional basis of restitution. Those entitled to compensation were unable to reclaim ownership of confiscated land either in kind or in financial value. The 'unjust' grievance simply entitled them to acquisition of compensation vouchers, in effect partial compensation.

In addition, the establishment of a 'quasi land market mechanism' became a significant element of the partial compensation programme. This mechanism, devoid of real property values, set a symbolic land price which institutionalised the transfer of the ownership of arable land by sale contracts from those entitled to compensation vouchers directly to favoured original accumulators of capital who were not entitled to compensation.[4] This was facilitated by compensation vouchers, which functioned as negotiable securities, transferable to anyone. Compensation vouchers could be bought for money by anyone, the size and the quality of land purchased at land auctions for HUF (Hungarian Forint) 10,000-20,000 depended on the buyer's capital and his informal relationships.

[4] Under the Act XXV of 1991 only some definite persons were entitled to partial indemnification who were deprived of their land ownership by party state. The ruling elite of agriculture was not entitled to any compensation. However, this stratum of society as 'favoured original accumulators of capital' could buy for a symbolic price from the owners a large number of compensation vouchers, so they bought lands in the compensation process.

According to the provision of the law, each landowner is entitled to a 'proportional ownership' related to his ownership share.[5] Legal settlement of these cases and the reinstatement of land have not yet been accomplished. The average size of one proportional ownership is 1.51 ha for each member of a cooperative. According to statistics, those compensated have obtained the ownership of 2,227,804 ha, which are dispersed in 703,203 plots to a value of 40,194,507 Golden Crowns. The average Golden Crown value is 18 ha; the average plot size is 3.168 ha. Cooperative proportional ownership amounts to a total of 2,865,836 ha; the number of owners is 1,897,741.

Cooperative members' claims for land extended to 30 Golden Crowns while those of cooperative and state farm employees' to 20 Golden Crowns. By the distribution of areas between 0.5-1.5 ha this did not exceed the size of former household lands and those allocated as an equivalent of wages.

2.2 Land tenure security and property rights

The Hungarian Civil Code, based on the text of Act IV of 1959, as amended repeatedly since the early 1990s, establishes general rules on ownership rights. Chapter IX of the Code defines the objectives of the ownership right, ownership protection, details the right to possession, the right of use and of making profits, the right of disposal, etc. Chapter XI identifies the general rules concerning property acquisition, such as, rights of transfer, the act of authority and public sale, usurpation, accretion, and the appraisal of unclaimed goods. Chapter XIII covers the rights of use, usufruct and easements. However, all these rules are applicable to real estate but not specifically to agricultural land. In fact, the Civil Code can settle a dispute concerning land use only in cases where the special rules of Act LV of 1994 on Agricultural Land do not provide a solution to the problem. The Civil Code explicitly expresses the priority of the Land Code over the Civil Code according to the old legal principle; "*lex specialis derogat generali*." Consequently, the Civil Code can be considered the legal foundation of the Hungarian property law system, but its rules are only exceptionally applied to agricultural land.

The Hungarian National Land Fund facilitates the following:

- The harmonisation of land market and land use.
- Strengthening the land market.
- The execution of land consolidation, thus creating effective farming.
- Improving the viability of family farming by enhancing the conditions.

The Act LV of 1994 on Agricultural Land covers all relevant issues of land ownership and land use, including the terms and conditions of leasehold. The most important legal provisions in this Act cover the following:

a). The conditions for land purchasing by Hungarian private persons. Specifically:

- One person (one member of a family) may acquire the property right for farm-land with the exception that the size of his/her property should not exceed 300 ha or the value of 6000 Golden Crown.

[5] **Proportional ownership':** This term means a special category of common ownership having by such co-operative members who could not get their lands back from the cooperative in kind even for the time being., so it is cultivated by the cooperative or other lessee, while legally the
private plots belong to common ownership.

- The above mentioned land size should also include the surface area of non-cultivated land, forming an independent real estate property.
- When determining the size of land obtainable by Hungarian citizens, productive land having an area of 6,000 m^2 as a maximum and used as real estate belonging to a cottage, should not be taken into consideration;[6]
- Private persons are entitled to exchange their productive land for other land, equivalent, or less, in size and value. The acquired land ownership may exceed the legal limits only under the following conditions:
  - The land is purchased using money earned as compensation for the expropriation of existing real estate.
  - Alternatively, the cultivated land comes into one's ownership by the liquidation of a common ownership of existing agricultural land.

b) With the following exceptions related to Hungarian entities listed below, legal persons and other entities (not an individual person), whether domestic or foreign, are not entitled to acquire agricultural land and natural conservation areas:

- The State.
- Local governments.
- Public foundations.
- Non-profit associations managing forests and grazing land.
- Mortgage institutions may also acquire land as a collateral for their activities, but they must resell it within 3 years.
- Churches, as legal entities, may also acquire the ownership right of agricultural land either by inheritance or donation, but not by purchase.

c) Foreign 'natural' persons are not entitled to acquire agricultural land and nature conservation areas. One exception is that foreigners may purchase a cottage, which has a separate area of maximum 6,000 m^2 of farmland. The land on which the cottage is built is subject to the regulations applying to non-productive real estate property.

d) Foreign nationals and legal persons are not entitled to lease more than 300 ha of agricultural land, the value of which is more than 6,000 Golden Crown. 'Foreign persons' are considered to include subsidiaries and representative offices of foreign registered companies and non-resident individual entrepreneurs or self-employed persons.

e) In the case where agricultural land or a cottage is to be sold, tenants and partial cultivators have the right of pre-emption**.** The Hungarian State has this right only in the case of the selling of a nature conservation area. On behalf of the State, the competent directorate can claim the pre-emptive rights ahead of other land users (tenants and partial lessors).

g) The confiscation of land ownership is not strictly controlled by the State. According to the Land Law, any contract that does not respect the limits of agricultural land ownership renders the acquisition invalid. Further, any contract concerning agricultural land which does not meet the Land Registry's requirements in terms of the land size, i.e. if the purchased land is bigger than the size allowed by the law, will be rendered invalid by the land registration office.

[6] Under the Land Code a cottage is situated in the sphere of outskirt lands for the purpose of living, households and economic buildings. Accordingly, the cottage and 6ooo sq.m of land surrounding it considered an exception for the restrictions of acquiring land ownership.

Interestingly, the Land Law restricts the size of land obtainable by any one person specified on the ownership title or leasing documents. However, it contains no reference to the upper size limits of a farm. This means that, by law, a private person may own 300 ha of land, as may all of his/her other family members. Thus, a family of four may legally have control over 5,000-10,000 ha. For instance, 1200 hectares would be the maximum legal land ownership for a family of four, but an area of the same size could be leased in and additional land, with no limits, could be obtained as share tenancy or by partial cultivation title.

In the case of 'legal' or 'corporate' ownership, such as cooperatives, incorporated companies and share- holders companies, farm size is determined in a similar way. The law permits cooperatives to lease land from their members or from their shareholders. They are also allowed to lease up to 2,500 ha from people who are not members or shareholders. The maximum period of land leasing is only 10 years, which seems to be too short to promote substantial investment and production for the lessee.

The 1997 Land Registration Act CXLI contains regulations concerning the computerised data processing system of land and property. All new property records are computer processed. The law regulates the protection of legal and natural persons in cases of bona fide acquisition of rights. The new Act harmonises the requirements resulting from the principle of publicity and the protection of personal rights. In the field of property acquisition, the law sustained the basic rule of The Civil Code, which means that to transfer land ownership the property title must be registered in the land registration data. The land registration is the legal institution that assures a constitutional guarantee and security for new landowners and third parties.

2.3 An assessment of legislation related to land holding structure

The authors of the Act on Land (AL), which came into force on 27 July 1994, were aware of the consequences of the fragmentation of plots, which resulted from the partial compensation method of privatisation. Therefore, section IV of the AL, indicating that the order of general land consolidation procedures would be regulated by a separate law to be made later, established the rules of 'procedures directed to forming land plots' (§ 26-35).

At present there is no provision in the law regulating land consolidation in a whole settlement or in a part of it, marked by natural boundaries. The AL includes only regulations concerning voluntary land exchanges aimed at consolidating plots**.** The consolidation is based on the agreement of the landowners concerned, and, at the same time, its success is encouraged by the active cooperation of the authorities. Participants having agreed on land exchange can institute these proceedings at any land office, having jurisdiction over one of the plots to be exchanged. The proceedings affecting the exchange are organised by the land office. It requests that land users and owners write a proposal and prepare the documents relating to the agreements. If required, the office carries out the land survey necessary for the exchange (for a fee), and puts the owners in possession of the exchanged land. The AL regulates the obligation to reimburse the difference in value of the land being exchanged and the value of any movable property and crops and trees that are attached to the land being exchanged. This is an integral part of the agreement between the parties (see articles § 30-31).

Act XLIX of 1999 intends to resolve conflicts caused by cooperative proportional ownership with the following regulations:

- If land funds assigned to settle proportional ownership claims extend to several settlements, the law permits land allocation, in settlements where the plot boundaries are mostly undisputed, up to 80% of the land assigned for this purpose according to the proportional ownership having emerged from the basis of land delivery obligations. The order of entitlements is determined by the due submittal of the owner's application for land, the marking of plots is carried out by the proper county office of agricultural affairs.
- If neither the land fund assigned for the allocation of proportional ownership, nor other land funds are available for the cooperatives to settle claims, proportional owners cannot get their land back. Thus, primarily, those who submitted their applications after the statutory deadline are excluded from getting their land back. However those who submitted their claim within the deadline, are still excluded, for reasons beyond control. Both groups of owners are entitled to compensation from the state instead of getting their land in kind. This amounts to HUF 3,000/Golden Crown. Thus, in the case of average quality arable land of 20 gC[H1], instead of reinstating ownership of 1 ha, the landowner may receive HUF 60 thousand. The assigned office of the Ministry of Agriculture decides upon the compensation each person should receive. People are entitled to seek a legal remedy at court.
- There are detailed regulations covering the issue of increased value of land allocations resolving the amount to be paid to the entitled party and the owner's obligation to honour it. Since land funds necessary for allocation are already unavailable, by law, 'the areas withdrawn from cultivation used by the Cooperative and not affected by asset denomination (abandoned open mines, lakes, watery lands, swamps, and fish ponds etc) are to be utilised in the allocation of proportionally owned lands, but the person entitled thereto cannot be obliged to accept the property.'

An important part of the regulation of proportional ownership is linked to the elimination of land fragmentation as well as to the separate arrangement of the liquidation of common ownership. The concerned co-owners follow the proceedings with the help of the relevant land office according to the location of the land. The initiator of the proceedings prepares a draft related to the allocation in kind including the infrastructure i.e., roads allowing access to the plots.

2.4 An overview of proposed legislation and procedures for land consolidation

Designing a separate act on general land consolidation was inevitable since this task had been predetermined by the Act on Land, Act LV of 1994, which came into force on 27 July 1994. The earliest possible enactment of the act is as important as its content, since without the act it is not very likely that the time-consuming and costly process of land consolidation will begin.

The Ministry of Agriculture and Rural Development (MARD) has already prepared the bill on the general consolidation of land and property in several versions**.** Land consolidation pursues three main objectives:

- Establishing production conditions that conform to the natural potential and cultivation conditions, which could be carried out by grouping the owners' scattered plots and thus, reforming the plots' into shapes that can be more economically cultivated.

- Creating different measures of public interest concerning the marking of plots, especially in the case of environment, nature and soil protection issues as well as the management of water supplies;
- Assuring transportation among agricultural and woodland areas, small and large scale farms and farm centres.

Land consolidation is an administrative and judicial procedure following the above objectives. The owners of the properties concerned and other entitled persons cooperate with the authorities in order to; change the location of the ownership of lands and mark new plots on the outskirts of settlements (or in other areas of it). Land consolidation can only be prescribed concerning land within the same county, but land can extend to the outskirts or areas marked by natural boundaries of several neighbouring consolidated plots. When the legal objectives of the procedure have been fulfilled, land consolidation costs should be available as stipulated in the law. The bill regulates the course of proceedings in three stages:

- Preliminary proceedings aimed at the prescription of land consolidation.
- Preparatory proceedings.
- Closure of land consolidation.

In the preliminary proceedings, the county land office determines the area and Golden Crown value of the properties concerned. If the office finds that the initiative does not originate from an entitled person, or that it obviously does not fulfil the legal requirements, it dismisses the initiative by resolution. The resolution of the land office may be litigated in court in compliance with the general rules of administrative proceedings (Act IV of 1957), which may reverse the resolution.

The land office summons the general assembly of the property owners concerned for a date between 45 and 60 days after the start of the proceedings. A quorum of the general assembly requires the participation of owners possessing more than half of the Golden Crown value of the properties concerned. This rule does not apply to the general assembly summoned again 14 days later, which has a quorum regardless of the ownership ratio of those present. At the general assembly owners have the right to vote in proportion with the Golden Crown value of the property in their possession. The general assembly decides by simple majority whether the owners agree on the initiation of the proceedings of land consolidation. In the case of a positive decision, the land office submits the initiative to the Minister of Agriculture and Rural Development within 60 days of reaching the decision. The minister can make three optional decisions based on the proposal:

- He can return the proposal to the land office for further preparation, if the data available is not sufficient for a decision regarding the merits of the case (Interim action).
- He can dismiss the initiative if the legal conditions for land consolidation do not exist.
- He can decrease land consolidation marking at the same time as the area concerned (land consolidation area.) The operative provisions of this decree are to be published in Magyar Közlöny (The Hungarian Bulletin) and posted for 15 days on the notice board in the mayor's office in the town or village concerned and those concerned should be notified.

The persons concerned may appeal against the minister's decision decreeing or dismissing the initiative within 30 days at the Capital Court, which may change the decree on the consolidation of land and property. If no one claims legal remedy or the court dismisses the appeal, the minister orders the date of the beginning of land consolidation by decree. There is no legal remedy against the latter.

Certain limitations of proprietary rights are linked to the official decision regarding the start date of land consolidation. Applying from the decree effective start date to the completion date of land consolidation.

- Utilisation of the area concerned can only be changed with the preliminary consent of the land office.
- Land office authorisation is needed for building or abolishing buildings, wells, canals and other artificial structures.
- A permit from the soil protection authority is necessary for building, transforming or eliminating soil protection structures.
- A permit from the land office is necessary for planting of vineyards, orchards and other plantations, separate trees and lines of trees. Permission is only granted if the change will have no damaging effect on the utilisation of the total area under land consolidation. The land office and the construction authority may deal with illegal changes, by obliging the owner to restore the original situation. The person concerned may appeal against the decree to the court.

Preparatory proceedings commence when the decree on land consolidation goes into effect. The land office is obliged to summon the general assembly of persons concerned, and to display the list of owners and other persons concerned. The remit of the general assembly includes the acceptance of the assessment of properties and the plan of land consolidation, as well as compensation and division of costs. Another of the general assembly's tasks is to elect the chairman and members of the land consolidation committee who must receive a two-third majority of the votes from those present. In order to allocate land of the same value to the owner during the consolidation process, the land office estimates the assessed value of the owner's original land. This is done by making a comparison with the values of land under consolidation and on the basis of available valid data of land classification. Other experts can also be involved in the assessment. Experts' costs are borne by the state.

Any of the persons concerned may apply for an expert opinion disputing the result of the assessment, but must pay costs in advance. The costs are reimbursed to the applicant only if the appeal is successful, and the assessment is altered. In all cases of land consolidation, the state bears the total costs of the preliminary proceedings and the reinstatement of the property. The person concerned may submit a county court plea against the assessment accepted by the general assembly by claiming infraction of the law, within 30 days of the removal of the notice. Missing this deadline results in a loss of rights. The court decides on the plea in non-litigious proceedings.

The completion of the assessment is followed by the third stage of the proceedings, which completes the process of land consolidation. The first step is the preparation of the land consolidation plan. The land office interviews each landowner, hearing his preferences regarding the location, number and type of plots. The owners' requests are observed and, wherever possible, used in the preparation of the plan. The land office may employ an entrepreneur selected at open tender for the preparation of the plan.

The Bill determines a compulsory succession concerning which owner is to be granted priority in the course of marking the plots, namely:

- Owners of detached farms as opposed to all other owners of neighbouring land
- Owners cultivating their land as opposed to those leasing it out.

- Owners of livestock farms on neighbouring land.
- The local government lands or those to be put in its possession.
- Local owners as opposed to those living in another settlement.

The area of new plots marked during land consolidation cannot be less than one hectare. The boundaries of new plots are to be marked enabling economical cultivation, observing ecological requirements, the interests of neighbouring owners and guaranteeing the accessibility of plots as well as the development of production. The boundaries of newly marked plots are to be indicated in a draft of division.

As part of the compensation, the land office adds up the costs borne by the original owners and reimburses them. The share of refunds is based on the market value of new properties marked during land consolidation. One principle of compensation is that the owner is to be provided with a new property of equivalent value to that of the original, if possible. Owners receiving properties of lesser value are entitled to compensation payable from the land consolidation quota. This involves advance payment of the discrepancy, rather than defrayment, by the state. Owners receiving more valuable properties than the original one are obliged to pay the difference in value. The state grants the debtor the option of an interest free deferred payment for 5 years. According to the approved plan for the division of costs, the owners are to pay the costs of land consolidation as well. The debtor should request confirmation of the maximum 5 years deferred payment.

The Bill relates to the institution of the National Land Fund (NLF) at two points. On one hand, it enables the owner of the plot subject to land consolidation to offer the plot in his possession to the NLF for sale, if he does not wish to utilise it. Properties purchased by the NLF can then be used for land consolidation.

Using the example of the French SAFER as well as the German public utility land associations (*die gemeinnützigen Landgesellschaften*), the legal institution of the National Land Fund (NLF) aims to be a mechanism of general land consolidation. The economic reasoning for its establishment are based on comparison of the advantages and disadvantages of consolidation.

It is expedient to find a solution linking land consolidation to land market mechanism and requirements concerning the state's economy of land supplies. The NLF, through the state re-allocation of land per capita, can assist in developing a reasoned land and property scheme. The NLF is concentrated on the ways that efficiency of size can replace general land consolidation and, compared to the burdens of the latter, create a system, which will benefit farmers, and also be acceptable for society.

The aims of the NLF are to:

- Lease a part of state-owned lands in the framework of the state's economy of Land supplies.
- Launch and intensifying the land market and thus regulating land leasing prices.
- Encourage new farm establishments.
- Group existing plots and improving size-efficiency by joining plots to make larger areas for cultivation.
- Encourage the revitalisation of certain areas (e.g. by purchasing and enhancing deserted vineyards or orchards, and selling them).

- Increase the multifunctional role of arable lands, encouraging the development of the landscape, the region and the infrastructure.
- Provide land reserves for the realisation of special cultivation aims.
- Provide land funds for the exchange of private property under nature protection, in case of expropriation, for compensation by land exchange.
- Utilize poor production capacity regions with different aims, and establishing natural conservation areas of local interest.

2.5 The legal requirements for land consolidation

The Act of the National Land Fund should contain provisions concerning the operation of the Council of Land and Property Policies. The Council would be an advisory body of either the Minister of Agriculture and Rural Development, or of the Directorate of the NLF Public Utility Company, concerning matters of strategic land and property policies, and management of land assets and the sale of lands. The Council would not deal with individual cases.

Members of the Council of Land and Property Policies will be the representatives of the associated Ministries, and protection of interest organisations, as well as seven agricultural experts who are invited to take part. Namely:

The Under-Secretary of Administration, the MARD.
The Under-Secretary of Administration of the Ministry of Finance.
The Under-Secretary of Administration of the Ministry of Environment Protection.
The Under-Secretary of Administration of the Ministry of Economics.
The Deputy Chairman of the Economic Competition Office.
The Secretary-General of the Chamber of Agriculture.
The Secretary-General of the National Association of Agricultural Producers.

Under the provisional guidelines, law would determine the duties and the authority of the Council of Land on the National Land Fund and Property Policies, while the council itself would decide regulations related to organisation and functions. One of the pressing issues would be the conceptual foundation of a national short and medium term plan of general land consolidation. The council will have the plan prepared and scheduled and control its implementation and performance. The national management of land consolidation would be coordinated by the decisions, opinions, and advisory work of the council. The council task would be to ensure land policy, while the Ministry of Agriculture and Rural Development (MARD) will ensure land consolidation.

Successful land consolidation for the purpose of efficient farming depends on efficient allocation of the necessary budgets, and the availability of land assets necessary for land exchanges. In the course of re-arranging plots for consolidation under different titles (purchase, exchange, acceptance of offers, dispossession, etc) the NLF is to evaluate claims in different regions of the country, confirm the amount of land necessary to fulfil these claims and the order of succession in arranging the grouping claims.

The NLF may employ a professional organisation in the national planning of general land consolidation and in the harmonisation of this process with rural development planning at different levels. The NLF would carry out this function under the direction and supervision of the Advisory Council of Landed Property Policies. In order to institutionalise these tasks, it is reasonable that the Act on the National Land Fund should contain separate provisions

regarding the specific and accountable functions of this organisation relating to the planning and preparation for implementation of general land consolidation.

2.6 An assessment of informal consolidation arrangements

An informal leasehold institution has recently emerged in Hungarian agriculture whose legal classification in part reflects the conditions of general land consolidation, as well as the conditions for agricultural subsidies obtainable from the common resources of the EU. This institutional contract is the so-called 'complex land cultivation servicing contract.' The essence of the legal transaction underlying the contract is that successors of large-scale farms and service-providers agree with the landowners, who typically do not have access to machinery or equipment, to perform specific production tasks jointly. These include, preparation of land, purchase of the necessary inputs, mechanised cultivation, and the management of growing technologies. The parties accept this as a contract by which the landowner and the service-providers 'wish to make private use' of arable lands identified by topographical plot number and Golden Crown value. This unofficial contract suggests that the landowner has commissioned a job. In fact, the 'employee' cultivates the land transferred without the legal authorisation of the 'employer' or the landowner. The landowner does not participate in the service provision since the contract stipulates that the employer does work involved in the production cycle, only in order to conceal his independently organized, large-scale land usage.

The employee groups the plots (often tine plots under 0.3 ha) of the different land owning employers into field-size plots and cultivates them in their entirety in accordance with his farming interests. In the course of the process, the employee's special interest is related to three factors. Firstly, he can consolidate his own lands (in case of a non-private person, his rented lands) with lands cultivated under the servicing contract since, the employer cannot practically control which plot is being worked according to the original plan. In this way the employee can gain cultivation benefits associated with necessary crop rotation and cultivation of larger land plots. Secondly, the employee supplies the crops specified in cubic measure and Golden Crown value, thus the subject of the service is not specified individually. Also, the employee can fulfil the contract from either his own crop supply, or by market purchase therefore providing the employer with the specified quantity of crops stipulated in the contract. Alternatively, he can pay the equivalent of the crop's market purchase price. Finally, the employee enjoys the considerable advantage of being able to realise large-scale land concentration without having to pay rent for land usage. The contract satisfies the farming-related interests of both parties.

The advantages and disadvantages of the small-scale producer, acting as an employer are:

Advantages:

- He can obtain a variety of crops, or their value, thus increasing his self-sufficient security.
- He has marketable plants grown on small plots, which, being tiny plots, would not normally enable efficient cultivation using technology.
- The small-scale producer makes a larger profit by renting his land.

Disadvantages:

- The small-scale producer is defenceless against the employer's monopoly. The business conditions are dictated unilaterally by the service-provider.
- The employer takes upon himself all the risks concerning growing plants.

- He is not only obliged to pay the costs of the service in advance, but at the same time he pays the production costs throughout the year, even if there is no yield. In the case of financial difficulties, he loses the whole service provision and incurs punitive penalties.

The service-provider as an employee

Advantages:

- If the employee is a private person, he avoids the 300-ha maximum limit of leased land (AL § 22/1), if it is an association or cooperative, the 2500-ha limit (AL § 22/2).
- The employee can realize a leasehold concentration [SA2]concealed by the contract serving his farming-related aims, which cannot be controlled either by the authorities or the employer.

3 Land administration in Hungary[7]

3.1 Institutional support for the implementation of land tenure policy

In Hungary, the land and property registration system, which has Austrian origins, has been operational for one and a half centuries. In 1972, the land book and the cadastre were integrated under the Ministry of Agriculture. Today, the Department of Lands and Mapping (DLM) of the Ministry of Agriculture and Regional Development (MARD) and its Land Office Network (LON) with the Institute of Geodesy, Cartography and Remote Sensing (FÖMI) serves as the Land Administration. Since the Act on Surveying and Mapping Activities was adopted by Parliament in 1996, DLM MARD has shared responsibility as the National Mapping Agency, focusing on the base mapping at larger scales.

A single institution network, under the supervision of MARD's minister, is responsible for the strategic planning, and operational and developmental activities of land administration and the Mapping Agency. Securing ownership rights, facilitating property transfer and strengthening the mortgage and loan market are high priority objectives.

Tasks to be performed

This network financed by the government and customers' fees performs the following tasks:

Integrated land & property registry and cadastre

- Provision of a publicly available, accessible, resource containing legal and accurate information.
- Registration, in the register, of land and immovable property ownership and transactions, recording legal rights, mortgages, etc., with references including parcel identification. The system is fully computerised.
- Maintenance the land registry's cadastre maps.

Other land related services

- Registration of rented agricultural lands' users (since January 2000).

[7] FAO SEUR Comparative Study – contribution submitted by dr.Gábor Remetey-Fülöpp
Last background document 2530/2000 FVM FTF (30/05/00 dr.Udovecz – dr.Kozma)

- Land use and land protection including operating the Land Protection Fund; collecting land use information through field surveys and inspection, or by using aerial survey/remote sensing and related on-site checking (ground truth). The information is stored on computer.
- Land classification/valuation; (There are no land taxes. The valuation system uses Gold Crown/hectares system, as well as indicating the value in land exchange and is used for assessing compensation).
- Setting up of pilot projects for land preparation for the National Land Fund.
- Provision of land related statistics such as: arable land, orchards, vineyards, grazing land, wetland, forests and fish ponds which totals 78,914 km2, approximately 85% of the total area of the country (93,030 km2).

Reference systems and digital mapping

- Maintenance of the reference systems, projection systems, and complete geodetic network including global positioning systems (GPS)-based supporting land administration.
- Topographical and cadastral survey mapping in the scale range 1:1000 - 1:10 000 (complete coverage in analogue form) and setting-up of databases.
- Developing public services and implementing tailored geographic information systems and land information systems GIS/LIS services.
- Establishing and maintaining multilevel, multipurpose administrative boundary database, and other related services.
- Developing meta-data services as well as facilitating advanced data/product distributions.

Remote sensing application

- Developing and implementing aerospace remote sensing especially in agriculture and environment. This service has been provided by the Institute of Geodesy, Cartography and Remote Sensing (FÖMI) since 1980.
- Participating in the development of the Integrated Administration and Control System in line with the Common Agricultural Policy of the European Union.

Legislation, regulation, knowledge transfer and links

- Developing legislation and technical regulations in harmony with those used in the EU member states (including land consolidation and the National Land Fund).
- Guiding training projects, awareness raising, promotional activities, marketing and public relations.
- Expanding international links, networking on regional European and Global level (e.g. EuroGeographics, European Umbrella Organisation for Geographical Information, United Nations Economic Committee for Europe Working Party of Land Administration, UN Food and Agriculture Organisation Subregional Centre for Central and Eastern Europe, Europe and Central Asia Initiative, International Association for Geodesy, International Federation of Surveyors (FIG), International Society for Photogrammetry and Remote Sensing, International Cartographic Association, European Association of Remote Sensing Laboratories, Global Spatial Data Infrastructure etc.

In order to ensure a clear land and property registration system as well as strengthening protection of property rights, the land registry has been computerised through enormous support and assistance from the European Commission through the Phare programme since 1991. In 1998 in frame of the governmental action entitled “National Programme Adopting the Acquis Communautaire” (NPAA) a separate subchapter under the chapter Agriculture

was devoted to the subject "Lands and remote sensing" listing the institution development tasks. These tasks are related to the Common Agriculture Policy Integrated Administrative and Control System including the establishment of the Land Parcel Identification and Information System, the Remote sensing supported control of area-based subsidies and the provision of digital cadastral maps and orthophotos for the rural areas.

3.2 Structure of the Land Administration

The institutional network for land administration includes 19 Country Land Offices and the Capital Land Office, as well as 115 District Land Offices and the Budapest District Land Office, altogether providing 136 regional and local, data shops servicing citizens, local, regional and central governments and agencies, lawyers, notaries and courts as well as clients from the private sector.

The organisational structure of DLM MARD includes three departments dealing with land registration, surveying and informatics as well as land use and land protection.

FÖMI, the network's research and development institute, performs certain tasks such as quality control and public services (metadata and browse room services, archive data, product delivery), as well as providing consultancy and value added services to the public, governmental agencies, NGOs, private companies and data brokers.

The District Land Offices provide maintenance and updating of the land and property registry, holding property sheets, legal documents and land registry maps. Since 2000 a second registry containing information about land users has been set up. This land use registry is fully compatible with the land registry. The County Land Office (CLO)manages, supervises and controls the activities of all the DLOs located in the county. The first level of processing applications is the DLO level. The CLO provides the second level in case of claims or discrepancies. The third level in the claim clarification is the DLM of MARD.

In a Land Office there are usually four departments:

- The Department of Land Registration, which deals with the applications as well as with, all activities related to land and property registry.
- The Surveying Department maintains and updates the land registry map (often called the cadastral map), by field measurements, and reallocation of parcels etc. It evaluates and signs survey documents submitted by licensed surveyors and companies if these affect the land registry map.
- The Department of Land Protection, land valuation and land use is responsible for classified cases, and issues permission for land use change. In some cases, fees are paid to the Land Protection Fund. The Department controls the permitted use of land by field check.
- The Client Service and Data/Document Delivery Department is responsible for application processing. The delivery of property sheets is fully computerised.

Information technology infrastructure building at the Land Administration

The District Land Offices and a few other institutions are equipped with the integrated system TAKAROS (a Hungarian acronym for countrywide map-based digital cadastre) and interconnected to the county Land Offices via the wide area Intranet/Extranet file and document transfer service called TAKARNET (TAKAROS Network). The registry of land users called FÖNYIR has been operational Since January 2000. Maintenance is provided by the District Land Offices. Value added service capability is envisaged for the regional Land

Offices when the implementation of the EU supported META project (the country-level version of TAKAROS) will be realised. The available IT infrastructure at the Land Offices helps DLM MARD and FÖMI to operate the institution as required by the EU Integrated Administration and Control System (IACS) and Agro-Environmental Measures (AEMs). The concept of the Land Information Service of Agriculture and Rural Development (LISARD) project emphasises that the central operational service of three major, integrated components, the area-based Subsidy Control with Remote Sensing (CwRS), the Centralised infrastructure (CENT) and the agricultural Land Parcel Identification and Information System (MePAR) should be hosted by FÖMI. This development is based on the results of the Phare aided Computerisation of the Land Offices (TAKAROS, TAKARNET and the ongoing META) as well as two decades of experiences of the FÖMI Remote Sensing Centre with special emphasis on the related products and services ie. CORINE Land Cover Database (CLC), the operational, nation-wide Crop Monitoring and Yield Estimation (CROPMON), and the newly annually applied area-based Subsidy Control by Remote Sensing.

From TAKAROS to META: Phare-aided Computerisation of the Land Offices[8]

Following the agreement signed in 1990 between the EU and the Hungarian Government, the EU PHARE supported programme, computerisation of land offices has begun to establish the infrastructure for this complex process. Besides the technological development, legal, operational, marketing and other related problems are dealt with within this programme.

DLM MARD aims to create a decentralised nation-wide Land Information Service system with electronic access to records both at county and district levels, to create a service-oriented land management that fulfils EU requirements. The advantage of this programme is that all major land management tasks are addressed by one institutional network – including land offices, DLM and FÖMI –providing a completely integrated Land Information Service.

The main stages of the implementation are as follows:

- Complex Decentralised Property Sheet Registration System (CDPRS): computerised property sheet databases in the District Land Offices (completed in 1994).
- Computerisation of the Capital District Land Office System (1997-98).
- Mapping System for the Capital District Land Office (1997).
- Upgrading the District Land Office System (TAKAROS DLO): computerisation of the Land Office procedures (1995-98).
- Wide Area Network for the land offices (TAKARNET): remote access to Land Office data (1997-98).
- Computerisation of the County Land Offices (META - TAKAROS CLO): GIS products, new services support for EU harmonisation (1999-2002). All the property sheets (The Land Register) of the country were loaded into PC based computer systems in the District Land Offices by the end of 1997. This speeds up management and the updating processes as well as potentially making on-line land office information available for access by clients, banks, lawyers, public notaries and other interested parties. Information can be accessed electronically from remote sites by connecting all of the land offices in a Wide Area Network (WAN). In a series of IT infrastructure projects, establishing this network provides both internal and external communication links.

The introduction of the TAKAROS/TAKARNET systems allows the land offices to become proactive suppliers of structured spatial information. The County Land Offices are to

[8] Summarised by P.Zalaba

be developed as regional centres for this information, developing marketing skills, product development, project management, and the definition of goods and services to be supplied.

Land Administration and the spatial data infrastructure

The land and mapping data, as well as the results of research and technology development at FÖMI, supported by the EU Phare Programme and the National Committee for Technological Development enables the establishment of the basis of National Spatial Data Infrastructure (NSDI) in Hungary. Following the development of the National Strategy on Informatics of NGO experts and the approval of the Strategy of Governmental Informatics by the Inter-Governmental Committee on Informatics, on 15 October 1997, a governmental commission confirmed the following priorities:

- National Cadastral Programme
- Harmonised address registry
- National Topographic Programme
- Administrative boundary database
- Metadata service and clearing house
- Multipurpose parcel-based information system
- Aerial survey as imagery basis of the NSDI

The Scientific Committee on Geodesy of the Hungarian Academy of Sciences has accepted the action subcommittee plan on GIS with the objective of supporting the development of the National Spatial Data Infrastructure.

3.3 Capacity building for Land Administration

Universities such as the Budapest University of Technology and Economics, the Eötvös Loránd University of Sciences (ELTE) as well as the University of West-Hungary College on Geo-informatics (UWH) are involved in the education and vocational training of 4,600 employees of the institutional network. These courses have been developed using EU support from Phare, Tempus, or Copernicus. Those considered relevant tools for human capacity development supporting the implementation of governmental policies are as follows:

Open Learning for Land Offices in Hungary -OLLO

Funded by the EU, and managed by UWH the project offers modular distance education in Land Administration with special emphasis on the ongoing Phare projects.

Staff Development in Land Administration - SDILA

The SDILA project financed by the European Union Tempus, aims to establish a new programme of educational and training courses designed for land administration staff. UWH CSLM is a potential principal centre of excellence for staff development in land administration, and provides a viable developed educational programme, a developed system of delivery, and strengthens the working links with EU educational providers and professionals in land administration. The SDILA project will develop several short courses and a management course in land administration and retrain 120 land administrators, 60 technicians and will enlarge the existing tutoring network. Recently, this pan-European project's PANEL-GI Compendium has been translated for use in the management level course. Target groups include civil servants in administrative positions, technicians and managers at land administration institutions, local, regional and central governments, as well as public notaries, bank officers, lawyers, and private surveyors.

Land Information Management for Executives - LIME

The project intends to have a multiplying effect on existing material and methodology developed in previous projects, as well as the utilisation, further development and improvement of OLLO (Open Learning for Land Organisation) and UNIPHORM learning systems. The anticipated result will be the widespread and flexible use of Open Learning Training course material, instigating the new profession of assistant in land information management. The target groups for the 500 hours - 18 weeks distance learning programme are high school graduates in land offices, local governments, regional development offices, ministries, banks, insurance companies, lawyer's assistants and other professionals and service providers. The course's optional subject 'Rural development and land consolidation' is coordinated by the Ministry's Department of Lands and Mapping as well the Department of Rural Development programme

The topics include:

- A retrospective look at the historical changes in land ownership structures
- Conceptual definitions.
- Legislation background.
- The importance of land consolidation in recent situations.
- Land exchange and complex land consolidation procedures – a necessity for sustainable rural development.
- The institutions required for land consolidation and administration.
- The objectives and achievements of the Hungarian-German bilateral pilot project on 'Computer-aided land consolidation' (TAMA). The textbook is already available and the course has been started.

3.4 Land Administration and the land tenure policy

In the 1990s, the great challenge for the integrated land registry and cadastre was the coordination of a national land privatisation impacting on more than 50 percent of the total area of the country, creating approximately 2.5 million new properties, and through a process involving compensation and privatisation affecting some 20 percent of the population. Only a small number of the new owners were actually able and willing to rely on agriculture as their main occupation. In 1991 the agricultural census registered 1.4 million farmers, with an average plot size of around 0.5 ha. Obviously, the breakdown according to user types changed drastically. At the same time, the breakdown of ownership to capital in agriculture has been totally changed as well. The privatisation has almost been completed. In 2000, the agricultural census registered 960,000 farmers while the average plot size had increased to 2.75 ha.

Agricultural land - ownership structure (%) in 2000	
State-owned	17.5
Production co-operatives	1.5
Company and other Economic societies	6.1
Natural person[9]	73.5
Others[10]	1.4

[9] 14.6% farming in co-operative
[10] e.g. local governments

Agricultural land - user structure (%)		
Year	1990	2000
State		14.5
Production co-operatives	55	15,3
Company and other Economic society	31[11]	15,2
Private, single user	14	50
Natural person		
Others		5

Ownership capital structure in agriculture (%)		
Year	1992	1998
State-owned	52	12
Private ownership-Share of non-domestic	1	8
Owned by natural persons (Domestic)	31	61
Ownership of co-operatives	16	8
Owned by domestic legal Entities		11

In 1999, 88 percent land of ownership was dominated by private property, with 10 percent of lands being rented from the state and 2 percent owned by non-single private entities. During the 1990s, the ownership and use of lands changed significantly, parcels have become fragmented and dispersed in shape, and the average field size does not support viable and sustainable family farming. For these reasons it was necessary to find appropriate solutions to encourage the potential benefits of competitive family farming.

The TAMA project

In 1993, a GIS-based land consolidation methodology was investigated in pilot areas using German expertise in a bilateral governmental framework project called TAMA. Altogether 16 villages in 4 counties were selected to start the adoption of the proven land consolidation methodology (supported by GIS) as used in the Federal Republic of Germany during the last 50 years. The German Federal Ministry for Agriculture has selected the Kiel-based BfB consulting company subcontracted by GFA and financed within the framework of TRANSFORM. In 1998, the "3 Brooks" microregions were invited to the project in order to implement the methodology also taking into account the aspects of village renewal and integrated rural development. In the TAMA-2 phase, two additional small regions with 15,000 ha have been selected in close co-operation with MARD based on the feasibility and overall evaluation of the newcomer's commitments and other relevant conditions. As illustrated in the Nagynyárád case, the impact of land-related compensation and other land privatisation resulted in plots of inadequate size and shape, as well as overly fragmented distribution of plots belonging to one single ownership, failing to support viable family farming and competitiveness. It was clear that the introduction of a well-established land consolidation procedure and the institution of The National Land Fund could significantly contribute to a better quality of life in the rural areas. The proven methods used in Germany appear to be an ideal implementation of land consolidation as an integrated factor of rural

[11] inc. State farms

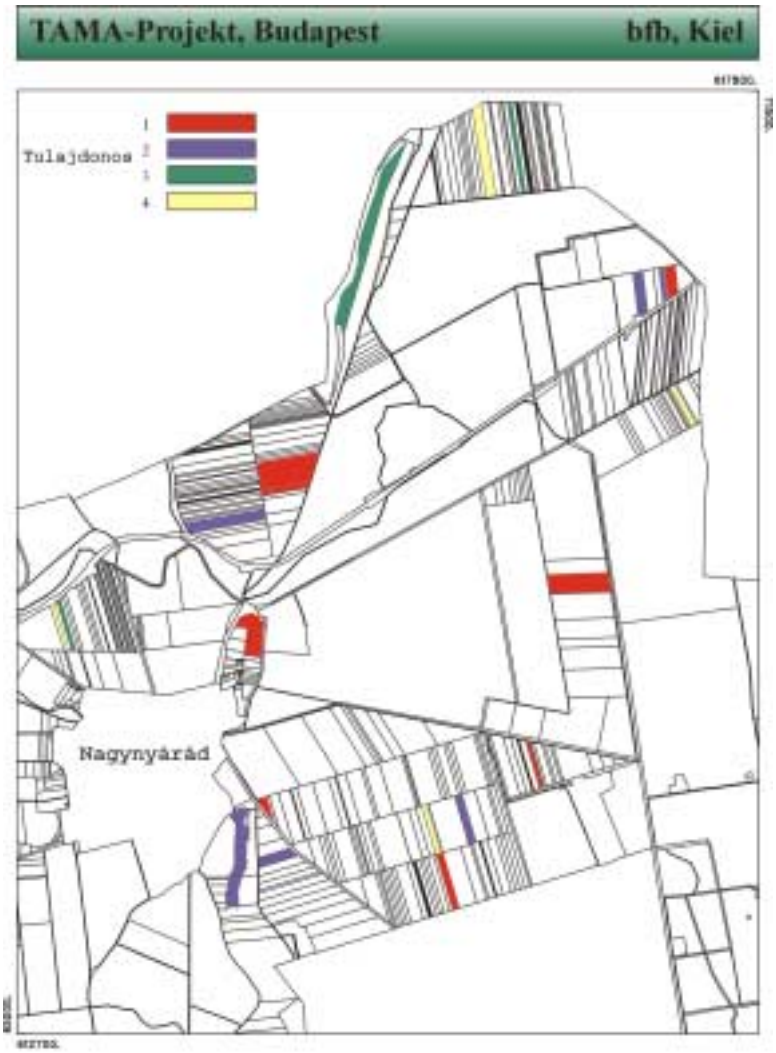
areas development, taking into account the agricultural-environmental measures obligatory in the EU member states as well as supporting project initiatives in the SAPARD framework.

In fact, the new legislation on land consolidation was formulated on the project's experience. It is expected that the new legislation on land consolidation and the institution of National Land Fund will both serve as facilitators to establish a real land market as well as support viable agriculture and sustainable integrated rural development.

The average size of a parcel owned by a private natural person is less than 3 ha. Ninety percent of the single owners cultivate less than 5 ha, which is not viable for a family relying mainly on farming. In order to improve quality of life in rural areas and to promote land consolidation to ensure more competitive farming, 7year long methodological pilot projects have been executed.

Title: Sample parcel pattern of a average Hungarian village named Nagznyarad.

(Note the strange shape and small size of the parcels in selected physical blocks. Color code shows different owners and the fragmented distribution of parcels belonging to her/him.)



Példa azonos tulajdonban levő termőföldek szétszórtságára

Pilot areas selected for the TAMA Computer-aided land consolidation project

The benefits of the project are; a well-prepared legislation, gradually improving multi-agency co-operation, trained and skilled personnel at the Land Offices and FÖMI, curricula for distance learning courses (LIME) as well as valuable local data sets collected for the small region's workshop. It is anticipated that the results of the small region land consolidation pilot project can serve to get the remaining 200 small regions to adopt the approach and learn from the lessons. The experience is important for the implementation of the National SAPARD Plan until 2006.

As a follow-up, draft laws to formulate Land Tenure Policy for Parliament approval have to be drawn up, and the experience of the pilot projects can be directly used for this. Education, training and raising awareness are vital points. The institutional, technological, financial and organisational aspects have to be clarified and the requirements have to be met.

The data used in the project was supplied by the computerised District Land Office Land Registry, providing information on land owner and properties information and related legal circumstances from the relevant registry, using its large scale map sheets, topographic maps at a scale of 1:100k and 1:10k, aerial photographs (optional) and high resolution satellite imagery (so far SPOT, IRS). Land Offices are accessible using the TAKARNET wide area intranet/extranet network.

The institutional framework was established at the beginning of the project. Additional activities relating to raising local awareness and training Land Office staff members were carried out. The full organisational procedure of land consolidation was formulated in carefully selected areas. All of the participating Land Offices have been equipped with GIS workstations and extensive data has been collected. Open days, road shows, inter-agency consultations; video editing, television broadcast and 'one stop shops' were set up. The UNECE/ MOLA land policy workshop took place in Budapest in December 1999, in which TAMA and the Hungarian expert community participated. The project's closing international workshop, under the auspices of MARD, was attended by staff of the Embassy of the Federal Republic of Germany, the UN/FAO Budapest sub regional office, the World Bank regional representative and experts from CEE and EEA regions. The results of TAMA and the relevant presentations are available on a CD.

The project was extended to late 2000, in order to pave the way for the implementation of a pilot integrated rural development program in three small-region areas in Somogy, Baranya and Veszprém counties. The objective of the project, called TAMA-2, was to support local rural development workshop activities by methodological consultancy, GIS based land consolidation, and preparation of the consolidation procedures. The project closed on December 11 with an international seminar on the topics of land consolidation and land fund and rural development organised by TAMA and hosted by the Ministry of Agriculture and Regional Development. All of the presentations are available on a CD from FÖMI. Detailed information of the project objectives, and experience of the introduction of land consolidation procedures now completed in County Barany, as well as comments on future legislation and the task sharing in a multi-agency environment of integrated rural development and land administration have been summarised, and will be available in the second quarter of 2002.

Experiences in a small region from the Land Office perspective[12]

A good co-operation between TAMA staff members, CLO/DLO employees and the 3 Brooks microregion was experienced. Work with the TAMA project team started in late 1996 involving 42 settlements however, it was soon realised, that efforts should be concentrated on a smaller area in which the major activities were agricultural.

The 6 villages selected have a total area of 6,134 ha. Private ownership accounts for over 92 percent of land, state-owned lands approximate 7 percent while local government owns less than 1 percent. 70 percent of the area is given over to crops. The motivating factors for voluntary land exchange were as follows:

- Too many properties belonging to one single owner.
- Combining the fragmented parcels creating one single cultivatable area, preferably in the owner's home village.
- To gather together the fragmented parcels owned by family members creating a single larger one, preferably in the same family village. To create parcels which exceed the eligibile size requirement of agricultural area-based subsidies.
- To raise the value of the owned land after the exchange.

In September 1999, the District Land Office coordinated an open day road show to encourage landowners to engage in parcel exchange.

All relevant data and related documents were brought to the workshop in Dabrony for two days in order to survey the needs of local owners and interested parties. Several village assembly meetings were arranged, followed by personal consultations. The average number of volunteers was ranged between 2 and 20. The table below provides information about the pilot project of voluntary based land-transactions in 6 villages.

Voluntary based land exchanges in the 3 Brooks Small Region

Village	*No.of parcels affected*	*Ownership ratio affected***	*Area affected by exchange needs in hectares (rounded)*	*Land value of the areas to be exchanged in Gold Crown*
Dabrony	15	31	57 40%	835
Iszkáz	20	36	32 22%	513
Nagyalásony	10	20	22 16%	338
Kisszőlős	2	10	9 6%	112
Somlóvecse	8	15	17 12%	215
Vid	6	10	6 4%	103

Note: the village populations vary from 100 to 500.
** percentage in the total number of owners in the village

The preliminary procedure of land consolidation has been completed. Digital cadastral maps for all the villages of the 3 Brooks small region have been completed. A simplified content of the microregion's land registry dataset was delivered to the village workshop site, where DLO staff members and appropriate hw/sw infrastructure was available to facilitate the visual inspection and discussion of the relevant cadastral data.

[12] Based on the report provided by the Ajka District Land Office

Unfortunately, this pilot project revealed that voluntary based land exchange is not a feasible solution to the problems of land fragmentation, especially in the complex environment of integrated rural development. The procedure is time consuming and requires in-depth investigations based on a series of meetings to analyse needs, ideas, requests and expectations in order to understand the conditions and start the planning phase. All these factors require frequent consultation with, and feedback from, the local population and landowners. The merit of the draft law on land consolidation is that it does not require a full consensus or total voluntary based exchange. When in force, the Act will facilitate the consolidation procedure significantly. However, in spite of using the National Land Fund, it is anticipated that this legislation alone will not result dramatic change in the land market, because of the lack of the motivation of owners partly due to the expected raise of market price in the time of the EU accession. Thus, awareness raising and measures influencing the motivation seems to be a continuous task.

3.5 New regulations and outlook of land consolidation administration

Land consolidation is considered a very important issue in the National Development Scheme. The National Land Fund acts as a vehicle to facilitate and support the implementation of agricultural land tenure policy, through selling, buying, leasing and exchanging lands.

The major elements of land tenure policy include:

- The intention to complete the privatisation of agricultural lands as soon as possible.
- The intention to facilitate the gathering of the fragmented parcels by supporting voluntary exchange of lands, or the buying of lands for merging purpose using the present agricultural subsidies framework.
- The adoption of the draft law on Land Consolidation by Parliament as soon as possible.
- The adoption of the draft law on National Land Fund.

It is expected that such tools as the new legislation for land consolidation, which regulates the share of costs among interested parties, including state provided long-term low interest credit rates, and the establishment of the National Land Fund (based on state-owned areas) will ensure the following:

- A more adequate parcel size, as required for viable and competitive family farming contributing to sustainable agriculture and rural development.
- The strengthening of the land market in general and provision of a stable market, based on reasonable transaction prices. (At the moment the average market price is about 150, 000 HUF/ha).
- Promotion of the State's intent to change land use patterns especially in areas endangered by frequent floods or soil erosion.

The two-year budget adopted by Parliament in 2000 provides financial resources for the implementation of the land tenure policy programme with the expectation that draft laws will be adopted in 2001.

3.6 EU regulations

Some of the EU regulations affect the Land Administration closely. The current projects of the administration are linked to institutional and infrastructure development to facilitate the

requested services as required by CAP IACS and other related measures. Within CAP, there are a number of specific state regulations that have to be implemented due to unforeseen land related domestic issues. This is also the case in Hungary; hence, legal and technical assistance provided by the European Institutions to enable these regulations to be drawn up or constructed, may be required. Special emphasis is given here to the related land tenure policy and its implementation tools such as, land consolidation, land fund, and the related public registries and land use.

Land Administration is affected by the following 'vertical EU topics': agricultural-environmental (AE) matrix, soil quality, soil erosion, land cover, land use, landscape, land conservation, and biodiversity. AE regulations, which are mandatory for the member states include (EC) 2080/92, especially 2078/92, 1257/99 and 1750/99 on support for rural development, in which AE measures are compulsory. The planned cadastre-based agricultural parcel identification and information system (PARCELLA) and the already operational remote sensing system for area-based subsidy control (CABS), will also be useful for AE measures with environmentally-beneficial objectives, productive farming, and management of non-productive lands.

The land parcel identification system (LPIS) and the remote sensing control (CwRS), are key elements for area-based subsidy control, as an integrated part of CAP IACS. The recent 1593/00 regulation explicitly states that "provision should be made for the introduction of computerised GIS techniques for the identification of agricultural parcels". It reaffirms the increased value of the data, products and service provided by the Land Administration segment (including the remote sensing centre), implementing the EU-conform agricultural policy and support for agro-environmental measures in a multi-agency environment.

3.7 International Relations as a Facilitating Tool

The implementation of the land tenure policy is not only supported by developments in the legislation environment and service improvements in the countrywide public administration of Land Offices, complying with the relevant e-Europe concept of extensive use of information technology, but also by the experiences gained from the wide range of international professional relations built-up systematically since the early 90's. These include:

- Hungary's presence in CERCO since 1992 and in MEGRIN since 1994, since January 2001 these have been absorbed into Euro-Geographics. The Land Administration represents the large scale mapping section.
- Bilateral co-operation with the German Federal Ministry of Agriculture, Forestry and Food Supply, in the computer aided land consolidation programme known as TAMA. Financially supported by TRANSFORM this began in 1993 and has just been completed.
- The expertise and consultancy forum of the UN European Commission for Economy's task force on Cadastre lead by *Professor Peter Dale.* The Meetings of Officers of Land Administration (MOLA), co founded by Hungary in Geneva in 1995 and later the thematic workshops of the Working Party of Land Administrations (WPLA), which validated the Hungarian approach presented in expert discussions
- Hungary's cooperation in the work of EUROGI since 1995. EUROGI is the European Umbrella Organisation for Geographic Information. It has more than 20 national and pan-European GI association members and represents over 3000 separate organisations in 20 different countries. Its mission is to maximise the effective use of geographic

information for the benefit of the citizen, promote good governance and commerce in Europe and represent the views of the geographic information community in discussions with the European Union and other bodies.

- The European Commission funded ACE project lead by *Dr .Richard Baldwin,* concerning the development of land markets in Central and Eastern Europe[13], which highlighted and summarised the developments in Latvia, Poland, Czech Republic, Slovak Republic, Slovenia and Hungary in terms of the legal position, institutional and economic matters, technical aspects, and transitional experience.
- Exchanges of views and discussions on methodologies, production of national reports and other official documents of the EUROSTAT Working Group meetings on land use and cover, led by *Rainer Muthman,* and held in Luxembourg. Representatives of the Hungarian Central Statistical Office and the Department of Lands and Mapping of the Ministry of Agriculture and Regional Development have been invited participants since 1998.
- The cross-fertilisation of ideas with representatives of the approaches of 'remote countries', such as Canada, and Australia, at the thematic Bertinoro Seminars on Land Tenure and Knowledge Transfer, arranged by FAO Headquarters in 1988 and 2000 respectively.
- The emerging professional links with FAO/SEUR, Budapest and active involvement in joint meetings, open days and workshops with international participation (Proceedings of these latter events are available on a CD-ROM). Also the Comparative Study on Land Consolidation, which addressed the effects of both international and domestic networking and cooperation.

Recent activities and plans for the future include:

- The submission of FAO TCP proposals on the pilot project devoted to the methodological development of land consolidation within the new legal environment, using the new tools and institutions as instruments for change of land use, especially in areas endangered by flood, log water or soil erosion.
- Dutch and German collaborations, including bilateral pre-accession proposals with special emphasis on ways to contribute to best practice in integrated rural development, during and after SAPARD, as well as finding efficient organisational solutions for land management.
- Exploring possible scenarios concerning the realisation the institutional set up of the Europe and Central Asia Initiative on Property Rights, acting as a regional anchor in Budapest for the EU candidate and Balkan countries.
- Organising and hosting the first EU Workshop on the use of cadastre as part of the spatial data infrastructure, supporting the implementation of agri-environmental policies, held between June 7-9, 2001, in Budapest.
- Took part on the UNECE WPLA Workshop, devoted to 'EU Accession from a Land Administration Perspective' held in in Gavle, Sweden between13-15 June, 2001. Topics include the examination of the present situation regarding basic legislation, the extent of privatisation and registration, and the organisations involved, emphasising the issues related to Land Administration and the institution's issues part in the EU negotiations.

[13] With special emphasis on its major components (selected by R.B):

- **The regulating institutions** (land register, the cadastre, valuation & financial institutions)
- **The players** (land owners and tenants),
- **The goods and services** (land and its usage)

The financial instruments (mortgages, credit, capital, revenue generation, tax raising capability).

4 Dominant Characteristics of Contemporary Hungarian Agriculture

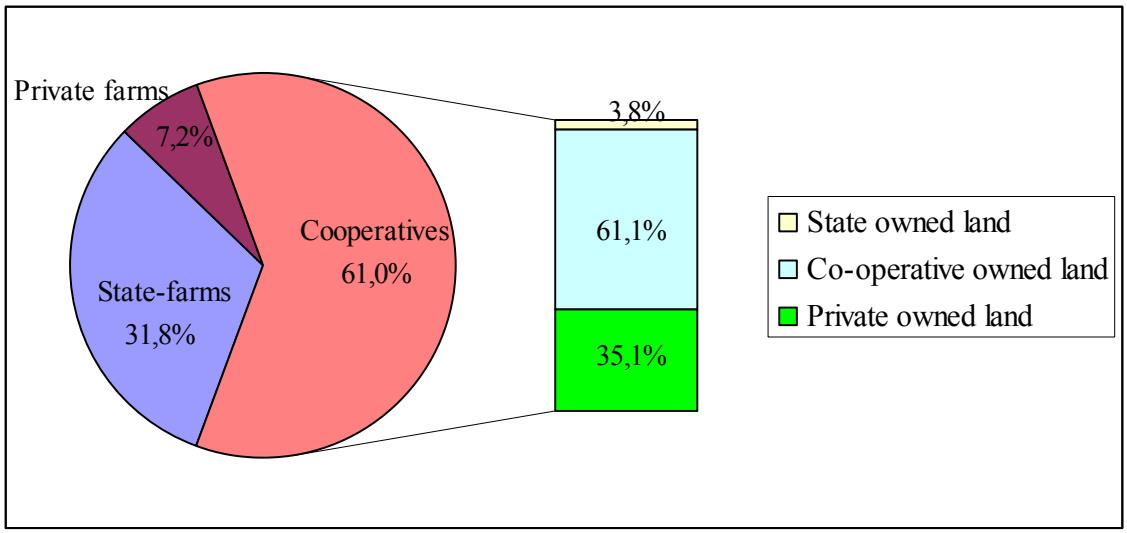
4.1 Agrarian Structure

Before the transformation 32 percent of the land in Hungary was cultivated by state farms, 61 percent by cooperatives and 7 percent as part leased, part privately owned land by part time small-scale producers (Figure 1). Apart from the small percent of privately owned land of small-scale producers, 35 percent of the jointly cultivated land belonged to cooperative members. Thus, there co-existed a mix of state, cooperative and private ownership in the variety of farming forms which operated mainly under large-scale land utilisation,

Since the transformation in the early 1990s, the land and property ownership structure has changed in the following ways:

- the group of those entitled to land ownership enlarged significantly, irrespective of whether they were involved in agriculture, or whether they wished to pursue agricultural production on the land transferred to them. The ownership of a significant part of the land has been transferred to a large number of owners having either indirect connections to agricultural production or no connection at all.
- There exists a mismatch between owners of land and owners of physical capital. That is, owner of the land and the owner of the non-land assets necessary for cultivation have become separated. Some of the new owners hold land and no assets of production, while others do not have enough land to efficiently use the means of production that they acquired in the since the early 1990s.
- Whilst the transformation promoted the dominance of private land ownership similar to the practice of the European Union it also resulted in a more fragmented farm structure than any land reform, also accompanied, for the first time, by the separation of land ownership and land usage. These phenomena apart from causing technological and economic anomalies, hinder permanent and long-term agricultural dynamism.

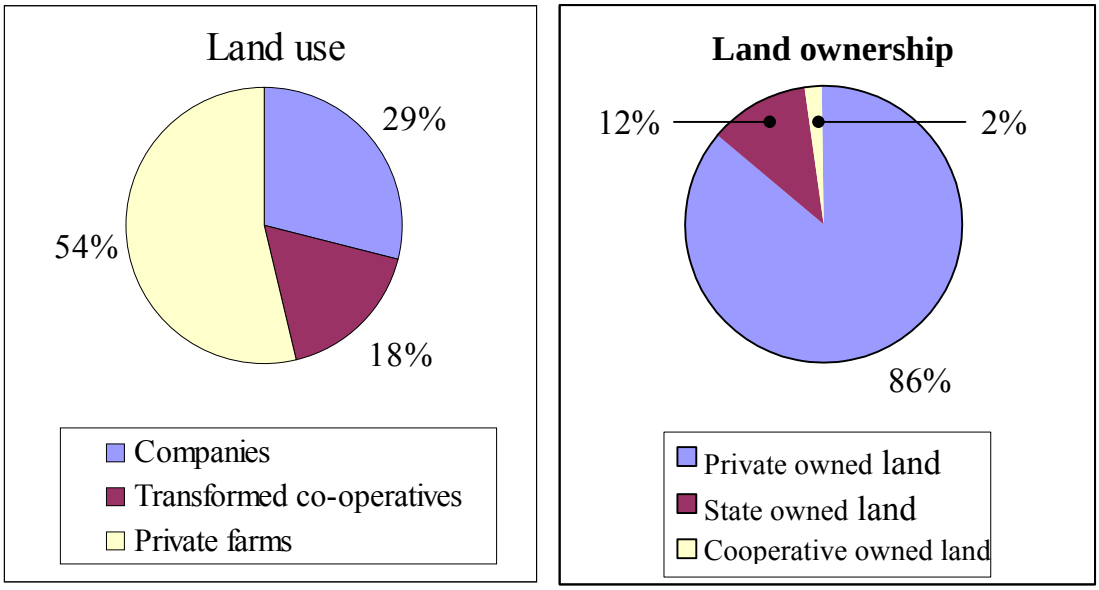
Figure 1:Land use and land ownership structure in Hungary, 1989



Due to the changes, approximately 86 percent of land became privately owned. Twelve percent of the land remained the property of economic organisations, such as permanently

state-owned organisations, nature protection territories, and national parks, while the balance of territories belonging to transformed cooperatives can be estimated at 2 percent (Figure 2.). Due to delays and other administrative and procedural problems related to land ownership and land registration, these ownership ratios are extracted from different sources yet produce the same results.[14]

Figure 2: Land use and land ownership structure in Hungary, 1998



After the transformation of land ownership structure, there are 1,2 million landowners, 96 percent of them with a land holding of less than five ha, including one million with less than one ha. The estimate of those owning an area of 100-300 ha can only be a few hundred. For the majority of owners, their land would not provide a secure living, even if they wanted, or were able, to farm. Therefore, their solution is to lease their land or combine with others to cultivate jointly. The shift towards private farming is explained by the fact that the intentional dissolution of cooperative farming, due to the lack of other work opportunities and livelihoods, forces more and more owners to cultivate their lands which, in most cases, can only meet basic needs. Farms belonging to this category also help to alleviate the negative effects of unemployment and social tensions as well. Therefore, their future survival is of vital importance both socially and individually.

According to the 1994 register of the Central Statistical Office, of 1675 thousand households pursuing agricultural activity 1201 thousand (72 percent) reached estate-size[15]. The fragmentation of the lands used by private farms is well demonstrated by the data in Table 1.

[14]Tóth E.-Varga Gy.: The Situation and Destiny of Farmers' Cooperatives During the Transformation, AKII 1995.
Tóth E.-Varga Gy The Life of Agricultural Cooperatives after the Transformation, AKII 1996.
Tóth E.: Economic Characteristics of Transformed Agricultural Co-operatives (1989-1998) AKII. 2000. (Forthcoming)
Ady I.-Dorgai L.-Szijjártó A.-Tóth E.: Lending on Mortgage from the Viewpoint of Agriculture, AKII 1997.

[15] According to the prevailing regulations of statistical data collection, a household is estate-size if its agricultural territory at least 1500 m², a plantation of at least 800 m² and livestock corresponding to one animal unit.

The structure of individual farms in Hungary, 1994

Farm size (hectares)	*Individual farms*		*Total land area*		*Average farm size, ha*
	Number	Percent	Hectares.	Percent	
1 or less	978,101	81.4	231,665	16.8	0.2
1.1-5.0	173,182	14.5	378,912	27.4	2.2
5.1-10.0	28,723	2.4	198,303	14.3	6.9
10.1-50.0	18,922	1.6	359,588	26.0	19.0
50,1 +	2,087	0.1	214,737	15.5	102.9
Total	1,201,015	100.0	1,382,205	100.0	1.2

Source: Development of food production and processing industry, CSO, 1995.

Around, eighty one percent of private farms used land of less than one hectare in 1994, while their land share of the total was merely 16.8 percent. The average farm size in this category was only 0.2 hectares, only slightly larger than the lower threshold of estate-sized households. Sixteen percent of private farmers were cultivating land of between 1.1 and 10.0 hectares, which totalled 41.7 percent of the private land farms. The average size of the farms in the two categories is 2.9 hectares, which shows the predominance of production units under 5 ha. 1.7 percent of the farms have land size bigger than 10 hectares and within them the ratio of farmers cultivating land bigger than 50 hectares is a mere 0.1 percent with a share of 15.5 percent. The average land of private farms was 1.1 hectares in 1994, as opposed to 0.5 hectares in 1991. The extent of fragmentation, despite the increase in average farm size, is disturbing considering that the average farm size in EU member states was 17.5 ha in 1995. Even in Greece, Italy and Portugal, all characterised by the predominance of small farms, the average farm size is 4-8 times bigger than in Hungary. Table 2 illustrates the characteristics and contradictions of land utilisation, from a different point of view. The measurement categories of land utilisation separated according to cultivation sectors warn of the formation and existence of 'bipolar' farming.

It is easy to see that farming organisations are dominated by the presence of large production units (above 300 ha), while the share of the other two farm categories, except for the vine-fruit cultivation sector, is basically negligible. In the case of private farmers, the reverse is observed. This form is characterised by a 74-75 percent dominance of farms under 30 hectares.

The structure of lands by different types of farms according to size

Name	**The share of**			**The share of**		
	Large	*Medium*	*Small*	*Large*	*Medium*	*Small*
	Sized farms, %					
	Economic associations			*Private farms*		
1995.						
Plough-lands	95.6	4.3	0.1	2.0	23.8	74.2
Vineyards & orchards	76.1	22.2	1.7	0.6	4.4	95.0
Grasslands	97.8	2.1	0.1	4.6	21.4	74.0
Agricultural areas	95.7	4.2	0.1	2.3	21.9	75.8
Forests	98.9	1.0	0.1	0.7	8.2	91.1
Arable lands	96.6	3.3	0.1	2.2	20.5	77.3

1997.						
Plough-lands	96.9	2.3	0.8	2.0	24.6	73.4
Vineyards, orchards	73.3	22.4	4.3	0.4	10.2	89.4
Grasslands	98.1	1.6	0.3	5.2	25.0	69.8
Agricultural areas	96.8	2.5	0.7	2.4	23.7	73.9
Forests	97.7	2.0	0.3	1.3	17.8	80.9
Arable land	97.1	2.4	0.5	2.3	23.2	74.5

Source: Corresponding volumes of the Agricultural Statistical Notebook, CSO

Among private farms, medium-sized farms represent 20-25 percent of the total, which indicates farms competency in commodity production and development. However, it is not clear to what extent the data reflects reality since land ratios are mainly based on estimates.

Small farmers who have the desire to cultivate and land that can be cultivated have a similar objective: to produce for the market and to enter the competitive sector. When designing forms of subsidy for these small farms the factor to be realistically considered is whether indeed they have a chance to cultivate and survive in a competitive environment. If the answer is positive, small farms should be supported by the provision of land and other resources such as equipment. Today, resources in Hungary are either not available, or specifically limited to maintaining and sustaining agricultural growth. Due to the lack of other means of survival, the small land-owners farm only as means supplementing their incomes, and have no other choice but to keep their farms, with hardly any chance to expand or develop their businesses. The situation is similar in EU member states, however more funds are available for subsidies in the EU than in Hungary.

Hungary cannot afford to shut down masses of small farms in the short-run, due mainly to social and political reasons. Consequently, the state must act as a social welfare provider. At the same time, the future of these farms must be addressed and managed from the aspect of agricultural production. Also, rationalisation of production must be promoted among small farms that are not viable or competitive because of their size. In our view, the existing options are the following:

- Promote growth by supporting farms, which have the necessary capabilities and helping them, enter the competitive sector.
- Support land sales and the closure of farms wherever it allows the development of more viable production units.
- Provide special support to subsidiary farms that are not attempting to survive on their own provided they are willing to join forces in a modernization process based on voluntary cooperation in production and sales, or even processing.

4.2 Recent statistics on farm structure

In 2000, there were 8,382 economic societies (legal entities and other societies) and 958,534 individual farms in 2000. Production units comprising 1,500 m² of arable land or one larger animal (e.g. 1 hog) qualify as individual farms, basically disregarding the related EU standards. This classification needs urgent correction; the present use of the term is inaccurate, misleading and unsuitable representation of reality. The area used by economic societies amounts to 3.83 million ha, while individual farms cultivate 2.61 million ha. Thus, the two share arable lands to a ratio of 59.5 to 40.5 %.

The average size of economic societies is 663 ha, while that of individual farms (with extreme dispersion) is 2.74 ha.

43.5 % of the economic societies own areas below 100 ha. The majority of these are service-providing or trading companies as well as some livestock farms without their own land. Of the others, 25 % have 100-500 ha, 10 % 500-1,000 ha, 20 % 1,000-5,000 ha of arable land. The 305 typical, agricultural, large-scale farms are among the latter. The remaining 1.5 % is above 5,000 ha, they are mainly silvicultural farms.

71.9 % of individual farms cultivate less than 1 ha. The ratio of those cultivating 1-5 ha is significant but full-time farmers are rare among them. The remainder, which can actually be called farms is as follows: 4.4 % cultivate 5-10 ha, 4.5 % 10-50 ha, and 0.7 % more than 50 ha.

Production units smaller than 1 ha cultivate only 175 thousand ha, or less than 3 % of Hungary's arable land. 6.3 % of total arable land is cultivated by 1-5 ha farms, 4.7 % by 5-10 ha , 14.2 % by 10-50 ha and 12.5 % by farmers possessing more than 50 ha. Thus, the unviable producers (below 5 ha) own less than 10 % of Hungary's arable land, which is promising regarding the future.

4.3 The land market in Hungary

The data concerning the position of the land market and leasing is based on representative surveys, since country data is not available. For the third time we conducted these surveys in about one hundred agricultural cooperatives, in order to obtain information about the process of transformation as well as the situation following the political change and, finally, we have evaluated the effects of the transformation extending to nearly all branches of agriculture.

As late as 1998, a land market remained in its infancy throughout the whole country. Average land prices varied in different regions. The price of land is currently between HUF 60,000 and 240,000 per hectare (ECU 240-960) relatively low compared to EU land prices. The establishment of an actual land market is hindered by legal regulations that stipulate that only private persons, not joint enterprises or cooperatives, can purchase land. An overwhelming majority of these latter economic organisations would buy land if they had the legal right and the financial strength. The reasons are obvious, land ownership provides economic security, considering the present low land prices and annually increasing rent, arable land can be purchased for an amount equivalent to 5-6 years rent. Therefore, one important cost factor of farming can be eliminated and the savings invested in rational, 'reformatory' land utilisation. Average land rent compared to the average land price is 10 per cent, and it is 3-5 times higher than in the EU member states countries

Due to the separation of land ownership and land utilisation, joint enterprises such as cooperatives have started leasing land. An overly fragmented ownership structure is reflected in arable land by the fact that one cooperative has contract-based legal relations with an average of 662 persons as leasers, with each leaser owning an average 2.6 ha plot. The majority of leasers are unemployed pensioners; cooperative members or landowners living away from the village. Individual cultivation of their lands is probably not a realistic alternative for these leasers due to their age, their link to agriculture and the small size of their properties. They consider leasing to be a rational solution in the long term. These numbers also justify the necessity of land consolidation. The duration of a lease is 3-5 years on average, which, considering the characteristics of agricultural production does not offer leaseholders long-term security.

One of the riskiest factors of farming is the uncertainty of leasing, caused by high rent prices which can be offered by the private leaseholders, who can save on tax and in this way promote competition. These factors result in a continuous increase in farm rents. The rent is between HUF 11,000 and 16,000 per ha depending on the soil quality.

The surveyed farms evaluated the changes of land utilisation based on the characteristics of their surroundings. Nearly three quarters of them concluded that for neighbouring landowners, land leasing is a long-term prospect. Clearly, a change in the law is necessary as soon as possible, in order to lift the ban on land purchase, and also to introduce regulations to protect leaseholders, such as longer leases and rent control.

4.4 Indicators of Social and Economic activity

The economic and social transformation in 1990 has created an employment situation, which is radically different to under communism and increasingly hard to endure. The problems that have emerged vary between regions and types of settlement. There is an increasing urgency to define and establish tasks, provide employment guidance and create job opportunities which will maintain the population and enhance livelihoods in the rural areas. While searching for new solutions, it is of utmost importance to define the future role of the agricultural sector, which is so closely related to rural areas and was once such an important employer of the population.

4.5 Education

Due to the significant reduction of employment, the educational attainment of active agricultural workers has improved. However, more than two times the 40 percent national average still receive only elementary school education (see Table 6-7.). The ability of agriculture to adapt is restricted since the percentage of those holding a degree is less than half the national average. All in all, the educational level of agricultural employees has improved, but is still inadequate for the challenges of the near future.

Distribution of active earners by main industries in Hungary (1980-1996)

Age-groups	**Active earners**					
	Number, Person	*Percentage, %*	*Number, People*	*Percentage, %*	*Number, People*	*Percentage, %*
	1980		1990		1996	
Agricultural active earners						
14-29	250,719	26.1	164,152	23.5	60,839	21.8
30-39	225,034	23.5	216,924	31.0	72,250	25.9
40-49	235,437	24.6	190,468	27.2	98,118	35.1
50+	247,772	25.8	128,068	18.3	48,163	17.2
Total	958,962	100.0	699,612	100.0	279,370	100.0
Industrial active earners						
14-29	74,279	35.6	483,356	28.2	338,513	29.7
30-39	544,294	26.1	529,511	30.9	285,594	25.1
40-49	474,662	22.7	454,972	26.5	372,430	32.7
50+	325,664	15.6	246,080	14.4	141,698	12.4
Total	2,086,899	100.0	1,713,919	100.0	1,138,235	100.0

Active earners together in national economy						
14-29	1,654,097	32.6	1,232,829	27.2	993,760	28.5
30-39	1,336,999	26.4	1,422,002	31.4	914,833	26.3
40-49	1,164,411	23.0	1,218,826	26.9	1,125,651	32.3
50+	913,333	18.0	653,500	14.4	450,581	12.9
Total	5,068,840	100.0	4,527,157	100.0	3,484,825	100.0

[1)] Industry and construction together

Number and percentage of active earners by education level

Education level	**Active earners**					
	Number, Person	*Percent %*	*Number, Person*	*Percent %*	*Number, Person*	*Percent %*
	1980		1990		1996	
Agricultural active earners						
Primary school	703,962	73.4	387,151	55.3	118,406	42.4
Secondary school	220,810	23.0	274,324	39.2	140,917	50.4
University	34,190	3.6	38,137	5.5	20,047	7.2
Total	958,962	100.0	699,612	100.0	279,370	100.0
Industrial[1] active earners						
Primary school	1,153,714	55.3	724,900	42.3	285,843	25.1
Secondary school	839,124	40.2	876,955	51.2	755,999	66.4
University	94,061	4.5	112,064	6.5	96,393	8.5
Total	2,086,899	100.0	1,713,919	100.0	1,138,235	100.0
Active earners together in national economy						
Primary school	2,731,224	53.9	1,746,751	38.6	742,590	21.3
Secondary school	1,925,397	38.0	2,225,571	49.2	2,156,970	61.9
University	412,219	8.1	554,835	12.3	585,265	16.8
Total	5,068,840	100.0	4,527,157	100.0	3,484,825	100.0

[1)] Industry and construction together
Source: Changes in employment, 1980-1996, *Mikrocenzus*, 1996, CSO, Budapest, 1997

4.6 Agricultural Income

The income of agricultural workers shows disparities compared with the national average and average industrial income. The discrepancy is approximately 26-30 percent, which is increasing and shows great deviations from region to region. These large discrepancies are indicative of a situation, which can only be eased by an economic recovery. Until that time, the arising social tensions can only be treated through a significant increase in government resources devoted to agriculture. It is discouraging that worsening subsistence conditions are shaping the future for the next generations. (Table 8)

Gross agricultural earnings in comparison with other industries

Domination	1990	1992	1994	1996	1998
Gross earnings in average[1)]					
- In agriculture	11,268	15,317	24,609	34,992	48,762
- In industry	13,700	22,038	33,422	50,223	69,839
-In average of national economy	13,446	22,294	33,309	47,491	67,764
Gross agricultural earnings in comparison					
- With industry (average in industry=100%)	82.2	69.5	73.6	69.7	69.8
- With national economy (nat.average=100%	83.8	68.7	73.9	73.7	71.3

[1]Data of economic organisations above 20 full-time employed; HUF/ person/month
Forrás: Hungarian Statistical Yearbook, CSO. 1992., 1994., 1996.

Part of income arising from non-traditional forms of employment is untaxed and thus does not enable social security provisioning. It seems a realistic assumption that the full magnitude of this issue is unknown, but undoubtedly it exists and will result in great numbers of individuals over the working age becoming entirely socially dependent.

4.7 Employment

The rise in unemployment by nearly 1,5 million (1,485 million) between 1990-1998, significantly transformed the population's employment composition and exacerbated regional differences. Ninety per cent of the increase took place in a very short period of time – prior to 1993 -- while 10 percent ensued in the following years. The situation was further worsened due to a demographic boom causing an extension of the labour market.

Table 3 indicates a dramatic drop in employment in the industrialised and 'marginalised' regions of Northern Hungary and the Northern Great Plain. The situation is similar in other regions dominated by agriculture, where the level of economic activity registered in 1990 was 40 percent and six years later it failed to reach 30 percent. In some counties of Northern and North-Eastern Hungary, the economic activity is a mere 26-28 percent

It is a worrying and astonishing fact that two thirds of the population and 33 percent of the active earners live in villages, the particular settlement structure of the country in which the employment situation is becoming increasingly critical. The economic activity of the village population is approximately 30 percent, which is nearly the same level as that of the regions of Northern Hungary and the Northern Great Plain who are struggling with the worst employment situation!

Due to the decrease in economic activity the growing discrepancy between the active and inactive population, active earners have to bear an increasing burden. In 1990, 100 active earners had to provide for a 'mere' 129 economically inactive persons, while this provision grew to nearly 200 in 1996, and in counties with the most critical employment situation the figures are as high as 250-280 people.

Changes in the economic activity of the Hungarian population 1990-1996

Regions	Rate of Employed* %		Rate of Inactive population** %		Change of Inactive Population 1980=100%
	1990	1996	1990	1996	
Central Hungary	45.4	36.9	54.6	63.1	112.4
Central Transdanubia	45.1	35.9	54.9	64.1	116.7
Western Transdanubia	44.7	39.7	55.3	60.3	107.6
Southern Transdanubia	43.1	32.7	56.9	67.3	115.6
Northern Hungary	42.1	29.3	57.9	70.7	119.5
Northern Great Plain	40.7	29.2	59.3	70.8	118.9
Southern Great Plain	43.1	34.1	56.9	65.9	113.5
National Economy. Total	43.6	34.2	56.4	65.8	114.8
cities, combined	44.8	36.4	55.2	63.6	111.8
Cities in the countryside	44.5	36.0	55.5	64.0	113.3
Villages. Combined	41.5	30.4	58.5	69.6	119.8
: below 999 people	39.4	27.3	60.6	72.7	114.0
1,000-4,999 people	41.7	30.5	58.3	69.5	128.3
above5,000 people	43.2	33.2	56.8	66.8	100.4

* The ratio of active earners in the population; ** Unemployed, inactive (and retired people) and dependants together

Source: Tendency of Employment, 1980-1996. *Microcenzus*, 1996 CSO, 1997

The accelerated changes of structural transformation, which took place between 1989 and 1997, significantly changed the employment ratio of the main groups within the national economy. The share of agriculture and silviculture decreased by half of the national level, from 17.9 percent to 8.5 percent, the share of industry and construction has dropped by almost one-third, 31.4 percent, while service industries showed a ratio increase extending to 60% of those employed (Table 4.).

Between 1990 and 1998, the number of those employed decreased by 27.2 percent, more than 1.5 million people. During this period, in which the agricultural sector suffered the greatest decrease, the workforce was reduced by almost 650 thousand people. In agriculture the most severe point of reduction occurred in 1993. This increase in unemployment mainly struck the rural, village population including many territories where agriculture was the main employer.

Number and percentage distribution of people employed by industries[1] (1990-1998)

Denomination	Employed				Measure of changes	
	Number, 1,000 people		Distribution, %		Between 1990-1998	
	1990	1998	1990	1998	Number, 1,000	%
Agriculture, forestry	955.0	310.9	17.5	7.8	-644.1	-67.4
Food industry	203.0	122.0	3.7	3.1	-81.0	-39.9
Industry & construction	1,773.8	1,149.5	32.4	28.8	-624.3	-35.2
Services	2,540.1	2403.6	46.4	60.3	-136.5	-5.4
Total	5,471.9	3,986.0	100.0	100.0	-1,485.9	-27.2

1) According to sector classification valid from 1January, 1992; agriculture together with hunting, fishing and forestry
Source: Labour Account Hungary, 1 January 1994 and 1998. CSO

The transformation of the different sectors employment structure had varying influences on the different regions and settlement groups depending on potentials and the previous production structures (Table 5). The decrease in the employment share of agriculture was most significant in Central and Northern Hungary and the Western Transdanubian counties. The main reason for the high workforce reduction was the elimination of industrial activities and less favourable potential for agricultural production. The majority of economic organisations in the territories concerned were unable to compensate for the loss of organisational structure and the transformation of ownership, which caused workforce reduction. In the counties of the Southern Great Plain and Southern Transdanubia, which traditionally favour agricultural production, there are better opportunities for production and the structural characteristics. This is reflected in the agricultural employment ratios amounting to 12-15 percent This is particularly true in the counties of the Southern Great Plain, where employment in agriculture is double the national average.

Regional changes of employment structure by industries (1990-1996)

Counties, regions	Percent distribution of employed by industries in national economy					
	Agriculture & Forestry	*Industry*	*Services*	*Agriculture & Forestry*	*Industry*	*Services*
	1990			1996		
Central Hungary	6.8	35.7	57.5	2.4	26.4	71.1
Central Transdanubia	14.7	44.6	40.6	8.7	39.6	51.7
Western Transdanubia	16.5	38.8	44.7	7.4	39.6	53.0
Southern Transdanubia	19.8	35.9	44.3	12.5	31.3	56.2
Northern Hungary	13.6	45.0	41.4	6.0	38.0	56.0
Northern Great Plain	21.8	35.4	42.8	11.5	33.5	55.0
Southern Great Plain	26.5	33.5	39.9	15.8	30.9	53.3
National Economy, total	**15.5**	**37.8**	**46.7**	**8.0**	**32.7**	**59.3**

From it: cities, combined	8.2	39.4	52.3	3.9	31.4	64.7
Cities in countryside	**10.5**	**41.7**	**47.8**	**5.3**	**34.7**	**60.0**
Villages combined	**29.1**	**34.9**	**36.0**	**16.4**	**35.3**	**48.3**

Source: Labour Account Hungary, 1 January 1994 and 1998. CSO

From the ratios of agricultural employment pertaining to regions and settlement types, it is evident which territories are still important prospects for agriculture, despite the loss of importance in employment (see Table 4). It is obvious that the significance of agriculture is closely related to the size and population of settlements. The smaller a settlement is, the stronger the role that agriculture plays in its livelihood.

Because of the social and economic transformation, the composition of employers and employment types became more diversified. The role of the state and cooperatives as the almost exclusive employers has vanished. Employment by private farms and firms with joint ownership with 55.5 percent of the market became slightly predominant. The number of organisations operating with a small number of employees has increased significantly. They are characterised by a more intense fluctuation of workforce and offer more flexible forms of employment. The changes concerning employers as well as employees involve problems and stresses, but they created a more intense labour force market than had previously existed.

Parallel to the recession in traditional full-time employment, more flexible forms, part or reduced time, working from home, temporary, casual, or self-employment, have developed, outside of legal regulation and economic incentives negated by the lack of workplaces and demand. The labour-force taking up these new ways of employment can only be partially detected by statistical methods.

The ratio of employees in agriculture has been significantly reduced to 60 percent, compared with private entrepreneurs who account for approximately 20 percent, the balance being taken up by cooperatives and partnerships. Three quarters of private entrepreneurs operate without employees. This means that in the private sector of agriculture, self-employment and family labour is predominant, limiting the prospects for creating new workplaces.

4.7.1 Recent Rates of Unemployment

The ever increasing societal burdens of unemployment are reflected in the following figures: From the slightly more than 40 thousand unemployed registered in mid-1990, peaking at nearly 700 thousand in June 1993, the registers showed 400-500 thousand unemployed in 1996-1998, a rate of 10-11 percent (Table 9).

Number and rate of active earners and unemployed by regions and other settlement types in Hungary (July 1998)

Region, settlement type	**Active earners**		**Unemployed**		**Unemploment rate, %**
	Number, Person	Percent	Number, Person	Percent	
Central Hungary	1,066,859	30.6	59,973	14.7	5.3
Central Transdanubia	400,458	11.5	40,186	9.9	9.1
Western Transdanubia	396,195	11.4	27,284	6.7	6.4

Southern Transdanubia	325,375	9.3	47,774	11.8	12.8
Northern Hungary	379,906	10.9	82,817	20.4	17.9
Northern Great Plain	449,153	12.9	90,205	22.2	16.7
Southern Great Plain	466,879	13.4	57,971	14.3	11.0
National economy, total	**3,484,825**	**100.0**	**406,210**	**100.0**	**10.4**
Budapest	708,893	20.4	32,967	8.1	4.4
Cities in the countryside	1,624,393	46.6	188,847	46.5	10.4
Villages combined	1,151,539	33.0	184,396	45.4	13.8
Below 499 people	63,926	5.5	16,327	8.8	20.3
500-999 people	129,881	11.3	27,788	15.1	17.6
1,000-2,999 people	539,578	46.9	82,360	44.7	13.2
3,000-4,999 people	198,247	17.2	32,158	17.4	14.0
5000+ people	219,907	19.1	25,763	14.0	10.5

[1/] According to the previous calculation method, a rate compared to the number of active earners
Source: Calculation based on the data of National Employment Methodology Centre

The reasonably constant unemployment rate slightly exceeding 10 percent after 1993, and dipping to 'only' 9.8 percent in April 1998, signals that, despite the overwhelming contradictions, the labour force market situation in Hungary is stabilising. We have to live with a permanent unemployment rate of about 10 percent, as well as the present productivity of the economy. We must use every means to control unemployment as well as improving the quality of the workforce by introducing new policies such as training and preparation for a more lively economic progress.

In 1998, the unemployment differentiation among territories and settlement types remains unchanged (see Table 9). The employment situation of Northern Hungary and the Northern Great Plain is still the most critical, characterised by unemployment rates of 17.2 percent and 16.7 percent respectively, exceeding the 10.4 percent national average by 5-6 percent in 1998. The unemployment rate of those living in villages is 2.6 times higher than that of those living in the capital, but it is also higher than that of town-dwellers by 3 percent. More than half (54.1 percent) of the unemployed population is considered long-term unemployed by exceeding 180 days of unemployment. In villages, this level approaches 60 percent and in settlements with lower population, it even exceeds it.

The out-migration of workers from the agricultural sector did not stop in the years following the transformation, but its pace decreased significantly. According to the data of the National Employment Methodology Centre, 15-18 percent of the newly unemployed came from the agricultural sector, which, compared to the 30 percent registered at the beginning of 1993, is a significant decrease. The number of those losing their jobs change due to seasonal production, a common practice in agriculture, as well as other reasons for unemployment,. An increasing number of agricultural employers are forced to choose this solution due to low profitability and simplified production.

4.8 Conclusions

In order to solve or at least decrease the above described employment problems especially those related to agriculture, which are even emphasised by the forthcoming EU accession, the following tasks should be urgently accomplished:

- Gather statistical information measuring the current situation, which can be used both now and for the EU registration system.
- Ease rural employment problems. This is possible only by integrating several economic sectors. Even in the present production structure, it seems expedient to maintain the employment role of agriculture. Moreover, due to its direct effect on rural employment, the aim should be competitive agricultural production; change of the ownership structure and the corporate system of production should be regarded as a process not to be burdened by further changes with no economic justification. Room should be made for organic development. As a result, diverse methods of propriety and farming can develop, enabling small private farms to be as viable as large-scale organisations. The reviving integration between them, which already has a tradition, and can be based on previous experiences, could provide an assurance and background for a European level of production while at the same time serving the subsistence and employment of the rural population.
- Maintain the existing employment level in agriculture and to create new jobs. This can be done by promoting the spread of labour-intensive plant cultures and developing product cycles and vertical integration.
- Promote flexible solutions. Special importance should be given to legalising certain structures, affecting both employers and employees. For this purpose, it is necessary to precisely define new methods of employment and to confirm their labour juridical and social security background. The question of part-time or reduced time employment forms, which aim at a fairer distribution of work and have examples in more developed market economies, should be handled in a special way so that they could be combined with other ways of earning a living.
- Track new employment forms. This necessitates a new, simple and transparent registration system. Accepting transparency seems the most difficult. It can only succeed if health and old-age insurance are connected to the obligation to pay tax, guaranteeing more obvious advantage through eligibility for insurance than the short-term advantages of tax avoidance.
- Activities such as conserving non cultivable landscape, environment and nature protection as well as improving the image of the village, or cultivating areas of common use, should be made acceptable as possible areas of employment. Naturally, these solutions would not provide a secure livelihood by themselves, but because of their importance, these incomes should be supplemented from state sources.
- Utilise the experiences of developed market economies, functions of agriculture that are exposed to market competition should be separated from subsistence functions that serve the maintenance of rural regions and rural life as a social aim, preventing the falling behind of less favoured regions and settlements. Although, it is obvious that this social type agriculture cannot bring profitable results by itself. Therefore, it is especially important to increase the employment role of activities in other economic sectors, such as, industrial production and manufacturing services, and to connect them to agriculture.

5 A socio-economic survey of land tenure and the potential for LC

5.1 A description of the survey area

The two settlements selected for detailed analysis are situated close to each other, and have significant similarities in their natural terrain and topography, but over the past 10 years they have followed significantly different paths concerning economic development, particularly in the structural transformation of agriculture. Determinant factors in their selection for study were the complete and unconditional cooperation from local authorities in both settlements and, seemingly ideal conditions for analysis of recent history and future prospects in rural surroundings with strong agrarian orientation.

5.1.1 Harta

The population of Harta is approximately 3.8 thousand people; its total area is 13 thousand hectares. The settlement has a well-developed infrastructure (water conduits, sewage system, gas pipes, telephone network, cable television etc.). The level of the population is decreasing slightly. The number of homes remains more or less constant, 26 new homes were built in 1970, 41 in 1980, 13 in 1990 and 2 in 1998. The network of shops has rapidly widened in the past decade, after 1990 the number of shops grew from 21 to 68, and reduced to 57 by 1998. In the village, there are 15 catering units, several places of accommodation and campsites.

In the economic life of the village, the Erdei Ferenc Cooperative, providing 500 jobs, and the Agro Harta Joint Stock Company, providing 85 jobs, play an important role. Besides these there are several industrial and commercial enterprises of varying sizes, altogether 245 in 1998, comprising 1 joint stock company, 2 cooperatives, 42 limited companies, 44 deposit partnerships and 152 private enterprises. Many people have jobs in the neighbouring settlements, but a large number come to work here from elsewhere. Forty-two people, 1.1 percent of the population, received unemployed supplementary benefit income in 1998.

The number of private farmers in agriculture is insignificant. Mostly they cultivate larger lands in the intensive sectors of vegetable and fruit production. The overwhelming majority of landowners either lease out or, in the frame of a special, locally developed contract system, have their land cultivated by the two large cooperatives. The cultivation of small-sized, subsistence gardens as well as vine and fruit growing is traditional to the village.

In Harta, transformation difficulties were not unbearable, and the conversion of the structure of the farm and corporate system did not result in irrecoverable damage as it did at national level or in the case of Szakmar -- the other studied settlement. Few settlements took the opportunity, which have been allowed by law since 1987, permitting members to take direct possession of half of the formerly indivisible cooperative property and granting the freedom to dispose of land ownership. Moreover, only the cooperative members and management of two settlements realised the fact that common and indivisible land could be transferred into private ownership. The members of cooperatives, bought the majority of common arable land, its size depending on the years spent in the cooperative, in 1998, which gave them the following enormous advantages:

- Anomalies inherent in the compensation procedure that facilitated corruption and favouritism in many other settlements did not take place.

- Unlike in other areas where those who worked the land were not necessarily the owners, here those who actually depended on agriculture and worked the land acquired land.

After the transformation, the two cooperatives have run different courses. The Erdei Ferenc cooperative can be characterised by:

- A traditional cooperative way of thinking, involving efforts towards social welfare, in some cases even ignoring economic considerations.
- A stronger corporate spirit and inclination to preserve employment opportunities, almost half of the former workplaces were maintained.
- The survival of a diverse production structure reliant on several activities, including the operation of a shoe factory employing 150 people, providing the local female workforce with income opportunities.
- The cultivation of 'members' and 'outsiders' lands is mainly in the framework of leasing contracts.

Characteristic features of Agro Harta Joint Stock Company:

- An economic rationale pervades all aspects of management and production.
- A strictly simplified production structure concentrating purely on arable lands, which had already been practically established before the change of regime.
- The landowners have their lands cultivated in the framework of a cultivation contract system, this amounts to nearly 80 percent of the area and the rest is fixed lease.
- The predominance of a profit-oriented entrepreneurial spirit.

The joint stock company was established in 1999 out of the ex-cooperative, with the participation of 92 percent of the members, primarily to oppose strengthening political pressure.

The population of Harta is generally well-informed and has a direct and thorough international outlook, owing to the fact that the majority of the population are ancestors of one-time German-speaking settlers and have remained in touch with relatives living in Germany. This is illustrated by the selection of leaders as well as the former integrated small-scale production and present cultivation contract forms of organisation and cooperation characteristic in agriculture. The village is keeping its traditions alive, its museum of local history is well known and they are planning to develop it significantly.

In our opinion, a reasonable agricultural farm structure has developed in the village. Conditions of permeability between large-scale and private farming are exchanged, owners' decisions are mainly influenced by rational or sometimes, emotional motives, rather than force. All local conditions of professional land cultivation to the benefiting landowners exist, therefore, the future mainly depends on general agricultural policy. In connection with this, the local population expresses a great deal of scepticism, but tries to make complete use of all legal opportunities available in the present system such as preferences granted to small enterprises. The local authority, due primarily, to past and present initiative, is able to plan further developments on a strong basis.

5.1.2 Szakmár

Szakmár is smaller than Harta, with an area of 7.5 thousand hectares and a population of 1.5 thousand people. It is characterised by a specific form of settlement called 'szállás',

closed out-skirt settlements that used to include the majority of the population. The village is 700 years old with a Hungarian population. Its agricultural cooperative, which had functioned well formerly, underwent strong economic deterioration by the beginning of the 1990's. It was broken up into several parts and later the common agricultural plant was closed down. The natural environment for agriculture is weak, with a high proportion of land being marshlands.

The numbers of the population had been decreasing constantly and significantly until 1999. The number of homes is stagnant or, mainly in the outskirt settlements, decreasing. Six homes were built in 1970, 13 in 1980, 3 in 1990 and none in 1998. The village has a good infrastructure, even the outskirt settlements have electricity and a long-distance bus service. It has a telephone network, water conduit and gas pipes. The building of the sewage system started in 2000 with the cooperation of several villages. The number of shops grew from 11 to 20 after 1990, later decreasing to 16. There are 3 catering units.

The former large agricultural farm made several, only partially successful, attempts to employ a large number of the local workforce, partly in livestock farming, partly by setting up different industrial activities. Large-scale livestock farming was completely liquidated apart from the fishpond functioning as a limited company and providing 9 jobs. Among industrial enterprises an iron-foundry (in cooperative form), a galvanizing plant and a commercial-logistic enterprise (as a limited company) are still functioning. In the field of agriculture, a plant established to harvest, clean, dry, warehouse and market cereals and oil-seeds proved to be a viable enterprise, functioning as a limited company. Two private farms properly cultivating larger fields and about 8-10 smaller, full-time private farmers work in the area of the village. The majority of the area is cultivated on a small-scale by part-time farmers including a large proportion of pensioners with obsolete means of production, usually at a low standard or, lacking other employment opportunities. In 1998 there were 90 functioning enterprises in Szakmár**,** of which 2 were cooperatives, 14 limited companies, 6 deposit partnerships and 68 private enterprises. Many people from the village work in Kalocsa, a town 8 km from Szakmár. In 1998, 3.4 percent of the population, 50 people, received unemployment supplementary benefit income.

The current situation and the future of agriculture are unsettled. Besides the few viable enterprises, an ageing and gradually impoverished group cultivates the majority of the land. We have not been able to find promising signs concerning either the improvement of their personal prospects, or the establishment of the basics of their subsistence. The decisions of those cultivating the land are driven by emotional considerations and, due to a strong independence, by the necessity to subsist. People have used up most of their previous reserves, a general worsening of economic, social and even health conditions can be observed. Social relations can be described as passive, with evidence of abstinence from any form of common economic enterprise. This lack of orientation applies to local and general economic circumstances and, within this, agrarian policy. It is worrying that the number of those marginalized by society is growing rapidly and most of them completely lose their ability to work in a very short period. A positive exception is the active cultivation of the traditions of local folk art and culture and the cultivation of spiritual traditions. The efforts of the local government are completely absorbed in the operation and maintenance of the physical infrastructure and public institutions of the village.

5.2 An overview of the survey results

The primary aim of this study was to understand agricultural problems facing landowners by exploring real life cases. We hope that the responses of the relatively large number of families interviewed in-depth, – a total of 197 families, 131 in Harta, 66 in Szakmár – can help to find a basis for the method and direction of breaking out from the present stagnant situation to find new opportunities. Detailed results have been included in the tables attached to provide information for further analysis. For clearer understanding, we summarise the most important results below.

The analysis of the answers suggests several interesting and useful conclusions, first that we should be wary of schematic and simplifying conclusions. Even the two almost neighbouring villages illustrate an image of two diverse worlds, despite the fact that land ownership changes having taken place together with the change of regime have been achieved relatively smoothly in both.

In Szakmár, owners lease out 10 percent of their land, in Harta the figure is21 percent, and they also have another 61 percent cultivated by service enterprises in the framework of a cultivation contract. In Szakmár, those questioned increase their land by 93 percent by leasing-in; however, in Harta only by 15 percent lease-in land. In Szakmár, one family cultivated an average of 14 ha of land on its own. At the same time, 14 percent of the people in Harta expressed a desire to buy land, but only 6 percent in Szakmár are considering it, presumably because of the lack of resources rather than lack of desire.

Despite these differences, surprising similarities can also be found. Among the most interesting are:

- Similar sizes of land that is owned. The average area of land belonging to a family is 7.7 ha in Szakmár, 7.0 ha in Harta. The ratio of land size is also similar. Half of those questioned have less than 5 ha, but 40 percent of the land area belongs to those owning more than 20 ha.
- The majority of the local population are involved in some kind of agricultural activity; 87 percent of those questioned in Harta, 95 percent in Szakmár. Characterizing the vagueness of the term '*őstermelő*' (primary producer) 83-83 percent of the families questioned in both villages have this certificate entitling them to tax allowances and representing one condition of receiving subsidies but, at the same time, excluding them from social benefits.
- In both settlements the owners' arable lands are in 2-2.2 ha plots. Their average size is 2.9 ha in Harta and 3.7 ha in Szakmár (according to our knowledge much bigger than the national average). Still, only 29% or owners in Harta and 32% in Szakmar say they would like to consolidate their lands into larger units. In fact however, even fewer people mean this seriously, since only 23 percent of the people in Harta and a mere 20 percent in Szakmár would be willing to carry through land exchanges, a practical realisation of land concentration. Altogether only 10 percent have tried to exchange lands.

Twenty percent of those questioned in Szakmár, think the slosing-down of the ex-cooperative was a good thing, 70 percent think it was bad and 10 percent are indifferent. In Harta half of the people questioned think the survival of the cooperative is good. However, further answers can be evaluated only with difficulty, because of the inaccurately formulated question due to the co-operative becoming a joint stock company in the meantime. Perhaps the answer, according to which 79 percent of those questioned in Harta maintain relations

with the former co-operative and joint stock company, is more important. As far as the chances of future cooperation are concerned, in Szakmár, despite 22 positive answers, 44 people do not wish to participate in any co-operative form at all, while in Harta we were given 90 positive and only 24 negative answers.

It is most likely that the population of Harta, considering the potential and opportunities of the general economic environment, is satisfied with the evolved situation of land ownership and land usage. In our opinion, owners consider and treat arable land as an asset, and their expectations concerning the future are formed accordingly based on the belief that its value can only grow.

In Szakmár the ownership and farming conditions of agriculture are temporary. Reasons are complicated, and often cannot be explained by rational arguments. The overwhelming majority of those venturing into private farming, partly voluntarily and partly through necessity, lacked adequate land, assets and experience concerning production techniques and marketing when the local agricultural plant was shut down. All this would have undermined most of them after a few years, even if there had been no significant deterioration in the market situations of production. However, since 1991, drastic income losses have occurred. The strategy of the farmers can definitely be described as survival and 'hanging on with no clear vision.' The process is characterised by general, economic and personal, deterioration together with continuously increasing variation. Land in Szakmár is, primarily, a means of production, the last resort of subsistence proving permanently insufficient. Despite the high subsistence dependence upon land, we also observed that people express a string emotional attached to land.

5.3 A sociological analysis

5.3.1 An assessment of state policy regarding rural livelihoods

Hungarian motivations related to land ownership, on the basis of our general knowledge and the surveys carried out, can be categorised as having the following elements:

1. Subjective elements

- Emotional attachment to the inherited property.
- A sense of security given by land.
- Ą sense of economic dependence.
- Confusion and lack of information concerning the future state of agriculture.

2. Objective elements

- To treat land as capital, with the aim of the preservation of property and intentions to enlarge the property.
- Land as a stable asset to preserve means,
- Expectations connected to the increase of land prices, especially in the period before EU accession.

In the case of very small land plots (under 5 hectares) a common characteristic feature is that, besides economic dependence, nostalgic attachment is an important factor concerning usage -- especially in the case of the elderly. This property is the least mobile in nearly every respect, while being the most subdivided and in the greatest need of land consolidation. In

the case of large areas (above 50 or 100 hectares) the capitalist view predominates. In Hungary low land prices are still attractive for speculators, the present legal provisions are sympathetic to non-agricultural investors, the so-called 'townspeople'. Therefore, the trading of large land areas should urgently be made dependent upon conditions of agricultural occupation, professional training and local residency, eliminating the, more or less, justified reasons for the fears of land acquisition by foreigners.

The owners' group of medium-sized land areas (5-50 hectares) is very diverse in every respect. At the beginning of the 1990's, legal regulations focused more on righting the wrongs on communism, rather than the establishment of the future. Therefore, alongside, and largely at the expense of, those intending to cultivate their land, a large number of owners emerged, who accepted land for the want of anything better, or who were unable to cultivate it due to old age. This group covers those with all manner of different motivations, including those who intend, or may sometimes be forced, to sell their land sooner or later.

Owing to the many small land areas unable to provide independent subsistence and the large number of those unable to cultivate their lands, the type of land usage depends on whether there is a private entrepreneur or enterprise in the given settlement, is able to enter into various land tenure arrangements, such as:

- Land leasing.
- Cultivation.
- The provision of complete services (extending to complete cultivation, and even marketing).

In our experience, few smallholders are able to fulfil the contracts for land cultivation, as in the main only the large farms have proved viable. Usually land owners themselves are not in the position to finance the whole production process. According to our findings on land cultivation contracts, the owner has to advance current assets to the value of HUF 80-90,000 for the production of one hectare of cereals or oil-seeds, which is returned upon the sale of the product.[16] There is a need for increased goodwill from both parties besides legal clarification concerning the registration of land usage and the utilisation of area-based subsidies, in order to make this otherwise very promising solution more widely adopted.

The chances that the majority of landowners could cultivate their lands themselves are diminishing day by day. The reasons, besides ageing, can be found in the complete lack of assets and capital funds available for agriculture and in the very small land holding plots. Concerning the latter, information provided by calculations made by Gábor Kovács of the Research and Information Institute for Agricultural Economics (Table 1) showed that in order to achieve economic efficiency in production in accordance with EME[17] (EU measures), the necessary minimum for the subsistence of one family is at least 40 hectares of cereals, 7.5 hectares of apples or 15 milk cows.

A barrier to land consolidation lies in the fact that, according to our experience, the majority of the many small landowners do not wish to sell their lands, at least not under the present economic conditions. The most important reasons, besides those mentioned above, are:

[16] the owner has to pay money to the producer to buy seeds, fertilizer, gas, etc.
[17] EME – European Unit of Measurement

- Economic dependence, the necessity of self-sufficiency, especially among those with decreased capacity for work.
- Cheap land prices means it is unprofitable to sell land. The purchase of a modest town flat would require the sale of 8-10 hectares of land.
- Relative satisfaction with the present utilisation, since even the low fixed price of leasing amounts to 7-10 percent of the sale price of the land. Under the undoubtedly much riskier system of cultivation contracts, which are anyway not available in all settlements, the price of leasing can be two or two and a half times higher than the fixed price.

Calculated values of Hungarian sectoral sizes corresponding to EU farm categories

Sector	*Size of the farm (in hectares):* Small, less than EME 4-8	Small-medium EME 8-16	Medium-large EME 16-40	Large EME 40-100	Very large EME 100+
Winter wheat	41.6	83.2	166.4	416.0	1040.0
Corn	42.7	85.4	170.8	427.0	1027.5
Apple	7.5	15.0	30.0	75.0	187.5
Wine-grape	15.5	31.0	62.0	155.0	387.5
Milk production Pc cows	15.1	30.2	60.4	151.0	377.5
Pig fattening Pc pig	179.0	358.0	716.0	1790.0	4475.0

Source: Dorgai - Kovács - Stauder - Tóth - Varga: The Farm System in Hungary's Agriculture Considering EU Experience. AKII, Budapest, Agro-economic Studies, 1999. No 8.

5.3.2 An analysis of household income structure

We have indicated at several points in this study, that Hungarian agriculture is in a stagnant situation at the moment. Both external and internal factors contribute to this. The external causes are generally characterised by the fact that Hungarian agriculture is coming under the increasing pressure of the world market without enjoying participation, or even approximately similar protection or subsidies. It is very important to emphasise that the former areas of competitive advantage have now been displaced through exports. The agrarian export offensives of the EU and the USA, subsidised by preferential credits and other benefits, result in serious competition-distorting consequences in the traditional eastern markets.

The majority of the internal reasons stem from the negative effects of the transformation process, especially in agriculture, where neither the concept of ownership changes nor its enforcement take into consideration the any measure of economic rationality. It is a regrettable fact that Hungarian agrarian politics is unable to handle the given situation and the country's agriculture is declining ever deeper into crisis.

Our present study reveals that very marked variations, as well as the inability of many small-scale farms to survive in the economic climate, characterise farm structure. We have presented this having taken into account both the examined settlements and the national situation. Now a more thorough analysis, based on the data values is provided. The completed data of the general agricultural fact-finding for 2000, based on the value of production, reveals the situation in the following table.

Private farms classified by the value of production

Value of production, 1,000 HUF	*The distribution of farms, %*	*The distribution of the value of production, %*	*Production value/ farm, 1,000 HUF*
Under 50	11.9	0.7	30.6
51-100	20.5	2.9	74.7
101-200	26.1	7.2	144.1
201-500	22.3	13.1	310.0
501-1,000	9.3	12.3	701.6
1,001-5,000	8.7	32.9	1,998.1
Above 5,001	1.3	30.9	12,567.7
Average	100.0	100.0	526.4

Source: AMÖ (General Agricultural Census) 2000. KSH, Hungary 2000

The data indicates that we cannot even talk about farms or agricultural holdings below a production value of HUF 500,000, especially if we consider the findings resulting from the survey of test-farms, showing that the ratio of the so-called operation income, including wages and profits from production, is around 10 to 15 percent. Therefore, contrary to the Hungarian use of the term, we can only regard about a maximum of 20 percent of some 958,000 individual or private farms professionally. That is a mere 185,000 holdings. Even the 90 thousand farms yielding a production value above HUF 500,000, but below HUF 1 million, are unable to sustain a family, since they are unable to produce an annual income exceeding HUF 250,000 even in the best of cases. Therefore, they cannot be listed among full-time producers. Thus, we are left with around 100,000 private farms in Hungary able to cross the quite modestly fixed threshold of independent subsistence, an annual production value of HUF 1 million, which, in accordance with test-farm data, demands at least 6 to 8 hectares of agricultural arable land.

The data of economic societies grouped according to production value are shown below

Agricultural companies classified by the value of production

Value of production, million HUF	*The distribution of the companies, %*	*The distribution of the value of production, %*	*Production value/ company, million HUF*
Under 5	42.0	0.9	1.6
6-10	8.9	0.9	7.2
11-50	22.4	7.3	24
51-100	8.5	8.4	73.6
101-500	15.9	48.6	225
501-1,000	1.7	15.8	673.8
Above 1,001	0.7	18.1	1,967.6
Average	100.0	100.0	73.7

Source: AMÖ (General Agricultural Census) 2000. KSH, Hungary 2000.

From these economic societies, more that 40 percent of smaller ones are barely able to provide more than one person with work and subsistence. Again referring to the test-farm data in the table above we can only call those yielding a production value of above HUF 100 million, viable large-scale agricultural farms

Collating comparisons of individual and collective farms (large-scale farms), raises several methodological problems. The most serious one is that individual farms do not take the full cost of wages into account, only that part paid to hired workers. Another difference is that the household and the farm cannot be separated clearly from each other. In the following table, we have imputed a wage-value to individual farm labour so that the data is more easily comparable.

Main economic data of private farms and agricultural companies by the test farm system in 1998 and 1999

Designation	*Unit*	*Private farms*		*Agricultural companies*	
		1998	1999	1998	1999
Number of economical units examined	Number	886	1,062		
The agricultural gross production value	1,000 HUF/ha*	118.8	146.4	243.3	248.4
Rate of crop production	1,000 HUF/ha*	64.5	85.9	78.6	83.7
Rate of livestock	1,000 HUF/ha*	49.2	51.5	103.4	95.9
Rate of other activities	1,000 HUF/ha*	5.1	8.6	61.3	68.8
Value of other performances	1,000 HUF/ha*	20.8	19.7	39.1	41.1
Costs of agricultural production	1,000 HUF/ha*	116.0	141.0	238.2	244.5
Agricultural income	1,000 HUF/ha*	4.5	5.4	5.1	3.9
Income from non agricultural activities	1,000 HUF/ha*	0.7		10.3	
Result before taxes	1,000 HUF/ha*	3.2	2.5	5.7	-4.4
Consolidated profit	1,000 HUF/ha*	1.0	-2.2	3.6	-5.7
Income rate**	%	2.7	1.7	2.1	-1.8
Profitability of total capital***	%	2.1	1.8	7.0	3.2
Profitability of labour****	1,000 HUF/EME	383.4	778.1	677.8	429.2

* Agricultural area
** Result before taxes/ Gross production value
*** Result before taxes/ Capital
**** Result before taxes + Personnel cost/ Labor force unit

We refer to some points of interest in the majority:

- Contrary to expectations and the former general practice in Hungary, individual production is not characterised by a higher level of intensity, but much more by extensive land use.
- Giving up one hectare of large-scale land results in the halving of the production on that land. That is, the gross production value at agricultural companies is the double value of the private farms, expressed in forint per hectare.
- The significance of livestock-farming on private farms is much smaller than on large-scale farms.
- The effective employment capacity and labour utilisation of private farms are much smaller than those of large-scale farms due to the intense utilisation of services (3.1 EMU/100 hectares and 4.5 EMU/100 hectares, respectively).
- The level of profitability, inadequate in 1998, turned into a loss in 1999. This indicates the lack of development and modernisation of agriculture, bringing about the depletion of assets in the case of both farm types.

If, by taking the national data as a base, we attempt to relate the most important points above to the two survey areas, we arrive at the following conclusions.

Estimated production value and farm income in the examined settlements

The size of farms cultivated privately	*Estimated*		*Counted on one farmer*			
	Production value/ ha, 1,000 HUF	Income/ Ha, 1000 HUF	Production value 1,000 HUF		Income 1,000 HUF	
			In the village of private farmers	In the co-operative village	In the village of private farmers	In the co-operative village
Under 1 ha.	200	60	27.5	23.6	8.3	7.1
1 to 5 ha.	150	40	366.4	354.1	97.7	94.4
5 to 10 ha.	120	30	804.0	842.0	201.0	210.5
10 to 20 ha.	100	30	1473.6	1361.0	442.1	408.3
Above 20 ha.	80	20	4,953.3	3,296.0	1,238.3	824.0
Average	*	*	1,389.6	262.8	361.9	80.6

Estimated farm and family income in the examined settlements

The size of farms cultivated privately	*Agricultural income/ producer, 1,000 HUF*		*agricultural income in the family's total income, %*		*Total family income/producer, %*	
	In the village of private farmers	In the co-operative village	In the village of private farmers	In the co-operative village	In the village of private farmers	In the co-operative village
Under 1 ha.	8	7	18.3	6.8	45	104
Between 1 and 5 ha.	98	94	21.4	16.3	456	581
Between 5 and 10 ha.	201	210	26.5	43.6	758	483
Between 10 and 20 ha.	442	408	48.2	37.5	918	1,089
Above 20 ha.	1,238	824	53.3	65.0	2,322	1,268
Average	362	81	31.9	14.6	1,135	551

*Agricultural income(income just from agriculture)
Producer and family income(income from agriculture and other activities outside agriculture)
HARTA is the cooperative village; SZAKMAR is characterised by private farms

Calculations made on the basis of the data of the two examined settlements, and those of the test-farms, indicate that the bottom line for independent farming to yield an acceptable income sits above 20 hectares in the two settlements. This is also supported by the findings of the study of people questioned about a source of income besides agriculture. Income relationships in the settlement with the large-scale cooperative are much more balanced than in that of private farmers. This is especially due to the more favourable employment opportunities and the approved and accepted land utilisation methods of the cultivation system.

5.4 A conclusive summary

A future solution for the physically undistributed, proportionally owned fields must be sought, observing the requirements of reasonable usage. A minimum requirement for land distribution must be at least 2-3 hectares, also its minimum width should be at least 20 m. One way to promote production is the increase of the leasing period and the strengthening of the durability and security of leasing relations, by encouraging long-term leasing through tax allowances, making the requirement of prudent land usage an objective to protect the owner and the leaseholder alike, etc.

It is only justified to start and support land consolidation where there are real opportunities to establish parcels the sizes of which are suitable for large-scale cultivation. In the case of smaller sizes and ownership proportions, other possibilities are to be sought, even for a temporary period. Such solutions could be:

- The organisation of proportion-owners into lease-out communities, granting them allowances.
- Preferences and protection to such organisations and for those leasing from them.
- Pre-emption rights should be granted to the proportion-owner with the greatest share to buy or even lease, in lands not reaching the minimum field size, except when the proportion-owner wishes to cultivate the land himself.

The Hungarian countryside is not in the position to initiate local organisations, unions or any kind of cooperative enterprises, which would be necessary for the development of agriculture, due to its difficult economic situation and the population's lack of activity. Therefore, only outside influences, such as the state and the EU, can be expected to take compelling and supportive steps in order to initiate local cooperatives. The resources of the government for subsidising 'new cooperatives' are insufficient. Compared to the present sum, much more money should be spent on this aim, as well as on the support of each form of cooperative.

In both survey settlements, but especially in Szakmár, several hundred hectares can be either temporarily flooded as former Danube bed, or, due to poor production capacity, basically unsuitable for economical cultivation. Only further analytical studies can resolve what can be the most favourable usage of these enclaves perhaps fish ponds, water-basins, grassland, forest, etc. The proximity of the Danube and the available canals make irrigation possible. A relatively large, but poorly utilised area is under irrigation today. Its enlargement is feasible by all means, and it should be accomplished parallel to the withdrawal of less suitable lands from food production. This way, the potential for agricultural production would not decrease; the structure could be modified by the improvement of irrigation for horticulture and seed production.

One important element in the modernisation concepts of the EU concerning agrarian policy is the strengthening of the multi-functionality of agricultural enterprises. This means companies, which are entitled with agriculture has to take on other activities to gain more income). This provides us with very important opportunities to 'branch out' into new opportunities. However, whether systems creating workplaces and improving local employment, such as the performance of shoe industrial processes functioning in Harta's Erdei Ferenc Co-operative fit the notion of multi-functionality should be clarified. If so, new opportunities can be explored in this direction with further analyses.

In both survey settlements there are large plains: grassy steppes unsuitable for agricultural production or even forestation. These steppes, however, would offer excellent opportunities for the development of horse-tourism, providing long-distance trekking with modern equipped stations, hotels, catering units etc., conjuring up the spirit of the land and its history.

With the development of a more dense system of canals, significant potential is provided for tourism, offering water sports and angling For this purpose, the Danube offers extraordinary opportunities, water quality will be vastly improved by the elimination of environmental burdening on the upper stretches of the river. Harta gives an excellent example of the rehabilitation of the Danube banks, and it is only lack of resources that hold up this work.

6 Summary and Conclusions

In conceptualising this report concerning the modernisation of agriculture and rural development we used our experience gained in structuring the Common Agricultural Policy, EU decree No 1257/1999, concerning the utilisation of *EAGGF (European Agricultural Guidance and Guarantee Fund)* and the Hungarian SAPARD *(Special Accession Programme for Agriculture and Rural Development)* programme. The main objectives for agriculture in the future are to: increase product quality and added value; increase profit and; reduce costs. We would like to set up better conditions to achieve these aims by modernising farms and corporation structures and protecting natural resources such as the fresh water supply.

In the past ten years, the main features of the changes in land ownership structure have been the following:

- In the process of the transition and ownership changes, the number of those entitled to land ownership grew significantly, irrespective of whether they were related to agriculture or wanted to pursue agricultural production on the land that was transferred to them. The ownership of a significant part of the land was transferred to a group of owners having only tenuous relations to land and agriculture, not having their primary employment in the agricultural sector.
- In the process of the land reform and transformation of property rights, the landowner and the owner of the non-land assets necessary for cultivation were also legally separated. A proportion of the new owners merely had land, and the others did not have enough land to farm using the existing means of production. It is clear that setting up the means of agricultural production today is vital, yet it is expensive, which has a negative effect on the economic sector, already deficient in capital.
- The changes, therefore, have created a dominance of private land ownership corresponding with the European Union practice, though they have formed a farm structure more fragmented than any so far, which has been accompanied by the separation of land ownership and land utilisation. According to the General Agricultural Survey of 2000, 90 percent of private farms work less than 5 ha of arable land. By different estimates, in the case of traditional crop production, at least 100 ha of land is needed for a full-time farming family.

In our opinion, the following tasks should be carried out in order to resolve the potential conflicts of land utilisation:

- Promotion of an efficient farm structure that involves consolidation, in order to establish viable sized farms, capable of incorporating modern technology.
- Supporting the selling of land, and the closing down of farms whenever it leads to the development of more viable production units.
- Providing a modernised process based on voluntary co-operation, i.e. to join forces in agricultural production and marketing, or even in the processing of products.
- Diversifying agricultural activities to connect them to other ways of creating income.
- Clearly defining and separating competitive agriculture from the social type of subsistence agriculture. This should be supported by different regulation systems. It is necessary for the Government to provide harmonised solutions, i.e. employment options for farmers. Only by defining rights, duties and responsibilities to property can the present tensions in Hungarian agriculture be eased.

- Paving the way for a well-established land consolidation, taking into account rural development and agro-environmental needs and requirements.

It is obvious that small-scale analytical projects such as the one performed here, carried out during the research in Harta and Szakmár, are not a suitable basis for national, economic generalisations. However, we think it would be useful for our findings to be used to inform further research on land consolidation initiatives in Hungary.

It is also necessary to emphasise the very important fact that agriculture, on its own, is not able to provide employment to the rural population of working age. Of the two researched settlements, the conditions for viable and effective cost-saving agriculture and viable farm sizes are to be found in Harta, but are absent in Szakmár. This raises the question of land ownership: in Harta, the opportunities for establishing a land market are more realistic, in Szakmár they are inadequate.

In order to establish a land market and to start land consolidation, beyond merely clarifying the principles related to minimum and viable sizes, the following are necessary:

- Local non-agricultural employment opportunities should be improved.
- Social problems of the elderly landholders should be solved, e.g. by enabling life-annuity supplementing land sales and by the granting of subsidies, thus encouraging sales.
- Preference should be given to land buyers who, on the basis of objective criteria, are able to meet the requirements of profitability i.e. land area, qualifications, farming plan, creditworthiness, local residence, etc.
- Those having leased out their land for at least 10 years**,** if they are elderly, should be helped in handing over their land by implementing incentives such as preferential pensions, it is also reasonable to favour enterprises leasing such land.

Based on the research and the review of the country's situation we propose that: (1) the country needs a clear and conspicuous agrarian policy. (2) A rural development policy, founded on a realistic, economic basis. These should be strongly inter-connected. Lacking this, the above local efforts cannot be successful and permanent and, particularly, they cannot set an example for other areas. All these, in brief, imply the following:

- A clear distinctive handling of the competitive and social fields, limiting agricultural development subsidies to the competitive field, and setting up social funds for the poor, aiming at subsistence of small producers.
- Creating a policy for the structural development of small unprofitable farms (from associations to the encouragement of land consolidation) by strengthening the durability of leasing relations.
- Creating viable field and farm sizes and the (legal regulation) of properties and, to some extent, the further changes of land lease within these limits.

The National Land Fund can fulfil its role as a consolidator, if the discriminating aspects of the policies for obtaining land are ended, and the conditions for profitable farming are created.

The Act on National Land Funds (NLF) should contain provisions concerning the operation of the Council of Land and Property Policy. This body would have consultative, and advisory functions in the strategic questions of land and property policies, and in decisions concerning the management of assets and the sale of land. The Council's members

would be constituted partly by representatives of the concerned ministries and pressure groups and partly by agricultural experts with knowledge of the area. The Council would be responsible for the national trend of resolving land issues and land consolidation. [18]

The material conditions for the planning and uninterrupted realisation of land and property are partly the allocation of the necessary budgets, and also the availability of a certain amount of land and assets, necessary for land exchange, and for creating modern viable plots. In the course of land accumulation, including purchase, exchange, acceptance of offers, dispossession, etc., the NLF is to evaluate the realistic land property claims existing in different regions of the country, as well as setting up the order in which consolidation claims are satisfied.

The NLF is to establish a professional background organization. The professional staff of the NLF would carry out its role under the supervision of the Advisory Council of Land and Property Policy. The Act on National Land Funds is to contain provisions on the institutionalisation of the above task.

[18] World Bank experts also recommend the establishment of an institutional system of the integrated national land and property policies. (See Dale, Baldwin, 1999:17-18.)

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7 Annexes

7.1 Annex 1: Acronyms and Abbreviations

AL	- Act of Land
CDPRS	- Complex Decentralised Property Sheet Registration System
CLC	- CORINE Land Cover Database
CLO	- County land Offices
CROPMON	- Crop Monitoring and Yield Estimation
DLM	- Department of Lands and Mapping of the Ministry of Agriculture and Rural Development
DLO	- District Land Offices
ELTE	- Eötvös Loránd University of Sciences
EUROGI	- European Umbrella Organization for Geographic information
FIG	- International Federation of Surveyors
FÖMI	- Institut of Geodesy, Cartography and Remote Sensing
HUF	- Hungarian Forint
IACS	- EU Integrated Administration and Control System
LIME	- Land Information Management for Executives
LISARD	- Land Information Service of Agriculture and Rural Development
LON	- Land Office Network of the Department of Lands and Mapping of MARD
MARD	- Ministry of Agriculture and Rural Development
MePAR	- Agricultural Land Parcel Identification and Administration System
NLF	- National Land Fund
NPAA	- National Programme Adopting the Acquis Communautaire
NSDI	- National Spatial DATA Infrastructure
OLLO	- Open Learning for Land Offices in Hungary
PARCELLA	- Agricultural Parcel Identification and Information System
SAPARD	- Special Accesion Programme for Agriculture and Rural Development
SDILA	- Staff Development in Land Administration
TAKARNET	- TAKAROS Network
TAKAROS	- Hungrian acronym for countywide map-based digital cadastre
TAMA	- Hungrian-German bilateral pilot project on "Computer-aided land consolidation"
UWH	- University of West-Hungry College on Geo-informatics
WAN	- Wide Area Network

7.2 Annex 2: Present legal environment

The present Hungarian legislation considering the very recent developments provides an efficient support to meet the requirements of the market-based economy and to face the challenge related to the features of the emerging information society .

- Act No. III of 1952 on Civil trials.
- Act No. IV of 1957 on general rules of Public Administration.
- Act No. IV of 1959 on Civil Law.
- Act No. II of 1992 on Co-operatives.
- Act No. LXIII of 1992 on the Protection of Personal Data and the Disclosure of Public Information.
- Act No. LV of 1994 on Fertile Land.
- Act No. XV of 1995 Subject: Amendment of Act on Committees of Land re-organisation.
- Act No. XXXVIII of 1995 Subject: Amendment of the Compensation Act (Act No. XXV of 1991.)
- Act No. LIII/1996 on Nature Protection.
- Act No. LXXVI of 1996 on Surveying and Mapping Activities.

  This Act was passed by the Parliament in late October 1996. The main aim of the act is to ensure that series of maps covering the whole area of the country, suitable for real property registration, geographic information systems, defence, as well as of various economic, scientific and social subjects are available. The legal measure also sets the rules as to what degree users of maps are to cover the costs of them. The act is supported by two Ministerial-level executive orders such as 16/19997 (III.5) FVM (FVM-Ministry of Agriculture and Regional Development) and 21/1997 (III.12) FVM-HM (HM - Ministry of Defence), and the order 63/1999(VII.21.) of FVM-HM-PM (PM-Ministry of Finance).
- The Parliament's Resolution No. 83/1997(IX.26.)OGY(Parliament) on Hungary's National Environmental Programme.
- Act No. CXLI/1997 on Land Registration and the related executive order 109/1999(XII.29.) of FVM.
- The Parliament's Resolution No. 35/1998(III.20.)OGY(Parliament) on the National Regional Development Concept.
- Government Decree No. 236/1998 (XII.30.) Korm.(Government) on registration of farmers as condition for receiving state aid. In the first year, 145, 000 private farmers registered for area-based aid. (7% of their applications have been controlled by satellite remote sensing by the FÖMI Remote Sensing Centre of MARD.
- Order 62/1999(VII.21) FVM on the detailed regulations of land classification.
- Government Decree No.184/1999(XII.13)Korm. On the detailed regulations of land use registration (by setting up and maintaining the Registry on Land Users at the Land Offices).
- Order 105/1999(XII.22) FVM on the detailed regulations of land classification.
- Government Decree No. 113/2000. (XII.27.) Korm. on the Registration of the Data Property of Public Administration.

The registration of public administration data property means having an information system capable of recording the sources of public interest data managed in public administration and the concepts related thereto, of free access to the key characteristics of data sources and related concepts on a public network as well as of querying the access information of data sources on the basis of such characteristics.

The typical data of statistical and administrative purpose data sources available at central public administration bodies and organisations controlled by such bodies as well as of concepts related thereto shall be uploaded into the public administration data property register (the initial loading of the data is 30 June 2002); the continuous updating of such data shall be assured, the resources, regulatory, organisational, professional and other prerequisites of the commencement and maintenance of such service shall be provided for. By this Governmental Resolution, the voluntary accession of all municipal and other public bodies to the public administration data property register shall be facilitated to the extent possible.

7.3 Annex 3: Questionnaire for the inhabitants of Harta and Szakmar Villages

Code of the family questioned
The head of the family is active
inactive
Number of family members active
pensioner
dependent
unemployed
Does the family pursue any agricultural activity?
Does the family cultivate only the land around the house?
What was the occupation of the head of the family before 1992?

The subscription of the family's agricultural production
Producer's status having primary producer's certificate
private entrepreneur or private farmer
full-time individual farmer
part-time individual farmer
other, with complementary production
other, with self supporting production
pensioner with complementary production
pensioner with self supporting production
Co-operative member, working in the co-operative
Employee in agriculture
Main profile of the agricultural production of the families
crop-production
livestock
orchard
mixed production
service
Data of land ownership and land usage (on arable land, gardens, orchards, vineyards, pasture)
Privately owned land
Number of plots
Distributed into private ownership
Undivided from private ownership
Leased out area
Number of plots
Area covered by cultivation contract
Leased area
Average distance to own plots
Does distance hinder cultivation?
Does distance mean significant cost increases?

Origin of land ownership
possessed self-cultivated land earlier
possessed land retrieved after 1992
land received during original compensation
received from members' land fund
acquired as co-operative proportion ownership
purchased in the meantime
inherited in the meantime
Intentions concerning future land use in private cultivation:
having it cultivated

leasing out
selling
additional leasing
additional purchase

Intentions concerning the concentration of plots into united blocks
In the case of proportion ownership, intentions to have it distributed
Willingness to exchange lands
Past attempts to exchange lands

Has the family raising animals?
How many cows, sows, hogs, poultry, etc., does the family rear?
Does the family produce animal feed, or do they buy it at the market/ in the shops?

Do you have a production contract?
If so, are you satisfied with the production contract?
Amount of privately sold part of production (%)
Amount of production sold within the production contract (%)
Do you have a connection with the co-operative?
What is your opinion about the co-operative?
Do you employ services in production?

Do you employ services in: cultivation?
transportation?
harvesting?
other?

Who provides the services?

Percentages of the income of the family of:

private agricultural production
cultivation contract
fees from services carried out
fees from leasing
total

In the past years has agricultural production:

increased
decreased
remained constant?

Do you think incomes from agricultural production can be increased?
Do you think incomes from leasing can be increased?
Are you satisfied with the cultivation contract?
Percentage of produce sold in

plant cultivation
animal breeding
horticulture

Other remarks:

7.4 Annex 4: Accompanying statistics

Demographic indicators of the two examined settlements

Year	Settlement	Population	Live birth	Mortality	Natural increase	Number of houses	Number of new houses	Number of primary school classes	Number of primary school students	Number of primary school teachers	Number of retail shops
1970	**Harta**		66	50	16		26	18	559	37	19
1980		4,315	52	60		1,529	41	22	538		23
1990		4,030	40	50	-10	1,623	13	24	547	39	21
1992		3,914	39	51	-12	1,639	3	24	488	38	64
1995		3,952	33	54	-21	1,648	7	24	449	33	68
1998		3,820	25	49	-24	1,651	2	26	426	30	57
1970	**Szakmár**		32	50	-18		6	10	332	22	9
1980		2,584	29	46		923	13	12	232		9
1990		1,545	21	39	-18	637	3	9	195	17	11
1992		1,488	23	21	2	650	-	8	153	15	17
1995		1,480	14	18	-4	652	1	8	143	15	20
1998		1,463	9	26	-17	651	-	8	140	14	16
1970	**Parishes together**		5,341	4,922	419		2,213	1,331	43,136	2 ,61	1,195
1980		338,059	4,216	5,461		127,103	1,963	1,279	36,156		1,175
1990		255,789	3,088	4,287	-1,199	104,118	932	1,246	27,177	2,147	1,189
1992		250,358	3,115	4,313	-1,198	106,432	577	1,265	25,137	2,142	2,859
1995		223,825	2,451	3,870	-1,419	96,088	430	1,171	20,970	1,892	2,845
1998		201,193	1,851	3,306	-1,455	88,622	197	1,118	19,150	1,709	2,345
1970	**County together**		8,235	7,243	992		3,939	1,853	63,669	3,562	1,853
1980		568,903	7,746	8,383		205,219	4,745	1,978	61,925		2,051
1990		544,748	6,956	8,248	-1,292	216,214	2,264	2,463	60,153	4,645	2,257
1992		540,776	6,730	8,323	-1,593	221,193	1,223	2,525	56,295	4,604	7,024
1995		539,722	6,099	8,433	-2,334	224,128	1,270	2,607	53,698	4,489	9,375
1998		534,290	5,098	8,042	-2,944	227,132	830	2,688	54,262	4,409	7,906

Source: Bács-Kiskun megye Statistical Yearbook KSH, Hungary, 1970, 1980, 1990, 1992, 1995,1999

The main characteristic data of agricultural land ownership and land usage in Harta and Szakmár in June 2000

Name			Number of families	The head of the family is		Number of family members	Number of those involved in agricultural production	Producer's status		
				active	inactive			having primary producer's certificate	private entrepreneur or private farmer	pensioner
Szakmár	Based on the size of privately owned area	under 1 hectare	9	3	6	28	6	5	1	5
		between 1 and 5 hectares	27	9	18	81	27	24	4	14
		between 5 and 10 hectares	14	4	10	35	14	12	2	8
		between 10 and 20 hectares	11	5	6	37	11	11	5	2
		above 20 hectares	5	3	2	17	5	3	3	2
		total	66	24	42	198	63	55	15	31
Harta		under 1 hectare	24	11	13	68	13	13	0	4
		between 1 and 5 hectares	36	20	16	104	34	32	1	13
		between 5 and 10 hectares	37	15	22	109	34	34	2	19
		between 10 and 20 hectares	21	11	10	53	21	18	3	10
		above 20 hectares	13	7	6	42	12	12	1	6
		total	131	64	67	376	114	109	7	52
Szakmár	Based on the size of privately cultivated area	under 1 hectare	12	3	9	30	9	4	1	7
		between 1 and 5 hectares	21	6	15	60	21	20	3	11
		between 5 and 10 hectares	10	4	6	31	10	10	2	5
		between 10 and 20 hectares	11	4	7	39	11	11	3	4
		above 20 hectares	12	7	5	38	12	10	6	4
		total	66	24	42	198	63	55	15	31
Harta		under 1 hectare	92	42	50	253	76	72	2	37
		between 1 and 5 hectares	21	12	9	65	21	21	0	9
		between 5 and 10 hectares	8	4	4	22	7	8	2	3
		between 10 and 20 hectares	5	2	3	16	5	5	0	3
		above 20 hectares	5	4	1	20	5	3	3	0
		total	131	64	67	376	114	109	7	52
	Sum-total		197	88	109	574	177	164	22	83

The main characteristic data of agricultural land ownership and land usage according to the survey carried out in Harta and Szakmár in June 2000

Name			Privately owned land, hectares		Number of plots, piece		Distributed into private ownership		Undivided from private ownership		Leased out area, hectares		Area covered by cultivation contract	
			arable land	total	arable land	total	arable land	total	arable land	total	arable land	total	arable land	Total
Szakmár	Based on the size of privately owned area	Under 1 hectare	0.2	1.25	1	8								
		between 1 and 5 hectares	67.6	72.4	47	56	29.5	32	5	6	11.5	11.5		
		between 5 and 10 hectares	85.5	88.5	37	39	34	40			20.5	20.5		
		between 10 and 20 hectares	138.3	153.3	33	38	92.7	107.7				6		
		Above 20 hectares	216	241	20	22	178	178			17	17		
		Total	507.6	556.45	138	163	334.2	357.7	5	6	49	55		
Harta		Under 1 hectare	4	4.74	8	12	4	4.54			3	3		
		between 1 and 5 hectares	88.6	91.08	57	68	63.3	64.78	12.5	13	39.9	39.9	36.2	36.2
		between 5 and 10 hectares	236	247.04	89	106	173.4	176.64	46.6	59.9	61.5	61.5	142	142
		between 10 and 20 hectares	249	279.3	93	109	177	179.05	15	39	56	62	115	115
		Above 20 hectares	336	386.85	66	81	207	227.95	79	95	35	37.6	262	262
		Total	913.6	1009.01	313	376	624.7	652.96	153.1	206.9	195.4	204	555.2	555.2
Szakmár	Based on the size of privately cultivated area	Under 1 hectare	21.7	22.95	8	16	6	12	1	1	21.5	21.5		
		between 1 and 5 hectares	52.1	55.7	36	43	16.2	18.7	4	4	10.5	10.5		
		between 5 and 10 hectares	44.7	57.7	26	32	12.5	22.5				6		
		between 10 and 20 hectares	109.1	110.1	31	32	76.5	76.5		1				

		above 20 hectares	280	310	37	40	223	228			17	17		
		Total	507.6	556.45	138	163	334.2	357.7	5	6	49	55		
Harta		under 1 hectare	476.6	488.96	169	204	290.1	294.31	90.3	94.3	173.4	179	300.8	300.8
		between 1 and 5 hectares	204.8	235.87	76	93	159.4	162.47	31.8	54.6	8	11	181.4	181.4
		between 5 and 10 hectares	90.2	104.13	20	26	65.2	66.13	25	44	10	10	43	43
		between 10 and 20 hectares	78	90.05	22	25	53	53.05	6	8	4	4	21	21
		above 20 hectares	64	90	26	28	57	77		6			9	9
		Total	913.6	1009.01	313	376	624.7	652.96	153.1	206.9	195.4	204	555.2	555.2
	Sum-total		1421.2	1565.46	451	539	958.9	1010.66	158.1	212.9	244.4	259	555.2	555.2

The main characteristic data of agricultural land ownership and land usage according to the survey carried out in Harta and Szakmár in June 2000

Name			Leased area		Privately cultivated area	Total privately cultivated area and area covered by cultivation contract	Average distance of arable plots	Does distance hinder cultivation?		Does distance mean significant cost increase?	
			arable land	total				yes	no	yes	no
Szakmár	Based on the size of privately owned area	under 1 hectare	25.3	25.5	26.75	26.75	2.0	0	7	0	7
		between 1 and 5 hectares	57.6	57.6	118.5	118.5	3.1	2	24	10	15
		between 5 and 10 hectares	45	95	163	163	3.4	3	10	7	5
		between 10 and 20 hectares	94	94	241.3	241.3	5.9	4	7	6	4
		above 20 hectares	251.5	251.5	475.5	475.5	4.2	0	5	1	4
		total	473.4	523.6	1025.05	1025.05	3.9	9	53	24	35
Harta		under 1 hectare	1.6	1.6	3.34	3.34	4.2	2	10	4	8
		between 1 and 5 hectares	1.1	1.1	16.08	52.28	5.9	2	33	9	26
		between 5 and 10 hectares	20	20	63.54	205.54	7.1	3	33	7	28
		between 10 and 20 hectares	107	107	209.3	324.3	10.0	6	15	12	9
		above 20 hectares	11	11	98.25	360.25	9.9	2	11	6	7
		total	140.7	140.7	390.51	945.71	7.5	15	102	38	78
Szakmár	Based on the size of privately cultivated area	under 1 hectare		0.2	1.65	1.65	3.0	1	7	1	6
		between 1 and 5 hectares	6.1	6.1	51.3	51.3	2.9	0	21	6	14
		between 5 and 10 hectares	15.3	15.3	67	67	2.2	1	9	4	6
		between 10 and 20 hectares	52	52	162.1	162.1	4.0	3	8	6	4
		above 20 hectares	400	450	743	743	6.7	4	8	7	5
		total	473.4	523.6	1025.05	1025.05	3.9	9	53	24	35
Harta		under 1 hectare	1.6	1.6	10.76	311.56	6.6	7	71	18	60
		between 1 and 5 hectares	6.1	6.1	49.57	230.97	9.5	3	18	9	12
		between 5 and 10 hectares	5	5	56.13	99.13	4.1	1	7	3	4
		between 10 and 20 hectares	3	3	68.05	89.05	8.2	1	4	4	1
		above 20 hectares	125	125	206	215	15.0	3	2	4	1
		total	140.7	140.7	390.51	945.71	7.5	15	102	38	78
	Sum-total		614.1	664.3	1415.56	1970.76	6.3	24	155	62	113

The main characteristic data of agricultural land ownership and land usage according to the survey carried out in Harta and Szakmár in June 2000.

Name			Origin of land ownership							Intentions concerning future land usage					
			possessed self-cultivated land earlier	Possessed land retrieved after 1992	land received during original compensation	received from members' land fund	acquired as co-operative proportion ownership	purchased in the meantime	inherited in the meantime	private cultivation	having it cultivated	leasing out	sale	additional leasing	additional purchase
Szakmár	Based on the size of privately owned area	under 1 hectare	3	1	0	0	0	0	0	6	1	0	0	0	0
		between 1 and 5 hectares	4	1	4	12	1	4	16	13	15	6	1	1	0
		between 5 and 10 hectares	3	3	5	6	2	5	6	8	4	3	1	0	1
		between 10 and 20 hectares	0	3	4	8	2	5	5	11	2	1	0	2	2
		above 20 hectares	1	1	3	1	1	1	3	5	0	0	0	1	1
		total	11	9	16	27	6	15	30	43	22	10	2	4	4
Harta		under 1 hectare	3	0	0	0	5	3	1	7	2	5	0	0	1
		between 1 and 5 hectares	0	1	5	0	25	14	10	13	14	19	0	1	6
		between 5 and 10 hectares	4	1	6	5	31	11	18	10	24	11	0	0	2
		between 10 and 20 hectares	1	2	6	3	19	13	10	10	16	5	2	1	4
		above 20 hectares	2	1	7	5	9	8	5	6	11	2	0	2	5
		total	10	5	24	13	89	49	44	46	67	42	2	4	18
Szakmár	Based on the size of privately cultivated area	under 1 hectare	5	2	0	1	1	0	2	4	0	4	1	0	0
		between 1 and 5 hectares	4	2	4	8	2	3	11	9	15	5	0	0	0
		between 5 and 10 hectares	1	0	5	5	0	4	5	8	3	0	0	1	1
		between 10 and	0	2	4	6	1	3	5	11	2	0	1	1	1

		20 hectares												
		above 20 hectares	1	3	3	7	2	5	7	11	2	1	0	2	2
		total	11	9	16	27	6	15	30	43	22	10	2	4	4
Harta		under 1 hectare	8	2	12	8	58	26	24	22	44	37	1	1	9
		between 1 and 5 hectares	1	1	6	3	15	13	10	11	14	2	1	1	3
		between 5 and 10 hectares	0	0	1	1	6	5	5	4	4	2	0	1	2
		between 10 and 20 hectares	1	1	3	0	5	3	2	4	3	1	0	0	1
		above 20 hectares	0	1	2	1	5	2	3	5	2	0	0	1	3
		total	10	5	24	13	89	49	44	46	67	42	2	4	18
	Sum-total		21	14	40	40	95	64	74	89	89	52	4	8	22

The main characteristic data of agricultural land ownership and land usage according to the survey carried out in Harta and Szakmár in June 2000.

Name			Intentions concerning the concentration of plots into united blocks		In the case of proportion ownership, intentions to have it distributed		Willing to exchange lands		Past attempts to exchange lands		Do you have production contract?	
			yes	no	yes	no	yes	no	yes	no	yes	no
Szakmár	Based on the size of privately owned area	under 1 hectare	1	5		0	0	5	0	2	2	6
		between 1 and 5 hectares	5	17	0	2	2	18	1	13	6	20
		between 5 and 10 hectares	5	8	1	1	4	7	1	9	4	10
		between 10 and 20 hectares	7	4	0	2	3	4	0	4	9	2
		above 20 hectares	0	5	0	1	0	3	1	0	5	0
		total	18	39	1	6	9	37	3	28	26	38
Harta		under 1 hectare	1	10	0	3	2	7	1	8	1	11
		between 1 and 5 hectares	7	29	5	16	7	27	1	33	16	20
		between 5 and 10 hectares	12	24	3	16	6	30	3	33	23	14
		between 10 and 20 hectares	7	14	2	12	5	15	1	19	17	4
		above 20 hectares	7	6	2	8	6	6	2	10	11	1
		total	34	83	12	55	26	85	8	103	68	50
Szakmár	Based on the size of privately cultivated area	under 1 hectare	0	8		0	0	8	0	6	1	9
		between 1 and 5 hectares	2	16	0	2	1	15	0	10	3	18
		between 5 and 10 hectares	4	6	0	1	4	2	0	5	1	9
		between 10 and 20 hectares	7	3	0	1	3	6	1	4	10	1
		above 20 hectares	5	6	1	2	1	6	2	3	11	1
		total	18	39	1	6	9	37	3	28	26	38
Harta		under 1 hectare	17	61	7	35	14	61	3	72	40	39
		between 1 and 5 hectares	10	11	2	10	6	14	1	19	17	4
		between 5 and 10 hectares	3	5	2	3	3	5	2	6	3	5
		between 10 and 20 hectares	2	3	0	5	2	3	1	4	4	1
		above 20 hectares	2	3	1	2	1	2	1	2	4	1
		total	34	83	12	55	26	85	8	103	68	50
	Sum-total		52	122	13	61	35	122	11	131	94	88

The main characteristic data of agricultural land ownership and land usage according to the survey carried out in Harta and Szakmár in June 2000.

Name			Amount of privately sold part of production (%)	Amount of production sold within production contract (%)	Do you employ services in production ?		Do you employ in production			Percentages in the income of the family of				
					yes	no	cultivation	Transport	harvesting	private agricultural production	cultivation contract	fees from services carried out	fees from leasing	total
Szakmár	Based on the size of privately owned area	under 1 hectare	82.00	0.00	5	4	4	0	2	22.8	0.0	0.0	0.0	22.8
		between 1 and 5 hectares	76.00	0.00	26	1	21	19	25	23.5	0.0	0.0	0.6	24.1
		between 5 and 10 hectares	66.67	0.00	13	1	7	6	10	32.5	0.0	13.3	12.1	58.0
		between 10 and 20 hectares	51.11	0.00	11	0	2	6	10	50.0	0.0	0.0	0.0	50.0
		above 20 hectares			4	0	0	2	5	52.0	0.0	0.0	0.0	52.0
		total	69.53	0.00	59	6	34	33	52	31.9	0.0	1.6	3.0	36.5
Harta		under 1 hectare	85.56	11.11	6	6	6	4	3	14.0	0.0	0.0	0.8	14.7
		between 1 and 5 hectares	51.00	48.00	22	14	22	16	19	11.6	9.0	0.0	4.0	24.6
		between 5 and 10 hectares	21.35	76.77	29	7	28	26	27	13.1	11.9	0.0	3.7	28.7
		between 10 and 20 hectares	29.70	59.00	17	3	15	16	16	22.5	22.2	1.3	3.2	49.1
		above 20 hectares	44.23	54.23	13	0	12	12	12	16.3	31.2	0.0	0.0	47.4
		total	40.53	55.71	87	30	83	74	77	14.6	14.3	0.2	3.0	32.1
Szakmár	Based on the size of privately cultivated area	under 1 hectare	77.50	0.00	6	6	6	1	0	18.3	0.0	0.0	9.4	27.8
		between 1 and 5 hectares	75.00	0.00	21	0	18	17	21	21.4	0.0	0.0	0.6	22.1
		between 5 and	76.67	0.00	10	0	4	4	10	26.5	0.0	0.0	0.0	26.5

		10 hectares											
		between 10 and 20 hectares	52.86	0.00	11	0	3	4	11	48.2	0.0	0.0	0.0	48.2
		above 20 hectares	54.00	0.00	11	0	3	7	10	53.3	0.0	10.0	0.0	63.3
		total	69.53	0.00	59	6	34	33	52	31.9	0.0	1.6	3.0	36.5
Harta		under 1 hectare	33.11	64.20	53	26	53	46	46	6.8	12.7	0.0	4.1	23.5
		between 1 and 5 hectares	40.95	57.67	19	1	20	16	18	16.3	23.1	0.0	0.1	39.4
		between 5 and 10 hectares	74.17	14.17	7	1	6	6	7	43.6	15.7	0.0	3.1	62.4
		between 10 and 20 hectares	52.00	38.00	4	1	1	3	3	37.5	12.0	0.0	0.7	50.2
		above 20 hectares	70.00	20.00	4	1	3	3	3	65.0	0.5	4.0	0.0	69.5
		total	40.53	55.71	87	30	83	74	77	14.6	14.3	0.2	3.0	32.1
	Sum-total		49.70	38.10	146	36	117	107	129	21.1	11.4	0.5	3.0	36.0

The main characteristic data of agricultural land ownership and land usage in Harta and Szakmár in June 2000.

Name			In the past years agricultural production			Do you think incomes from agricultural production can be increased?		Do you think incomes from leasing can be increased?		Are you satisfied with cultivation contracts?		Percentage of produce sold in		
			increased	decreased	remained constant	yes	no	yes	no	yes	no	plant cultivation	animal breeding	horticulture
Szakmár	Based on the size of privately owned area	under 1 hectare	1	7	2	3	5	0	3	0	0	37.5	20.6	0.0
		between 1 and 5 hectares		17	9	7	17	1	12	0	0	21.5	61.1	5.0
		between 5 and 10 hectares	2	4	7	6	7	0	7	0	0	39.2	58.8	0.0
		between 10 and 20 hectares	2	7	2	7	3	0	9	0	0	60.5	68.8	0.0
		above 20 hectares	3	2		3	2	0	3	0	0	94.0	58.3	0.0
		total	8	37	20	26	34	1	34	0	0	41.7	55.9	2.2
Harta		under 1 hectare		7	4	3	7	1	5	1	1	72.2	48.9	0.0
		between 1 and 5 hectares	3	18	9	21	10	3	20	11	5	65.7	17.8	0.0
		between 5 and 10 hectares	1	24	10	25	4	1	11	22	2	68.8	20.0	0.1
		between 10 and 20 hectares	2	13	5	15	4	2	9	11	2	86.4	13.6	0.0
		above 20 hectares	4	7	1	8	4	0	6	10	2	95.4	18.0	0.0
		total	10	69	29	72	29	7	51	55	12	74.4	21.0	0.0
Szakmár	Based on the size of privately cultivated area	under 1 hectare		7	5	1	9	0	7	0	0	21.0	9.5	0.0
		between 1 and 5 hectares		13	7	5	14	0	10	0	0	16.4	60.0	0.5
		between 5 and 10 hectares	1	6	3	7	2	1	3	0	0	40.0	68.0	0.0
		between 10 and 20 hectares	1	6	4	5	5	0	6	0	0	58.2	78.0	12.0
		above 20 hectares	6	5	1	8	4	0	8	0	0	74.6	62.2	0.0
		total	8	37	20	26	34	1	34	0	0	41.7	55.9	2.2
Harta		under 1 hectare	4	46	19	42	23	6	35	36	8	68.5	17.6	0.0
		between 1 and 5 hectares	3	10	7	18	3	1	7	13	3	97.1	11.9	0.0
		between 5 and 10 hectares	1	5	2	6	0	0	4	2	0	56.3	37.5	0.0
		between 10 and 20 hectares		4	1	2	2	0	3	3	0	80.0	27.5	0.0
		above 20 hectares	2	4		4	1	0	2	1	1	90.0	65.0	0.0
		total	10	69	29	72	29	7	51	55	12	74.4	21.0	0.0
	Sum-total		18	106	49	98	63	8	85	55	12	63.6	35.5	0.7