

# Importance and Prospect of Land Consolidation in the Czech Republic

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## Summary

In the Czech Republic (CR) the Land Offices were established in 1991, shortly after velvet revolution (November 1989). Their very first task was giving back to owners their agricultural and forest property, being taken them away during the totalitarian regime. Relating task was to enable farming on the restituted land to those owners who wanted to do so. The tool for this was so called "interim use". Contemporary main activities of land offices are complex land consolidation; its realization under conditions of the Czech Republic leads to complete clarification and stabilization of owners' relations to land. Land consolidation is also a unique tool for complex solution of structural problems in the rural landscape and countryside: construction of new ways/rural roads, modification of water management relations and landscape development. Realization of land consolidation means updating both descriptive and graphical data of the cadastre of real estate in modern digital form.

## Zusammenfassung

*In der Tschechischen Republik wurden 1991 die Land-Behörden (land offices) kurz nach der »Samtenen Revolution« im November 1989 eingerichtet. Ihre vornehmliche Aufgabe war die Rückgabe von land- und forstwirtschaftlichem Eigentum, welches während des totalitären Regimes weggenommen worden war. Damit verbunden war die Aufgabe, den Eigentümern, die es wünschten, eine landwirtschaftliche Nutzung auf dem zurückgegebenen Land zu ermöglichen. Das Werkzeug dazu war die sogenannte »Vorübergehende Besitzregelung« (interim use). Heute besteht die Haupttätigkeit der Land-Behörden in der Durchführung komplexer Flurbereinigungsverfahren. Ihre Realisierung unter den tschechischen Rahmenbedingungen führt zur vollständigen Klärung und Gewährleistung der Eigentumsverhältnisse. Die Flurbereinigung ist auch ein einzigartiges Instrument zur Lösung agrarstruktureller Probleme im ländlichen Raum: Bau von neuen Wegen, Modifikation des Wassermanagements, Landschaftsentwicklung. Die Durchführung der Flurbereinigung bedeutet zudem eine Erneuerung der beschreibenden und grafischen Daten des Liegenschaftskatasters in zeitgemäßer digitaler Form.*

**Keywords:** Restitution, Land Consolidation, Cadastre of Land Estate, Urban Development, Financing

## 1 From Restitution towards Land Consolidation

To begin with, it is necessary to mention the process of restitution as the principal post-revolutionary activity of land offices. Even though it is still impossible to speak about complete solution of restitution (for instance some lawsuits are under way), the present situation shows that the precondition for normal functioning of land and agricultural property relations has been established. Recovery of the ownership is the crucial condition for further activities in the territory included realization of land consolidation. At least one fifth of the territory of the Czech Republic became influenced by restitution according to the law [1].

However, simply giving back the property does not mean the end of complicated process of restitution. The point is that land owners should be enabled to handle their plots freely, which is impossible for inaccessible ones or for plots compounded into big blocks. The plots were restituted in their former proprietary disintegrated form, being very often inaccessible as a consequence of creation of big land blocks going together with destroying ways/rural roads in the past regime. The way leading to solution is land consolidation, but its actual realization is, however, impossible to be done on the whole of the state territory in a short time.

Despite some expectations it did not occur very often, that the owners would like to farm on the restituted land on their own. After 40 years of completely different development in the totalitarian regime, brand new situation occurred – the respective group of the society grew older, or did not more exist; the roots to the land were broken. To ensure farming of owners on their own land would not be technically possible to the larger extent either. The fact, that the owners themselves were interested in farming only in a very limited number, turned up to be a very positive circumstance from the point of view of real possibilities regarding the realization of land consolidation.

For those owners, who wanted to continue in farming, the temporary solution has been found in the form of so called "interim use". The owner got other plots only into use instead of his inaccessible ones which were of the same value and were still in possession of another owner whose intention was not to farm (it meant that the farming owner did not own the land; he only possessed and used it to farming purposes. The ownership was not solved at that moment). Thousands of administrative procedures were opened in kind of "simple land consolidation". This approach satisfied most of the owners intending to farm on the land in the frame of interim use.

Nowadays, the situation is already overcome and the state of use of land is steady. New application of the interim use is not enabled in existing law on land consolidation and land offices [2]. This law assumes that in the past established interim use will be step by step modified by the way of complex land consolidation in the frame of complex solution of new land tenure.

## 2 Historical Background for Realization of Land Consolidation in the Czech Republic

Land consolidation always represented the activity leading first of all to effective and economical farming in the agricultural landscape together with its preservation and creation. The discipline of land consolidation has had successful history in the area of today's Czech Republic. In the time of Austro-Hungarian Empire the name František Skopalík (1822–1891) went down into awareness being the pioneer of that approach. He was an esteemed farmer, mayor of the municipality and later on the deputy of the Imperial Council in Vienna. From this position he had to have the influence on enforcing the first Imperial frame law on farming land redistribution (in 1868). This law dealt with the purpose and principles of land redistribution, organization of the responsible authority and the way of financing. After gaining experience from redistribution works, being dated a bit sooner in German lands then somewhere else, the statutory principle (*ex officio*) instead of principle of mere voluntariness was enforced in the law.

Until 1948 the development in Czech lands was similar to the one anywhere in the middle Europe. Of course after starting of the totalitarian regime land consolidation has still been realized, but based on completely different principles – in the first place the ownership of land was completely denied. The purpose of these modifications was subordinated solely to pure economical goal, industrialization of the agriculture and political requirements of that time. The denial of owners' rights enabled then enormous quick progress in these goals.

The end of the totalitarian regime in 1989 enabled a follow-up of former tradition in land consolidation. Nevertheless, land farming in the CR was in a very specific situation due to the development during totalitarian regime, when the oversized land complexes were created and farmed by state-owned and partly state-owned subjects. This situation had to be solved together with the reflection of the development in other neighbouring countries such as Austria and Germany as well. Shortly after revolution in 1989 very close relations were established with some land offices, particularly in Bavaria, as well as with the Bavarian Ministry of Agriculture and Forestry. Bavarian side organized educational excursions for the representatives from newly established land offices during which not only Bavarian Land Consolidation Offices

were visited but also the results of their activities in the field were shown. It is particularly to mention the Land Consolidation Authority in Landau an der Isar (Amt für ländliche Entwicklung Niederbayern) whose colleagues were repeatedly helping to Czech colleagues and sharing generously valuable experience with them. The representatives from Bavaria and Austria participated usually in the conferences on land consolidation being held in the Czech Republic often together with Slovak and Polish colleagues, sometimes with colleagues from France as well. We still remember with honour Mr. Raupricht, in memoriam, the former chief of the Land Consolidation Authority in Landau who supported this international cooperation very intensively.

## 3 The Grounds for Current Land Consolidation

What our landscape (countryside as it is) needs in fact is stated in following quotation of the basic provision of the effective law [2]: “Land consolidation in public interest means spatial and functional layout of plots, which are either redistributed or divided, enabling accessibility and use of plots and their borders settlement in such a way that conditions for economical farming of land owners are created. In these consequences the owners' rights together with related encumbrances are being settled. At the same time the conditions for improvement of the environment, land resources protection and fertilization, water management and improvement of ecological stability of the landscape are realized. The results of land consolidation serve to renewal of the cadastral documentation as well as to the necessary basis for urban planning.” (Fig. 1)

### 3.1 Legislation

Some lawmakers got through in this law [2] that land consolidation should create “the condition for economical farming of land owners”. It is questionable whether it should consider solely the land owners. Whereas the owners' relations were totally suppressed and the land use relations emphasized in the totalitarian time, the revolutionary development means cardinal change in these issues. Objective land consolidation should not pursue only “economical farming goals of land owners” but has also to consider the interests of land users (tenants). In practice the interest of land users is taken into account even if it is not directly stated in the law. Therefore it is necessary to find a balanced approach both to interests of owners and farmers as land users. This approach is utterly necessary in our conditions because of the completely untypical situation caused by the totalitarian development due to which farming is realized at least in 90 % on the leasehold land. Besides other things the totalitarian

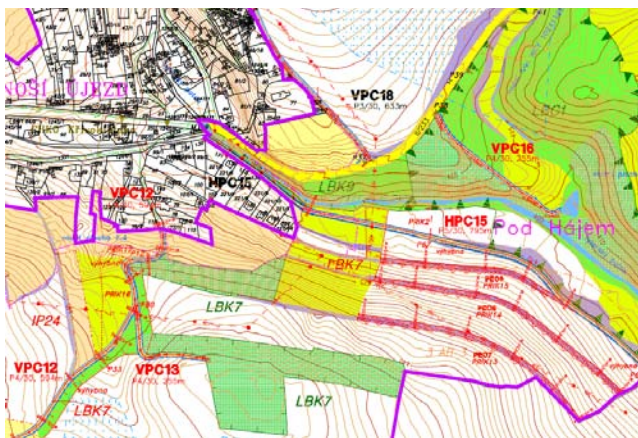


Fig. 1: Map cut-out with plan of common facilities. Planned common facilities in red; HPC/VPC: main/side dirt road with water ditches; LBK: green vegetation areas and lines; PEO: anti-erosion measurement, balks, grass areas; violet line: border of the land consolidation project

regime in the countryside has brought totally different relation to land for the new generation. One-time post-revolutionary catchwords and appeals of some politicians regarding the owners of land to take it over and begin farming again have only partly come true. Farming is a hard work and to eliminate it at least a bit it is necessary to farm on bigger economic complexes with use of modern equipment. It is to state that the totalitarian time has speeded up a progressive decline in number of small farming subjects which can hardly get on in the economic competition, a development, which could be observed in surrounding countries, too.

### 3.2 Rural Infrastructure

According to the law the plots have to be accessible. The accessibility is regarded as necessary condition for the owners to be able to handle their plots on their own. It means that in case they are interested in farming they could farm themselves on the plots or leasehold them to anybody they want. The interest in own farming is not very crucial, there is often not any choice regarding the leaseholder, because the land is used by one or two farmers in the locality. Therefore it is to consider whether it is really economical to enable accessibility of all plots with regard to the reality of the Czech countryside. The realization of all accesses, i.e. roads, is very expensive. The land consolidation practice has to cope even with this legal request. After land consolidation the plots are de jure accessible (i.e. the plots for roads are marked out in the cadastre of real estate). The roads are nevertheless being built especially in locations where they are really necessary for existing use of plots. Likewise such roads are being built which have also another purpose than only making plots accessible, as for instance to anti-erosive, water managerial or ecological reasons (Fig. 2 and 3). The plots prepared for roads are still used for



Fig. 2: Newly built dirt road with water ditch and green vegetation planted along it

farming nowadays. However, it is true that in case the owner of the plot likes to farm there, the access to it is prepared; it is only necessary to set out the boundary of the road plot. The fact is that the optimal solution of this specific situation has not been found yet. It can be estimated that some further amendment of the law would bring such a change according to which the participants of the procedure would be not only the land owners but also land users – as it is in some countries without totalitarian experience and with natural development.

### 3.3 Ecological Aspects

The landscape balance with its universal functionality is crucial not only for long-lasting development of agriculture but also for life itself. It is necessary to ensure that the landscape as a whole can provide everything we have always took for granted. For the long time we have not realized the fragility of the landscape in case it is misused by the human being. Nevertheless, further development can hardly aimed at renewal of the landscape relations as we have known them from the history. Agricultural large-scale production supported by huge development of technical equipment not existing in the past is nowadays the fact that must be taken into account even in



Fig. 3: Part of a new road with a water ford

the future. It seems that generally farming of huge and economically strong complexes will be crucial. However, it is necessary to state very carefully not only in which areas such an effective farming can be enabled but also under which conditions. Except for this, such areas will always exist where the huge farming technologies cannot be used under any circumstances. This was the big mistake of the farming in totalitarian regime, namely the fact, that these huge farming technologies were realized in totally unsuitable areas. However, it is necessary to take appropriate care for the landscape even in these for farming inefficient areas. Besides other things the state support for smaller and specifically farming subjects will always be necessary in sensitive landscape areas at least due to the ecological reasons. And these aspects must be reflected in the process of modern land consolidation.

### 3.4 Administrative Issues

In contrast to Germany or Austria where the administrative personnel together with experts are concentrated



Fig. 4: Anti-erosion and flood-control measurement – water retention in the landscape

directly into the land offices, the situation in the Czech Republic is quite different. Land offices organize the activities completely, which means that they create the plans for land consolidation initiation, ask for funding, lead administrative procedures, the administrative decision on land consolidation included, and submit public tenders on particular land consolidation projects. The professional activity (engineering) itself is fully in competence of commercial sphere included land surveying works. Current problem is the price for land consolidation works which is constantly decreasing on the job market. It seems to be positive but only partly; in consequence the quality of results is decreasing. Due to the lack of employees in land offices who are able to check the results, the situation is quite unsatisfying.

One of significant factors for land consolidation in the Czech Republic is the decrease of land from the state

ownership. It is the land being administered by the Land Resources Office of the CR based on the law [3]. After 1989 the state began largely privatize even the land being historically in state ownership. Such insufficient inter-connection of the state interests regarding rapid privatization of land in state ownership on one hand and land consolidation processes on the other hand has been very problematic in the practice. To satisfy the needs for land necessarily being used for new technical and ecological facilities in the landscape at least 3 % of the total land area being the subject of land consolidation has to be for disposal (Fig. 4). According to the law the land in state ownership shall be *reserved* for technical provisions in the landscape. In case it is not enough, the land owned by municipalities is used and even if this is not sufficient the owners have to bring up the difference. And this fact is a very sensitive problem. The owners are often not willing to give their land for these general purposes and the successful land consolidation is hereby endangered. Recently the situation has partly improved by creation of the state land fund for strategic state interests, land consolidation included. Nevertheless, the amount of land in this fund is insufficient (in some regions a lack of state land already exists) and we can expect many problems in this area in the near future.

## 4 Actual State of Land Consolidation

Actually there is a big need of implementation of land consolidation. The problems were established in the previous regime, when the technical-economic modifications of land have been realized solely according to needs of large state and semi-state users (unified agricultural cooperatives, state farms). The ambiguous land ownership and the situation in land tenure doesn't only complicate the farming activities very often but cause also a lot of problems regarding land issues in public interest. The interest in starting of land consolidation has been growing constantly not only from the side of individual owners but also from municipalities which cannot realize the necessary development without land consolidation. The demand on land consolidation is caused by the fact that areas with completed land consolidation process registered rapid improvement of the economic situation, and neighbouring cadastral districts and municipalities have noticed these positive impacts. They request land consolidation within their territory as well.

To be unbiased, it is necessary to state, that land consolidation has had also some opponents. Some big farming land users can be counted to them, who are basically satisfied with this dismal situation in the land tenure. They in fact do not pay any rent because the owner is unclear. From the point of view of these large farmers it can be seen that the land consolidation process brings

specific complications to them. They have to make leasing agreements reflecting new and transparent land tenure, some owners want to negotiate (and finally are allowed to) with rival companies, former huge blocks of land for own farming are being divided into smaller ones by new ways and new green vegetation, new provisions are being realized in the landscape which are to be avoided, respected etc. These entrepreneurs claim that land consolidation is too expensive and does not bring any results from the point of view of private farming. They feel to be endangered by land consolidation. These opinions are, however, partly connected with the conditions before revolution or soon after revolution together with pure economic interests aiming at simple exploitation of agricultural land. Land consolidation strives to improve the conditions for farming even for future farmers regardless of them being owners or only tenants. In general they are supporting sustainable development of agricultural landscape or rather the Czech countryside.

There are more than 13.000 cadastral districts of approximate area of 600 hectares per cadastral district. The agricultural land covers 4,24 million hectares. Land consolidation is to be done in more than 85 % cadastral districts, only mountain and urban cadastral districts can be neglected. At present land consolidation has been realized or already completed on approximately 1,2 million hectares of agricultural land, which creates 28 % of the total area of agricultural land in the Czech Republic (Fig. 5).

It is necessary to mention that especially during the last time municipalities request land consolidation more often because of rearrangement of water management conditions. It is connected with climatic changes, carrying sudden and strong downfalls which endanger areas and properties, cause enormous erosion and floods. Land consolidation involves a lot of smaller water management provisions with the aim of improving water retention in the landscape and reducing its destructive drainage. Such smaller objects are balks, tiny water reservoirs, dry flood control reservoirs, multipurpose dirt roads with water moats, division of bigger blocks of land into smaller ones using green vegetation etc. It is true that one cadastral district being usually the area for land consolidation project cannot be subject for independent survey and solution of water management situation. Only in rare cases such a detailed study exists, dealing with water regime solution in the broader context; the solution for the suitable catchment area, like the land consolidation area, can only be based on such a necessary documentation. Water management administration has been enforced to create such detailed documentations.

Finally it is necessary to mention the relation between land consolidation and urban development. These two domains complement each other, but in our conditions they do unfortunately often compete, and the ideal cooperation has not been found yet. Whereas the urban plan of a municipality determines the land use of a specific area especially in the built-up area and only in general, in the land consolidation plan means specific solution just

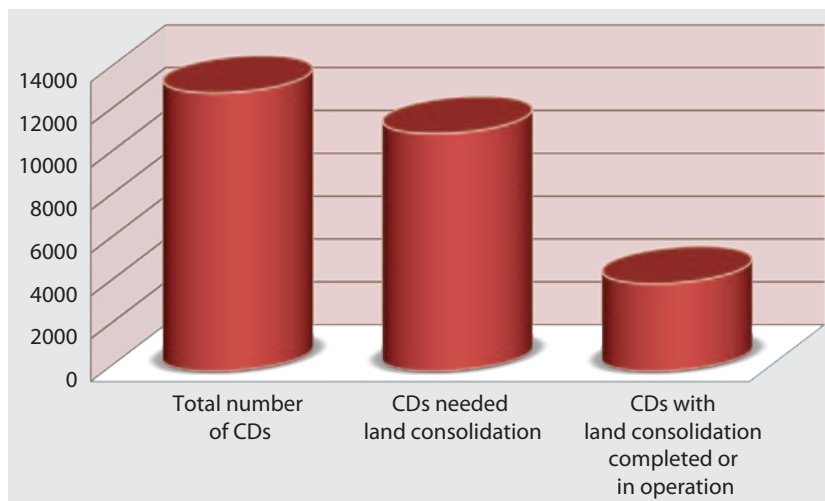


Fig. 5: Realization of land consolidation according to the number of cadastral districts (CD)

for rural purposes. Problems occur, in particular, in such a situation, when urban planning solves in detail even the rural area, i. e. open farming landscape. In such situation land use has necessarily to be modified in cooperation with the owners in a process of land consolidation. The optimum procedure supposes parallel proceeding of both domains and a close cooperation in coordination of the ideas regarding the final appearance of the landscape. In some cases it has already been reached and the results are very good.

## 5 Land Surveying Works, Cadastre of Real Estate

Activities in land consolidation are tightly connected with the activities in land surveying and cadastre. In fact half of the costs for preparation of land consolidation proposal are spent on the work of land surveying and cadastre. The result of rearrangement of land tenure and all technical and other provisions in the landscape is the new digital cadastral map and actual state of data on ownership, i. e. the file of descriptive information. Land surveying works are therefore based on legal regulations being in force in the branch of land surveying and cadastre and are verified and granted by the authorized land surveyor, i. e. the person having the authorization for the particular activity, issued by the Czech Office for Surveying, Mapping and Cadastre (Fig. 6).

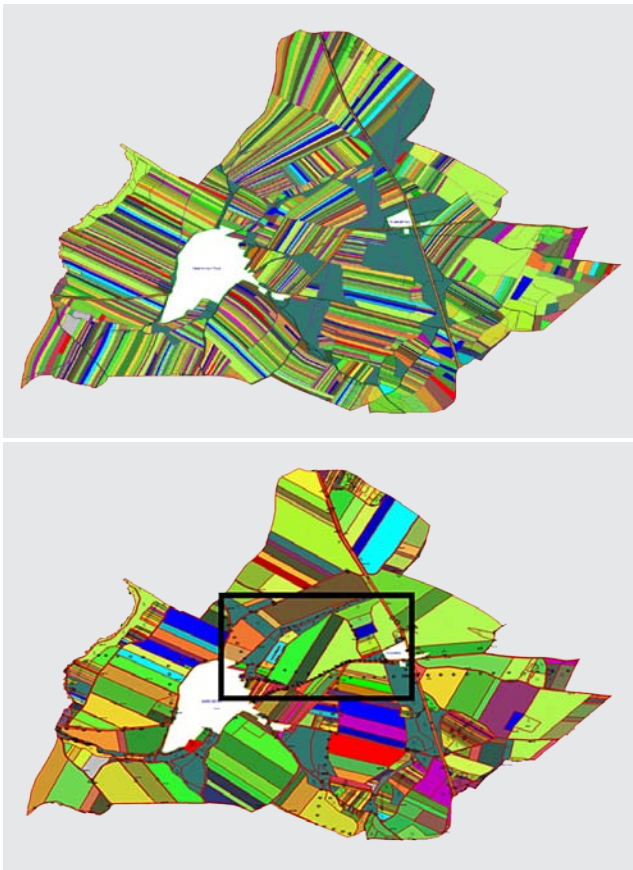


Fig. 6: Owners' plots before and after the land consolidation (cadastral district Markvartice, south Moravia); highlighted cut-out see Fig. 7

Current conception of land consolidation is the result of a long and complicated development between years 1994 and 2002, when a number of reasonable provisions have been implemented into the legal regulations not only in the branch of land surveying and cadastre but also in the area of land consolidation. At present land consolidation is one of the possibilities for renewal (updating) of the cadastre as stipulated in the relevant legal regulations [1], [2], [4], [5], [6], [7]. Of course, there is another possibility for renewal of the cadastre by the new mapping being, however, very expensive and therefore applied only ex-

ceptionally. The last possibility for renewal of cadastre is revision of the file of geodetic information. In fact it is only transformation of the analogue map into the digital form generally (some exceptions exist) without any realization of new land surveying in the field. The deadline for completing of the digitization of the cadastre in the Czech Republic is the year 2017. The digitization is aimed solely at graphical documentation, because the descriptive files have already been digitized. Responsible institution for this is the Czech Office for Surveying, Mapping and Cadastre. Nowadays, land consolidation participate to a large extent in the renewal and digitization of the cadastre, results being of the highest quality very close to the ones of new mapping. Permanent coordination of the progress of digitization is going on between the Czech Office for Surveying, Mapping and Cadastre and the Ministry of Agriculture, being the supervisor authority of land offices (Fig. 7 and 8).

Land surveying works in the field start with a revision and completion of the horizontal geodetic control, being the geometric basis for detailed planimetric survey. Except for classical methods global navigation satellite systems such as NAVSTAR or GLONASS are being used to a larger extent nowadays. The surveyed subjects are not only those being elements of cadastral map but all elements necessary for the proposal of technical provisions in the landscape so as for the sets of new owners' plots. The elements in question are above-ground wiring, lines for accumulated water draining, small bridges, farming exits, entrances to buildings, solitary and groups of trees, balks etc. Precise boundary determination is crucial for the land consolidation process in the area in question, which means the area being changed in the cadastre for a new state. Built-up part of the municipalities is usually situated out of the interest area of land consolidation. These parts of municipalities are therefore surveyed by cadastral offices as soon as possible after completion of land consolidation. The effort is focused on covering as broad part of the territory as possible (included built-up and further areas being out of land consolidation frame) with the updated situation. The land consolidation



Fig. 7: Orthophoto completed with new digital cadastral map



Fig. 8: Scaled up detail from Fig. 7

boundaries are as much as possible copying the existing parcels. They are investigated in the field by the group of experts and newly surveyed. The boundaries of the district of land consolidation are marked in the field and stabilized by the mark stones. Land surveying works include not only the planimetry but also the altimetry, more detailed in places where the dirt road is set out, water basins, dry flood control reservoirs or balks are located etc.

The cadastre of real estate utilizes the results of land consolidation for creation of a new digital cadastral map and putting together updated file of all descriptive information. After completion of land consolidation the owners are entitled to ask for setting out new boundaries of all their plots, but as a rule only those proprietary boundaries are being set out which create the boundaries of the users' complexes as well. The possibility of setting out the boundaries using state costs (i.e. free of charge for owners in fact) remains for the owners even later after finishing the land consolidation, in case it has not been done in its frame yet.

## 6 The Question of Financing and Capacity

Since establishing of land offices in 1991 their activities have been financed solely from the state budget. Whereas in the beginning the means allocated from the state budget for establishing the land offices were enough (primarily costs on the process of restitutions), commencement of costly process of land consolidation significantly changed the situation; there is permanently a big lack of financial means. In accordance with legal regulations being in force in the Czech Republic, all costs of land consolidation must be covered by the state, nor municipalities, nor owners participating on it. This is based on such a perception stemming from the fact, that the state

caused this bad situation in the land ownership (even if it was the previous-totalitarian one) and so it is his turn to improve this situation by way of restitutions and land consolidation bearing the costs of it as well.

In 1998 the conception of land offices activities till 2010 was submitted to the government. The document prepared by the Ministry of Agriculture of the CR worked on the assumption, that the activities of land offices will be covered at least by approximately two billion Czech crowns (CZK), which means approximately 80 million Euros per year. However, the conception has not been fulfilled since the very beginning and the inputs from the state budget into this area have been constantly decreasing. It was hardly possible to keep the preparation of land consolidation projects in operation and so the realization of technical measures suffered from lack of means which significantly decreased credibility of the state regarding its effort for real improvement. The situation has not gone better until the possibility of utilization of European Union funding occurred. The CR has been enabled to use the European resources since 2002, namely SAPARD program being in operation already before the Czech Republic joined the EU (on 1st May 2004).

Recently the situation has changed rapidly. The total amount of financial means has even exceeded two billion CZK lately, refinanced by EU with a portion of approximately 1/3. The essential source is the Program of the Development of the Countryside EAFRD, in particular the provision I.1.4. "Land consolidation", being effective for the period 2009–2013. EU resources are focused especially on financing of technical and ecological measures in the field. The biggest investments have been made into the renewal of the dirt roads' network. Thanks to EU financial resources, the proportion of realized flood control, anti-erosion and eco-stabilization provisions has grown significantly after 2004. It is to confirm that utilization of EU financial resources regarding land consolidation can be considered very successful (Fig. 9).

Nevertheless, it is necessary to mention that the limitation for more progressive land consolidation procedures is accounted not only to financial means, but also to the capacity of land offices together with a limited number of experienced engineers.

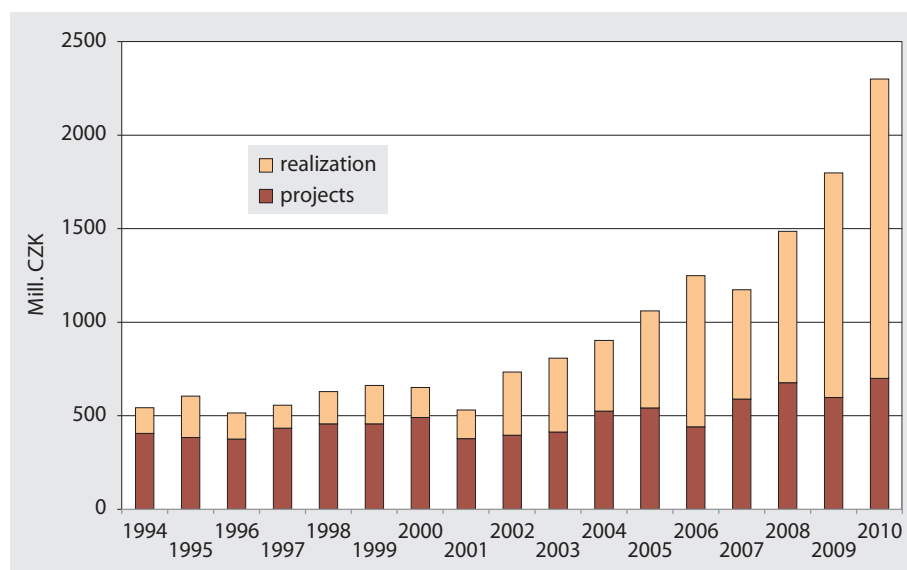


Fig. 9: Use of financial means on realization of technical provisions in the landscape and projects of land consolidation

## 7 Conclusion

Land consolidation in the CR conditions means the process of solving the proprietary problems stemming from the totalitarian regime together with current requirements regarding the area of preservation and creation of stabile agriculture landscape and countryside itself. The total needs of land consolidation create huge prospects for this branch. It is therefore desirable that the society management persists in the commenced trend which supports land consolidation activities. Every responsible social system should really purposefully ensure the needs of the countryside. Although these investments do not bring the immediate effect being rather long-term ones, still they are completely compatible with the strategy of sustainable development. Existing development is based on free non-regulated market, business and consumption and it is necessary to regulate it to preserve healthy country roots which are essential for life and source of life energy. Land consolidation activities play the irreplaceable role in this process. The fundamental condition, in particular, is provision of appropriate amount of financial means for it. Participation of local administration both in urban planning and land consolidation is essential as well. Land offices are facing a huge amount of work so as big responsibility for further necessary development in this area. It can be presumed that these offices would overtake the responsibility for the development of the countryside in general in the future, similarly to already existing situation in some neighbouring Western countries.

At present the new law is in preparation in the CR based on which the State Land Office will be established as the independent office in the branch of agriculture. Falling within its competence will not only be in the area of restitutions and land consolidation, but also in management of state agricultural land. Establishment of such an office is perceived as the social appreciation of significance of all activities being presented by land offices.

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