

## **Dealing with Central European land fragmentation**

A critical assessment on the use of Western European instruments

T. van Dijk, Ph.D.

Delft University of Technology, the Netherlands

T.vanDijk@geo.tudelft.nl

This is a summary.

The original book can be purchased with reference to ISBN 90-5166-996-8

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### **Introduction and research question**

Ownership of agricultural land is highly fragmented in Central Europe. Western European countries in the past have faced fragmentation of similar severity. This thesis explores the possibilities for transplanting Western instruments to Central Europe.

Agriculture is often mistaken for a conservative and static part of economy. This certainly does not apply to Central European agriculture. To the socialists, land was an asset that belonged to the community and as such it should not be in private hands. The implementation of this ideology did not mean a disruption of a tradition comparable to modern Western land ownership concepts *per se*, since private rights on land in concept are quite recent indeed. Nowadays, private land ownership prevails in Central Europe. After the fall of the iron curtain, agricultural land was privatised.

The subject of how to deal with land fragmentation was made topical around the turn of the millennium by FAO, that held a survey in order to define the nature of the problem. The enlargement of the European Union raised the urgency of making amends. The enlargement is a challenge because enlargement may jeopardise decision-making but may lead to an explosion of the claims on structural funds as well. The simultaneous modification of EU agricultural policy and Central European adjustments to agriculture makes it hard to find solutions. Even before the actual accession, EU has invested billions of euro's to make the Central European applicant countries ready for joining.

The developments in land ownership in Central Europe can be divided into three phases: collectivisation, privatisation and facilitating private farming. The first two phases are covered by a host of thorough studies. The third is currently in progress and is the focus of this thesis. It is assumed that ongoing problems of privatisation, that still exist, are dealt with eventually.

Throughout literature, the reference 'Central Europe' may have several geographical definitions. Here, the common narrow geographical definition is used: Poland, Hungary, Slovakia, the Czech Republic, Romania and Bulgaria.

The study explicitly involves Western knowledge under the – to be debated – assumption that Western experience on similar problems can be useful in Central Europe, especially given the parallel development until 1945. The starting position for this thesis is that there is no need to re-invent the wheel. The perspective is

foremost on policy instruments and on strategic choices, in the last chapter complemented with operational considerations.

The research question is formulated as follows:

*To what extent can Western European fragmentation-reducing instruments provide solutions for the fragmentation of Central European agricultural land?*

The fact that this thesis is confined to the land fragmentation problem does not mean that the thesis claims it to be the only of the most important problem of Central European agriculture. Land is only one means of production and it takes more than land alone to run a competitive farm.

From the start, a rigid quantitative research method – like surveys and experiments – was not considered to be an option. The method had to allow room for adjustments resulting from new insights gathered during the research, thus clearly demanding a case study approach. For overviews of an array of countries, the thesis relies on papers and articles from academic literature, preferably of local experts, as well as statistics. In addition, interviews were held with local experts, especially those that were interested in questions relevant to the research question mentioned here.

The number of countries involved in the study has been limited, however with the intention to derive more generally applicable statements. From the Central European region, Hungary and Bulgaria were studied, since they are opposites in terms of collectivisation history, privatisation and general economic development. The Western European case study countries are the Netherlands and Bavaria, since they have a long-standing history of land consolidation although the applied instruments differ considerably.

### **Conceptual framework**

Strictly speaking, fragmentation is derived from ‘fragment’, which in general refers to an incomplete part, or a piece that is detached or isolated from a whole it originally belonged to. Fragmentation of land generally addresses the parcelling (a physical characteristic) or the legal claims on land (invisible), two layers that in theory can be totally different. Fragmentation can be considered on various levels of scale. The scale determines what is the ‘whole’. Four types of land fragmentation are used in this thesis: fragmentation (1) of land ownership, (2) of land use, (3) within a farm, and (4) separation of ownership and use.

Fragmentation has a number of positive effects. Apart from ecological and scenic advantages, in farming fragmentation can be valued for reducing the risk of all crop being destroyed by disease or extreme weather. Some types of farming also need spatially separated parcels so they can be used for various agricultural purposes.

The negative effect of use-fragmentation and internal fragmentation is that it raises the production costs and lowers the total yield that the land produces. Namely, larger parcels need less time for cultivation and have relatively little loss of space and yield along the borders. Ownership fragmentation leads to separation of ownership and use, which in turn results in tenancy – which is relatively expensive and impedes making proper investments.

But under what conditions and to whom precisely does fragmentation become a problem can not be determined since fragmentation is not a matter of black and

white. In Western Europe, the trigger for actively reducing fragmentation was that the standard of living in cities was considerably higher than in rural areas, the rural population was aware of this and fragmentation was believed to be an obstacle for levelling this difference. This implies that no fixed figures or calculations can be given with which a farm can be labelled 'fragmented'. Moreover, the urge to reduce fragmentation can vary widely between a farmer, a regional politician, an EU official and someone that has a comprehensive image of world food security.

The second keyword in this thesis is 'instrument', that in this context relates to public policy. Instruments are subject to policy and can be a package of legal, financial and communicative components. Here we assume that policy is made through rationally confronting society's preferences and all policy alternatives and selecting the policy that will probably be the most efficient.

How do these matters blend in the conclusions? This book gives a general Central European overview of fragmentation (Ch. 3) which illustrates the different guises of fragmentation and their emergence. In the two case studies (Ch. 5) the core of the problem is sought, with special attention to private farming. On the other hand an inventory is presented of Western instruments for improvement of farming structure (Ch. 4). The instruments in the Western case study countries are analysed in more detail (Ch. 6). The conclusions (Ch. 8) are supported by three 'pillars': the analysis that leads us to the core of Central European fragmentation (Ch. 5.5), the strategic balancing of problems goals and prerequisites in both regions (Ch. 6.6), and operational considerations (Ch. 7).

### **The Central European situation**

As a consequence of socialist policy between 1945 and 1990, private ownership as well as private revenues had to be replaced by communal farms that would allow equal distribution of wealth. These large-scale production-units came in two types: collective farms and state farms. The establishment of collectives involved transferring only part of the rights from the owners to the collective; the right to use and the right to alienate. Farm workers in collective farms were remunerated at the end of the year with a return on their inputs, based on the performance of the collective farm. Besides these large production-units, where the actual production took place, all systems allowed small personal plots for the workers. The state farms, collective farms and personal plots were in fact three degrees on government regulation of land tenure, which varied in importance throughout Central Europe.

Although the socialist logic of equal distribution of wealth is commonly known, a number of persistent misconceptions have emerged among outsiders. Private ownership, in contrast to common thinking, was not erased after 1945. Socialism meant a continuous redistribution and redefinition of property rights that differed in each country, and many landowners never lost their title to land, despite collective management. Another misconception is that collectivised agriculture was uniform throughout the region, but in reality collectivisation proceeded in quite different ways, on different timetables and with different consequences. And collectivised agriculture was not a failure either; some regions were very successful in farming and achieved growth levels that were equal or higher than in Western Europe.

The early 1990s brought Central Europe a transition from a centrally planned to a market economy, which involved privatising agricultural land. Most Central European countries chose to restitute (implies returning the land to the original owners) collective farm land. Distribution (giving original owners a new piece of land) is applied for part of the collective farm land in Hungary and Romania. State-farm land was usually leased pending sale. Only in Hungary compensation (giving money or vouchers in return for lost assets) is applied for part of the state-farmland.

Most important in choosing from the various ways of privatisation was the legal ownership status at the outset of the reforms. Private ownership underlying collectively used land was restored. Another important factor was how this choice would affect land ownership among ethnic groups, a factor that made the Poles decide not to restitute the land of state farms. In addition, when an elite had control over land prior to collectivisation, the demand for historical justice was overruled by a cry for social equity.

The success of actually replacing large-scale communal farming with small-scale private farming proves to be higher when (1) collective farming was little productive, (2) collective farming was labour intensive, (3) a large share of employment was in agriculture and (4) the costs of leaving the collective were low. Privatisation directly resulted in the current excessive fragmentation. Part of the privatisation is not fully completed yet. Full privatisation means assessing validity, physical determination of claims and transferring a certificate of full ownership, but figures on the proceeds of privatisation can ignore the importance of the latter steps.

As said, the current fragmentation differs strongly across the region. As an indication, let us take into account the importance of private land use. In Poland, private farms use 76% of all agricultural land in farms of on average 6.3 ha (50% under 5 ha). In Bulgaria these figures are 53% and 1.48 ha (86% under 1 ha), in Romania 52% and 1.94 ha (40% under 1 ha). The other three countries clearly differ: only 17% of Hungarian land is used by private farms, in units of 0.81 ha (but with 42% over 10 hectares) and in the Czech Republic and Slovakia it is even less dominant.

Before turning to the instruments, as means of actively improving farming structures, it is useful to explore the possibility of spontaneous improvement. Spontaneous improvement depends on the level of activity on the land market, combined with small parcels being merged into larger units, two factors that in turn depend on economic growth and liberal agricultural policy respectively. We cannot be certain that either one will be the case in the near future.

### **Instruments for reducing fragmentation**

When a government faces fragmentation and decides to correct it, two strategies are at hand. One way to act is by stimulating forces of spontaneous improvement. During the second half of the twentieth century, Western European countries have applied the second strategy: applying specific policy instruments. When observing the Western instruments, it is important to bear in mind that in that region, fragmentation had resulted from growth in rural population and – depending on heritage legislation – the splitting up of farms. Three instruments

have been used to directly address fragmentation of agricultural land: land banking, land consolidation and voluntary parcel exchange.

A farmer that wants to expand his property has to overcome a key constraint on agricultural land tenure, namely that all farms are enclosed by other people's private ownership. The fact that land is finite discerns it from other means of production, and it has high transaction costs as well. The deadlock can be avoided by introducing a new type of player on the land market; an owner that is interested in distributing its land to surrounding farmers. This buffer, a land fund, can be an instrument for agricultural policy.

The possibilities of applying land funds for policy purposes ('land banking') depend on the degree of concentration. When land funds are massive units, farmers will have to move there in order to be able to expand their farms. When land funds consist of many small units throughout the country, it will be easier to improve existing structures.

The second instrument is land consolidation, a term that should be read here in its neutral meaning, i.e. a locally supported voluntary procedure for establishing a new spatial allocation of ownership and/or use within a predefined rural area. It is the project-wise improvement of all physical limitations on agricultural production.

Land consolidation projects typically involve several hundreds of participants, which lead to adopting a majority-rule that can force a stalling minority to cooperate for the sake of the project as a whole. The concept has been used for many ages, but legal provisions emerged around 1900 in most countries. Initially, this instrument aimed at increasing agricultural productivity, but after 1945 considerations of nature and environmental conservation and regional development respectively gained weight.

The voluntary exchange of parcels between three or more owners, thus resulting in improved parcelling, however without changing their shape and size is called voluntary land exchange. A limitation to the application of this instrument is the low level of complexity of problems that can be dealt with. The Hungarian Act on Land explicitly provides in voluntary parcel exchange already.

A number of drawbacks for applying these Western instruments in Central Europe can already tentatively be listed. Perhaps the most crucial discrepancy is the unfavourable economic situation in Central Europe that impedes the outflow of labour from agriculture. Equally complicating is the widespread absentee-ownership of agricultural land. In addition, land ownership is emotionally charged, instead of the economical approach that dominates in Western Europe. Infrastructure may have to be adapted in order to facilitate farming in smaller units and unfinished privatisation matters may locally block any change in the legal situation.

In the Central European region, attempts and systems have emerged that allow farmers to cope with the fragmented situation. Poland, the Czech Republic and Slovakia have legal land consolidation in place that is not very active though. Quite vital are the informal consolidation efforts that on a limited scale rearrange land use rights on a yearly basis. Particularly in Romania and Bulgaria, these informal consolidations are popular.

## **Farms and land in Hungary and Bulgaria**

For the Central European case study countries, let's have a closer look into the actual problem, without making the mistake to concentrate on symptoms instead. Hungary is the plainer of the two, and the smaller as well with more inhabitants than Bulgaria has. Bulgaria is warmer and more arid.

Hungarian privatisation was a mix of several mechanisms that applied to the various types of claimants. It was completed relatively swiftly, since it was finalised mid 1994. The total number of landowners had exploded, but the large-scale farms for the greater part continued to exist after internal reorganisations. In contrast, the Bulgarian privatisation was changed many times during the process due to several elections that kept inverting the power balance in the national government. This made the process slow and hard to comprehend, and resulted in many legally complex cases as well.

In Hungarian agriculture, arable and mixed farms are dominant. Although 86% of the land is privately owned in small plots, only 54% is actually cultivated by private farmers. The gap between private ownership and private use is particularly large in the large enterprises (one-third of enterprises measures over 100 ha) that lease parcels from numerous owners and exploit them as contiguous units. The trend in private farming is positive – there is growth in total acreage and average size as well – but slow. The presence of the large number of farms under 1 hectare in size is mainly a matter of statistically defining 'farm'. The Hungarian rural population is aged and decreasing.

The southern Bulgarian climate facilitates the growth of more exotic crops. The developments after 1990 led to a sudden reduction in labour-intensive agricultural activity. The recent statistics that are available on Bulgarian agriculture fail to provide a clear image of the situation on private farms, since enterprises and privates are not specified separately. There are signs of positive trends in private farming. Ageing and depopulation of rural Bulgaria is troublesome and has its roots in the socialist urbanisation policy. Irrigation is required to enable farming in a large part of the country and needs consideration in the process of restructuring agriculture.

The limited data that are available on how fragmentation is affecting every-day farm management indicate that in Hungary internal fragmentation of private farms is not alarming. Large distances between parcels are only felt disadvantageous by the larger farmers. Lease plays an important role among private farms, for consolidation and for creating large private farms. The desire to concentrate parcels is considerable among Hungarian respondents but attempts have not always worked out positively.

In Bulgaria too, internal fragmentation of private farms is not alarming. Leasing plays an important role in the establishment of large farms, although unregistered in most cases and paid in kind. Those who feel a need for consolidation of parcels mostly achieve this consolidation in an informal way.

It is hard to measure the public attention on the land fragmentation issue in these countries. The interviews led to the impression that it is neither high on the political agenda nor on the scientific one. Politicians seem anxious not to burn their fingers on land-related issues that proved to be so delicate and complicated

in recent history. The attitude among the rural population on consolidation seems to be slowly relaxing.

The Hungarian parliament has approved of the establishment of a land fund, for which the details are now legally confirmed. The fear that a land fund would give way to misuse and thus do more harm than good has led to provisions that ensure that locals and the parliament keep control over land fund activities.

Hungary has also executed a pilot project on land consolidation, named TAMA. On four locations throughout the country, a consolidation was done with a minimum of force and in a most transparent way. It proved too ambitious though, and the insufficient time, budget, management and local support caused the project to fail. This did not keep the government from preparing a Law on land consolidation that contains similarities to German legislation (like the *Genossenschaftsprinzip*), whereas the voting and the use of outside experts parallels the Dutch way of land consolidation.

Bulgaria has not put much effort in designing land consolidation legislation, but does try to improve farming namely through leasing out state land. Although not officially qualified as land banking, the land fund parcels are distributed with the intention to decrease fragmentation and to support landless applicants and peasants. Bureaucracy holds back the positive potential.

The bimodal production structure that we see in both Hungary and Bulgaria corresponds with a bimodal fragmentation problem. Large enterprises suffer from segregation of ownership and use as well as internal fragmentation. The private farms are mainly constrained by their size. Room for enlargement is present considering the declining rural population, land funds and fallow land. It seems contradictory that the most fragmented case study country has put the least effort in developing legislation for land consolidation.

What appears to be the real challenge in the land fragmentation problem in Central Europe is not only achieving farms of viable size and internal outlay, but foremost stimulating that solid rights to land are in those viable farms. Ownership on land now resides at the wrong parties. The first priority must be to facilitate a flux of solid rights to land to those who make the best economic use of them. As long as those rights stay where they are, all adjustments to agricultural structure are only addressing symptoms where they should aim at the core problem instead.

### **The Western instruments in practice.**

The first thing we want to know about Western European fragmentation-reducing efforts is whether Western Europe has encountered the same problems as Central Europe. The second factor that is key to making a match between Central Europe and Western instruments is the prerequisites for successfully applying an instrument.

Both the case study countries are situated in the temperate zone. Bavaria is twice as large as the Netherlands but, being inhabited by the same number of people, considerably less densely populated.

The emergence of land banking fits UN-surveys from the middle of the twentieth century, indicating problems in farm size. In the Netherlands, the smallholder problem was explicitly debated upon. In Bavaria, this public awareness seems to

have been missing, but this may stem from the part-time farming that was and is common in that region and made farm-size less restricting to family income.

Only the Netherlands have applied concentrated land banking by using land reclamation (the polders) as an instrument to relieve overcrowded regions. Diffuse land banking activities emerged as well and they were integrated in the Land Consolidation Service. The replenishment of the land fund was stimulated by farm termination subsidies. Land banking grew to be increasingly multifunctional.

In comparison to the Dutch land banking practice, with a specific budget and an explicit task for agro-structural improvement, land banking in Germany as a whole is less centralised and less specific. The Body of Participants (local commission in a land consolidation project) can perform land banking on a local level, especially when infrastructure-related projects are concerned. Secondly, there are private investors, buying land assets, and a special law that forces every seller of a parcel to sell it to the farmer that has the most benefit from the parcel. As a third way of land banking there are special Land Societies that can be active in land banking among other real estate activities. They were involved in reallocating half a million hectares to growing farmers throughout former Western Germany.

Land consolidation is the most prominent of the Western instruments, but surprisingly no specific policy documents indicating problems on internal farm fragmentation were found. Land consolidation apparently has been a pragmatic answer to operational needs that groups of farmers articulated to their governments. Land consolidation improves physical production conditions, especially those that cannot be improved by individual efforts.

In the Netherlands the concept gained momentum in the 1950s, when an improved law was introduced and the number of applications rose sharply, making it necessary to install a priority scheme. The first decades of success also brought scepticism about the negative effects for nature and landscape that led to a multifunctional law in 1985. It was hard to break the dominance of agricultural interests in land consolidation projects and new efforts for creating the right procedure in which interests are balanced were made in the 1990s, together with changes in terms of time- and cost-efficiency.

Developments in Bavarian land consolidation are similar to those in the Netherlands. Although having a very old legal basis, Bavarian land consolidation had its heydays in the period 1945-1970 and complemented Germany's economic restructuring plans. Bavaria has been particularly successful and active in dealing with fragmentation problems in agricultural land. The call for including non-agricultural goals was heard quite early already. Legal changes did not prevent ecological and agricultural interests to seriously collide until the 1990s.

A third instrument is voluntary land exchange. The Dutch acreage involved in voluntary land exchange was only small as compared to land consolidation. The instrument does serve a need, however, since after it lost its attractiveness due to increasing complexity and time involved, a successor regulation became popular again. Bavarian voluntary parcel exchange has been equally modest in importance, but a recent increase in interest was observed in both countries.

Farm reallocation is an important activity that is supporting the instruments in achieving their targets. It brings farms from areas where farms are concentrated (under-supply of land) to over-supply areas. In Dutch practice, it typically took

shape in voluntary reallocations that were performed with considerable financial state support. Many hundreds of farms have been reallocated over the years, mainly in the framework of land consolidation projects.

From Bavarian land consolidation it must be noted that generally a village renewal project is integrated, although it is not provided for in legislation. Because German farms show a high level of concentration, village renewal is important for sound agriculture. The Dutch landscape is scattered with separate farmsteads, which may explain the presence of farm reallocation instead.

As for the benefits of land consolidation, these occur in two steps: improvement of physical conditions for agricultural production and secondly improved farm management. Analyses about the first effect, the direct impact of fragmentation-reducing efforts, fail from literature. German yearly reports, however, show that land consolidation projects on average achieve an increase in parcel size of around 300%. An imperfect estimation of autonomous development (the overall change in parcelling) shows minimal improvement, indicating a strong ongoing fragmentation having a counter effect. In Dutch projects, the improvement in parcel size proved to be equally big. In not-consolidated areas there was an improvement too, but it was much slower than in the consolidated areas.

When assessing the actual effects of efforts to reducing fragmentation, we do have to consider the historical framework. The economic conditions allowed – and demanded – rapid exit of labour from agriculture and the emergence of mechanisation.

After studying the Western case study countries, we must conclude that Western Europe has only addressed two types of fragmentation, out of the total four types we defined, namely farm-size and internal fragmentation. The first is also very important in Central Europe, the second proved to be less problematic. On the second criterion, the prerequisites for applying an instrument, we see that land consolidation especially collides with absentee-ownership. The prerequisites for land banking seem to be present or achievable.

### **Considerations of implementation**

Up to this point, little is said about what choices have to be made and what conditions have to be met before an instrument can actually be operational. Although from the strategic analysis it is concluded that land consolidation is not fitted for the current land fragmentation problems in Central Europe, this instrument is included here for reasons of regional diversity and future developments.

Transplanting instruments meets specific difficulties. Adapting an instrument to the specific Central European context asks for familiarity with as many options as possible. In addition, we must be aware of the relationships between the already being applied instruments and their context, which allows a founded choice from the variety of optional instruments and their components. Thus, comparative research, more specifically: research in which differences between various instruments are explained, is key to institutional transplantation.

Unfortunately, for the diffuse land banking activities in both case study countries no written records could be found addressing the operational aspects. On Dutch concentrated land banking, however, an extensive operational analysis is available

that by and large is relevant for diffuse land banking as well. Choices have to be made about:

- who to sell or give land fund parcels to when demand exceeds supply. By defining selection criteria, the land banking authority can enhance the situation in a specific group or region
- how to replenish the slowly shrinking land fund. Active but voluntary acquisition was standard in the Netherlands and Bavaria, together with financial stimuli that made sale of land more profitable
- what land use should be established on the space the land fund provides. Besides enhancing the farming structure, in cases it might be sensible to create space for infrastructure, processing industry, town improvement or nature conservation
- how large newly established farms in a concentrated land fund must be. Large farms may be economically stronger but they generate relatively little employment; the question is what has more weight
- what type of tenure distributed land should be in: ownership, tenancy, state exploitation or new types of rights to land

In land consolidation a comparative explaining analysis was possible. The 1954 laws from the Netherlands and Bavaria were compared. A number of differences were assumed to be essential and some plausible explanations could be found.

- the rights of the Dutch tenant and owners within a land consolidation project are identical. This may be explained by the different nature of Dutch tenancy that is quite heavily protected and regulated, whereas German tenancy is typically short term and does not involve specific protection or additional rights
- after a Dutch land consolidation project, all titles to land are declared irrevocable, which is advantageous for the quality of land registry. This fails in Bavaria because the rights recorded in the German land registry already are beyond doubt by definition
- the early 1900 breakdown of a long tradition of authoritarian regimes in Bavaria may be the reason of the highly participatory decision-making during land consolidation as compared to Dutch practice. Bavarian projects commence with top-down assignment, but are managed and controlled by the participants themselves. The Dutch projects have to be voted for, which can be seen as a compensation to the little participatory process
- inclusion of village-renewal depends on prevailing settlement patterns; Dutch farmsteads are typically scattered across the landscape, which calls for farm reallocation rather than village renewal

Apart from legislation, organisation and financing is decisive in the effectiveness of land consolidation. In this thesis, the pre-1970 situation is considered since at that time the system was primarily focussed on fragmentation-reduction. In every German *Land*, the organisation behind land consolidation can be different. Bavaria has one central office and 7 relatively large regional offices (which allows each office to have state of the art facilities) with strongly hierarchic structures. The Dutch central organ is a commission in which several interest groups are represented. It decides on newly initiating projects. Two organisations are

executive bodies: the cadastre for designing the reallocation of parcels and the Land Consolidation Service for the process-management.

Part of the costs is typically financed by the government, which makes the effectiveness of the instrument susceptible for political sentiments. Data on Dutch expenditures as a share of state budget do not prove a systematically higher cash flow than in Bavaria. Dutch projects are relatively expensive, but farmers do not have to pay their contribution at once.

## **Conclusions and recommendations**

Considering the three constituent analyses, the answer to the main question must be that Western European practice holds an instrument that is promising for effectively dealing with Central European land fragmentation: land banking. Land consolidation is likely to meet a growing demand when land banking is effective.

The main recommendation therefore is that improvement of the Central European farming structure is best helped with land banking. The application of land consolidation must be confined to region in which private land ownership prevails in combination with large but internally fragmented farms; regions that will grow in size and number when land banking is effective. Accuracy, reliability and transparency must characterise communication between policy-makers and the people that are personally affected by the implementation of policy, for negative sentiments can paralyse even the best concepts.

Although this conclusion opposes to the popular line of thinking – that may have been affected by the multiple meaning of the word fragmentation – similar views can already be found in literature.

It may be interesting what the value of smaller instruments can be, for instance legal provisions that expand the rights to land within a group that is considered to need support, or changing rules on land transactions in order to make the land market reduce land fragmentation. Hungary has already made such efforts by granting family farms pre-emption rights on land.