

The Effectiveness of Land Consolidation in Slovakia

Lubica HUDECOVÁ, Slovakia

Keywords: Land Consolidation, Land Management, Real Estate Registering, Registering Of The Titles To Real Estate, Injustice Against Property Owners, Land Ownership Fragmentation

SUMMARY

Land consolidation in Slovak republic in addition to the rational arrangement of landscape area is aimed at legal settlement and concentration of fragmented land holdings. Land Consolidation also alleviate injustice against property owners from the period 1948-1989 that occurred in the ownership relations system as well as in the recording of the title to the real estate. Efforts to enforce the land use relations regarding the collectivized forms of the use of agricultural and forest land in contrast to traditional ownership relations in this period were accompanied by simplified view of recording tools.

The focus of this paper is to explain some of the milestones that have significantly affected the holdings of agricultural land in Slovakia. The paper addresses problem areas and explains certain specific features of land consolidation procedures. It brings several statistical indicators and comparisons that describe the effectiveness of land consolidation in terms of alleviation of injustice against the property owner from the past and in terms of the state of agricultural policy and the functioning of the state in the age of social transformation. We discuss the improvements of land fragmentation and fragmentation of joint-ownership shares. Since it is an issue of interconnected problems associated with a specific socio-historical background, if we evaluate the effectiveness of land consolidation, we evaluate agricultural policy and the functioning of the state too.

SUMMARY

Na Slovensku pozemkové úpravy okrem zámeru racionálneho usporiadania krajinného priestoru majú za cieľ usporiadať aj vlastníctvo a koncentrovať rozdrobenú držbu pôdy. Pozemkové úpravy tiež naprávajú krivdy a chyby z minulosti, ku ktorým došlo v rokoch 1948-1989 v systéme vlastníckych vzťahov, a tiež v evidencii vlastníckeho práva k nehnuteľnostiam. V tomto období boli snahy o presadenie užívacích práv ku kolektivizovaným formám využívania poľnohospodárskej pôdy a lesnej pôdy oproti vlastníckym vzťahom sprevádzané zjednodušeným pohľadom na evidenčné nástroje. Príspevok sa sústreďuje na vysvetlenie niektorých historických míľnikov, ktoré zásadným spôsobom ovplyvnili držbu poľnohospodárskej pôdy na Slovensku. Kompletizuje problémové okruhy a vysvetľuje niektoré špecifické postupov pozemkových úprav. Prináša viaceré merateľné štatistické ukazovatele a porovnania, ktoré charakterizujú úspešnosť pozemkových úprav tak, aby boli zrozumiteľné aj zahraničným pozorovateľom. Hodnotíme zlepšenie fragmentácie pozemkov a fragmentácie spoluvlastníckych podielov. Keďže ide o spojené nádoby viacerých problémov so špecifickým spoločensko-historickým pozadím, ak hodnotíme pozemkové úpravy, hodnotíme aj poľnohospodársku politiku a fungovanie štátu.

This is a peer reviewed paper
FIG Working week 2015

The Effect of Land Consolidation in Slovakia

Lubica HUDECOVÁ, Slovakia

1. INTRODUCTION

Slovakia belongs to the group of states that extend the content of traditional land consolidation and this institute is used to implement the new policy in relation to the possession and land management (Pašakarnis et al., 2010).

Land consolidation is a tool of the state to solve land tenure, which matches our current needs. In the period before 1848 land consolidation was connected to arrangement of the titles between landlords and serfs, after 1848 the so-called “copyhold redistributions” concerned with the transformation of feudal ownership structure and primarily the mending of fragmented land. After 1948 land consolidation was an instrument of collectivization of land with the aim to attenuate owners’ awareness of their ownership right. After 1989 the aim is consolidation, division, dislocation and arrangement of plots on the basis of ownership and land use relations (and related execution of the field, communication, water control management, re-cultivation and fertilization measures). Another purpose is rationalization of agricultural operation conditions, as well as maintaining stability and aesthetic look of agricultural land.

40 year period of socialism caused many problems which only in few cases have a technical solution. Broken connection between the man and the land in addition to the distrust of citizens in state land reforms cause serious problems for business in agriculture. Significant problem is also the high fragmentation of ownership of agricultural land. The situation in Slovakia is different in Czech Republic and in Germany, as a result of the past legal regulation, the establishment of the ownership of agricultural land was fixed in such a way that the land was inherited only by one, usually the oldest, heir. The fragmented agricultural land ownership causes problems for purchasing as well as leasing of land, especially because of the existence of 9.6 million plots. Often, a plot of an average area of 0.45 ha is owned by 12-15 owners. (Bandlerová et al., 2013).

2. REAL ESTATE REGISTERING AND REGISTERING OF THE TITLE TO REAL ESTATES IN PAST

History of land administration system in Slovakia dates back to the first half of the 19th century. History of land consolidation is even older.

Land registration with recording rights on land in land register was initiated within the territory of former Hungary in 1852 by the Emperor’s patent, followed by the enactments of former Hungarian Ministry of Justice from the years 1853-1855. Both the acquirement of the right to a land as well as the burdening of the real estate by charges and mortgages was controlled in accordance with the above regulations. The inventory of that time consisted of two parts: land register and land cadastre. The inventory tools were serving a single purpose - the protection of ownership right and the tax purposes utilization, respectively (Hudecová, 1997).

2.1 Origin of land ownership fragmentation

Only in the 1848 when serfdom was abolished, the peasant became free and could freely dispose of the land. At this time, the structure of land tenure was stabilized so that the peasant owned:

- in urban area 1 to 3 plots (a house with a yard, a garden and possibly a croft),
- in rural area as many plots as land units, (Figure 1).



Figure 1. Part of the map in the copyhold village shows the number of land units (marked by roman numerals). Every peasant cultivated the plot in each land unit.

A holding of a peasant was dispersed. It was a result of the way urban plots were allocated in each land unit. There could be 50 units in one cadastral district. Plots were mostly long and narrow. On average one peasant had held a land up to 2 ha.

In accordance with the standards of Hungarian customary law, when the farmer died, his lots were divided among all respective heirs. The absurdity of gradual decrease of plots by each consecutive division through inheritance and its tragic consequences were not immediately obvious. The inheritance of land in equal shares created a dysfunctional arrangement of plots within the country. The land ownership fragmentation is closely connected to their scattering, indefinite shape and poor access.

3. COPYHOLD REDISTRIBUTIONS (LAND CONSOLIDATION IN PAST)

To the most significant land consolidation of that period belongs land redistribution. They were legally based on the legal articles from the years 1836 [Hungary, 1836], 1840 [Hungary, 1840] and 1871 [Hungary, 1871]. In the period before 1848 land consolidation was connected to arrangement of the titles between landlords and serfs, after 1848 the so-called “copyhold redistributions” was connected to the transformation of feudal ownership structure.

In copyhold redistributions the real tenure and the state in land register were taken as the basis for the assignation of the ownership right. If the land register was not settled, resolution was carried out as the first step. Measuring works were carried out in trigonometric network and the maps were made in limited sheets in cadastral system. Technical documentation was laid-out in a way that enabled it to be used for the purposes of land cadastre and land register. Until 1948 approximately 220 land redistributions were carried out in accordance with old legal regulations [Hungary, 1908].

3.1 Processes of copyhold redistribution

Copyhold redistribution works were initiated on the basis of the decision of County Court, which was represented by land redistribution judge. The judge introduced a chosen surveyor to the land redistribution and at the same time requested both the description of cadastral boundaries and area excluded from the land redistribution process. At the same time the land redistribution areas' monumentation by landmarks was carried out.

The surveyor began the work in the municipality with designing of control network, measured consolidated perimeter and began examination of property holding. Then the measurement of old state was carried out according to the real situation independently from the state of topographic base. Simultaneously the surveying of the old situation and the land evaluation of individual parcels was carried out.

After the measurement of the old state was carried out, the projection in blue color in topographic base was carried out and the acreage of individual parcels was calculated. The position book was created and according to the land register on the base of land register insets the ownership title was created for each insert with old and new state. On the basis of the documentation made through this method the land redistribution title was fixed in crowns for each authorized participant of land redistribution. The land redistribution surveyor then made an overall balance of the titles by creating the so-called Combinatory A. On the basis of fixed titles the preliminary location plan was elaborated.

After dislocation plan had been negotiated and approved the claims of every participant were projected on the maps and the definite technical documentation of a new situation, so-called Combinatory B was created. According to the projected new state the new situation was set out also in the field. All new boundaries were mounted by stone landmarks.

In the end the surveyor asked the County Court for authentication - that is for establishing credibility of documentation, approval of new situation and introduction of new land redistribution participants to the tenure of new lots.

Regarding the legal consequences, the significance of authentication and aspects of land and legal settlement it is necessary to note that only authenticated Combinatory B is a definite land redistribution documentation of a new situation. Combinatory B is consisting of new maps and representing new situation set out in the field with relevant written documentation, which was in the respect of legal significance a valuable ground for transformation of land register' s titles.

As a result of the events in 1948 the semi-finished land redistributions were not completed in Slovakia and in those cadastral districts (hereinafter referred to as "c.d.") in which land redistributions were carried out, unfortunately land register insets consequently were not transformed. Authentication was carried out immediately after new lots were set out or during the setting process. Citizens began to cultivate the holding, but the land register records were not carried out which at the present time causes substantial issues in certification of titles. It concerns 36 c.d. out of the total number of 3550 c.d. in Slovakia. It is important to note that the land redistributions were a considerable interference to the former structure of significantly fragmented holding of the period (Hudecová, 1997).

4. SOCIALIST RECONSTRUCTION OF SOCIETY, A NEW PERSPECTIVE ON LAND CONSOLIDATION

After the World War Two the state of land cadastre and land register had poor quality. On one half of the territory the land register was not established, considerable part of technical documentation from land consolidation was not reflected in the land register by means of entering proceedings, considerable part of land redistributions had not passed through entering proceedings, war events resulted in the loss or destruction of the land cadastre and of land register documents covering the space of 376 c.d. (10 %) and division of real estates into joint-owner shares reached socially unbearable extent.

4.1 Common agricultural structure of large-scale collective farms

As a result of social development essential changes occurred in the land tenure as well as changes in the recording of the rights to land. The intabulation principle of land register was discontinued. Since then the state recorded in the land register started to be different from the real legal status, even in the space where the land register had been kept and updated properly until that time. Efforts to enforce the land use relations to the collectivized forms of the use of agricultural and forest land in contrast to traditional ownership relations were accompanied by simplified view of recording tools (Horňanský, 1995).

Introduction of the right to a collective farm use, almost all land in private ownership was transferred to the agricultural and forest organizations' use. Ownership right was formally

retaining - was either recorded in the land register, or in allotments or acreages, but without subsequent updating.

4.2 Land consolidation during socialism period

Legal measure concerning the land tenure was the act from the year 1948, which dealt with the consolidation of land in massive fields for collective farming. After this Act there were published several legal amendments regarding economical and technical land consolidation – socialist land consolidations.

One of the functions of these socialist land consolidations was attenuation of owner's awareness regarding the relevant ownership rights and to prefer land use relations regarding the real estates both in collectivized rural and urban areas (Hudecová, 1997).

5. INJUSTICE AGAINST PROPERTY OWNERS FROM THE PERIOD 1948-1989

The entire activity of legal relations' recording in the socialism period was related only to urban area and special parts of rural area excluding collectivized parts of agricultural or forest land.

From the perspective of the owner the 40-year period meant the exchange of two generations. The connection of Slovak peasant to the land has been ruptured, as in many states with similar history (Vranken et al., 2004). Owners did not overcome the deep-rooted prejudices and bad experiences from the past, when any interference with the arrangement of plots had a restrictive nature. Fragmentation of land ownership is so great as to preclude their use, the extent of fragmentation of land ownership in Slovakia in many cases reached such a situation that a fraction, by which a joint-ownership share is expressed, is difficult to read for a laymen, its real value is hard to imagine and there is no sense in dealing it on the real estate market. Plots do not have ensured access from public or local roads have unsuitable shape and small size, and are also joint-owned with several joint-owners. Owner remains the only option - to keep land in lease the prior user.

In 3550 c.d. of the Slovak Republic 12.5 million plots were recorded at the beginning of 1993 of which 9.6 million were in rural area. The average area of land in the rural area was 0.45 ha, with an average of 12-15 joint-owners per one parcel.

The principal step on the journey to the removal of ownership fragmentation and the differences between legal and real situation was the emancipation of all sorts of ownership. Various acts were adopted for the purpose of relief of certain property injustices. Land consolidation was designated to be one of the tools to resolve the situation.

6. LAND CONSOLIDATION IN TODAY'S SLOVAKIA

In the year 1991 the Act No. 330 on land consolidation, arrangement of land property, land register offices, land fund and land communities has been put into force. In accordance with this Act the term land consolidation is understood as consolidation, division, dislocation and arrangement of lots on the basis of ownership and land use relations and related execution of the field, communication, water control management, re-cultivation and fertilization measures. At the same time in the field are established also ecological measures in order to

rationalize agricultural operation conditions and to secure stability and aesthetic look of agricultural land.

In accordance with the Act the role of the state that is connected with the restoration of function and arrangement of land property is provided by district offices that perform state administration in section of land consolidation (hereinafter referred to as land departments) (Hudecova et al., 2003).

6.1 Land consolidation procedure

Land consolidation is, as a rule, carried out at a time in the whole rural area of c.d. The owners and users of the lots that are subject to land consolidation participate in the land consolidation process, the owners of the rest of agricultural real estate, which can be found within the perimeter, persons, whose ownership or other rights may be affected by land consolidation, and the Slovak Land Fund. The Slovak Land Fund administers agricultural and forest real estates and the lots that are not attested by the ownership right. It represents unknown owners and owners who did not claim their rights.

After the decision regarding the legal validity of the license or land consolidation decree, the land department initiates works in the field of the valuation of lots and permanent vegetation, making the land owners and users' list and procurement of other necessary initial grounds. On this basis the register of initial status is compiled; it consists of geodetic and description data on the lots and related legal relations. Land department will issue the register of initial status and deliver every known participant the entry of his lots that are subject to land consolidation, including joint-ownership shares and their price. The participants may lodge objections. The list of lots, whose rights in the land consolidation are represented by the Slovak Land Fund, is a special part of the register of initial status and remains accessible for public consultation during the period of 10 years.

For the lots that are subject to the land consolidation the owners are due to receive "compensation", corresponding to the price of the lots in the form of substitute lots or in money. In choosing the substitute lots the land department takes into consideration also the operational and economic conditions of all participants and circumstances, which have considerable influence on the use, valuation and profit of the lots. The type, acreage, value and economic state of substitute lots should correspond to original lots, while the advantages that are gained by land consolidation are taken into consideration as well.

After the initial background and declared principles of substitute lots location are approved, the land department orders the development of the land consolidation project. The project contains the draft of new arrangement of the territory in the form as follows:

- plans of public and common facilities;
- location of substitute lots, their allotment to owners and the list of compensations in money, or, as the case may be, in securities according to the claims for compensation (dislocation plan);
- local territorial system of ecological stability in the perimeter of land consolidation;

The land consolidation project will be published. The participants in the land consolidation can submit objections within 30 days. If, after the objections had been discussed, the two thirds of participants state their agreement with the project, the project will be approved and preceded. By the day of the valid decision on the execution of land consolidation project,

either the title to the lots or the rights for compensation according to the dislocation plan are acquired. The dislocation plan is a document, on the basis of which the changes in real estates cadastre will be performed. The land department will arrange for new dislocation of lots to be set out in the field (Hudecová, 1997).

The result of land consolidation through valid decision of the land department is the establishment of rights to lots leading to changes; therefore it is extremely important to abide by all legal provisions as well as special legislation for real estate cadastre.

7. INDICATORS OF LAND CONSOLIDATION EFFECTIVITY

Land Consolidation in Slovakia unfolded slowly. Table 1 – table 6 displays documents processed by the Ministry of Agriculture and Rural Development of the Slovak Republic as of 31.12.2013. In tables land consolidation project is referred to as "LC".

Overview of completed land consolidation projects is shown in Table 1. In 2014, 165 projects are in process out of which 50 are expected to be finalised in 2014.

Table 1

Overview of completed land consolidation

| Number of LC | Year of completion | | | | | | | | | |
|--------------|--------------------|------|------|------|------|------|------|------|------|----------|
| | 1995 - 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | In total |
| SR | 15 | 2 | 8 | 25 | 23 | 35 | 48 | 55 | 50 | 261 |

Table 2 displays data regarding the area of land consolidation compared to the rural area of the c.d. as well as the whole area of 260 c.d. where land consolidation was completed.

Table 2

Overview of the area of land consolidation perimeter

| Finalised LC | Area [ha] | | | Proportion of LC area to rural area |
|--------------|--------------------|---------|---------|-------------------------------------|
| | Cadastral district | Rural | LC | |
| SR (260) | 320 489 | 301 252 | 213 481 | 70,86% |

The table shows that on average 71% of rural area is processed through land consolidation. The remaining 30% is composed of plots such as roads, railways, farm yards, cemeteries, archeological sites, garden allotments among others. In the recent years it is preferred to include the maximum of rural area into the land consolidation process.

7.1 The decrease of number of plots in c.d.

Table 3 displays the number of original plots which will be cancelled in comparison to the number of new plots. The result of land consolidation is the decrease of number of plots by circa 30%.

Table 3
Overview of original and new plots

| Finalised LC | Number of plots | | Proportion of new plots to original plots |
|--------------|-----------------|---------|-------------------------------------------|
| | Original | New | |
| SR (260) | 556 787 | 378 468 | 67,97% |

7.2 The decrease of number of ownership relations

Table 4 presents the number of owners and the number of ownership relations before and after land consolidations. The decrease of number of ownership relations by circa 70% is a significant positive effect of land consolidation process.

Table 4
Overview of the number of owners and the number of ownership relations in land consolidation projects

| Finalised LC | The number of owners and the number of ownership relations | | | Proportion of new to original ownership relations |
|--------------|------------------------------------------------------------|------------------------------|-------------------------|---------------------------------------------------|
| | Owners | Original ownership relations | New ownership relations | |
| SR (260) | 224 671 | 5 435 074 | 1 636 699 | 30,11% |

7.3 The decrease of the number of joint-owners per one plot and the number of plots per one owner

The fragmentation of land ownership is defined by two indicators. First indicator is the number of joint-owners per one plot and second is the number of plots in which the owner owns a joint-ownership share.

Table 5 shows the decrease of land ownership fragmentation. The analysis of 260 finalised land consolidation projects concludes that the decrease of over 50% occurred regarding the number of joint-owners per one plot (from the average of 9.76 to 4.32) and the decrease of circa 70% regarding the number of plots per one owner.

Table 5
Overview of the decrease of fragmentation in land consolidation projects

| Finalised LC | The number of joint-owner per one plot | | The number of plots per one owner | |
|--------------|----------------------------------------|-----------|-----------------------------------|-----------|
| | Original state | New state | Original state | New state |
| SR (260) | 9,76 | 4,32 | 24,19 | 7,28 |

7.4 Overall SR indicators regarding the number of ownership relations, the average number of plots per one owner and the average number of joint-owners per one plot within total rural area

Table 6 shows overall SR indicators regarding the number of ownership relations, the average number of plots per one owner and the average number of joint-owners per one plot within total rural area which can be compared to the results of land consolidation.

Table 6

Overview of the number of ownership relations, the average number of plots per one owner and the average number of joint-owners per one plot in total SR rural area

| Region | Number of ownership relations | Number of plots per one owner | Number of joint-owners per one plot |
|------------------------|-------------------------------|-------------------------------|-------------------------------------|
| Bratislava | 3232312 | 14,61 | 8,13 |
| Trnava | 7016989 | 14,04 | 8,68 |
| Trenčín | 9831553 | 17,18 | 9,88 |
| Nitra | 10179068 | 16,39 | 8,28 |
| Žilina | 23130295 | 30,80 | 16,46 |
| Banská Bystrica | 12466088 | 19,69 | 9,15 |
| Prešov | 21750221 | 27,64 | 13,73 |
| Košice | 10338762 | 15,42 | 9,98 |
| Slovak Republic | 97945288 | 20,59 | 11,11 |

7.5 Efekt pozemkových úprav pre kataster nehnuteľností

Land consolidation effect is directly measurable even for the resort of Geodesy and Cartography. Each project improves the cadastral documentation. In particular the most prominent benefits include the alignment of the actual state, the legal state and registered state and creation of new cadastral map of the highest positional accuracy (Hudecová, 2010). Already 260 cadastral documentations out of 3550 were updated as a result of land consolidation.

7.6 Plan of action for development of agriculture for period 2014 – 2020

Government of Slovak Republic issued a Plan of action for development of agriculture for period 2014 – 2020 (Ministry of agriculture, 2014) 4 key problem areas of current state of agriculture were defined. The solution of one of these problems is dependent upon finalization of land consolidation.

- The high concentration of agricultural production in Slovakia leads to cumulating of majority of EU subsidies into minority of applicants.
- The crisis of Slovak agriculture is further deepened by an unresolved issue of interdependency between primary agricultural products and processing industry.
- Regarding forestry the main issue is accessibility to EU subsidies especially for state forestry entities which are the largest managers of Slovak Republic forests.
- The rapid decline of total employment in agriculture is recorded in comparison to the beginning of economy transformation period – circa 80% aggregately. While in 1994 10.2% of all employed worked in agriculture sector this proportion decreased to 4.6% in 1998. Currently 2.2% of all employed work in agriculture which is 1% below the average of EU 15.

8. DISCUSSION

The result of land consolidation is a new land tenure structure and new rural development infrastructure, enhanced rural environment, enhanced rural social and economic condition, improved accessibility to a plot. Outcomes of only a few of these can be quantified. In Slovakia only after the year 2010 the number of finalized land consolidations rose significantly (table 1) and it is too soon to properly evaluate the effectiveness of land consolidation with regard to development land markets (purchase, lease and sale of land) and farm restructuring.

8.1 Agricultural land market

Agricultural land market in Slovakia is obscure. The lack of information about the current situation and developments in land market is a result of non-existence of statistical research. (Buchta, 2012).

The monitoring of the transactions on the agricultural land market in Slovakia by Research Institute of Agricultural and Food Economics in Bratislava began in six selected districts in 2001. According to the institute in the year 2002 there were 1976 sales of a total area 2109,5442 ha of agricultural land, which represents 0,63 % of the total agricultural land area (Hudecová et al. 2003). This ratio was comparable to the Czech Republic at the time where purchase and sale in the year 2001 and 2002 was 0,13 % and 1,83 %, respectively (Pavličková et al. 2007).

The monitoring of the transactions on the land market has been running in twelve districts of Slovakia since 2007. The basis for monitoring of the land market are data from actual sales contracts obtained from Cadastral registry.

In the recent years the total area of sold land increased considerably. In 2010 the area of sold land grew – reaching a historical peak – 10 thousand ha of land. This number represents more than 3% of total agricultural land area. The majority of sold plots (92 351) were within the size category of up to 1 ha. Czech Republic already reached this ratio (3%) in 2005 (Pavličková et al. 2007).

8.2 Farm restructuring

The country's agricultural sector was characterized by large-scale farms both before and after the regime change in 1989. The major part of the land area was utilized by large farms. One of the reasons behind this phenomenon is the low portion of land ownership in proportion to the sum of land managed by agricultural entities. 75% of agricultural land is owned by private individuals and 25% of agricultural land is managed by Slovak Land Fund which remains under state supervision. Average Slovak farmers rent more than 90% of agricultural land they cultivate. This situation is rare - in other EU countries land is reaching 50% of total assets of agricultural entities. The larger the managed area of agricultural entities is the disproportion becomes more alarming. The median of area managed by an agricultural entity is 500 ha which is by far the largest within EU (Gerber et al. 2005).

9. CONCLUSION

Over the past years, social and economic decline in rural areas has intensified in Slovakia. A precondition for upheaval of this decline is the implementation of new policies in relation to the fundamentals of land ownership and management. In addition to addressing the problems of land ownership fragmentation, land consolidation should include measures to improve agricultural production and employment, legislation to protect land ownership rights and acknowledge environmental and sustainability considerations. The consolidation of land ownerships may be an effective land management instrument which not only addresses the problems of land fragmentation, but also, if applied sensitively, may be an instrument for delivering sustainable rural development in a wider context.

The results that we have reported in this paper show that although the agricultural transition is still in progress, we have achieved considerable results.

REFERENCES

The Act No. 330/1991 on land consolidation, arrangement of landed property, land register offices, land fund and land communities.

Bandlerova, A., Marisova, E., 2003. Importance of ownership and lease of agricultural land in Slovakia in the pre-accession period. *Agriculture Economics – Czech*, 49 (5), 213–216.
<http://www.agriculturejournals.cz/publicFiles/59430.pdf>.

Horňanský, I., 1995. Registering of original parcels connected to large blocs due to the collectivization of agriculture and their titles in real estate cadastre (In Slovak): *Geodetický a kartografický obzor*, Prague, 41(83), 1995, No.4, 81-84.

Hudecová, E., 1997. Land consolidation in Slovakia, In: 25-th international symposium on policy of land modifications for special applications, Székesfehérvár, Hungary.
<http://www.pce.sk/clanky/pozuprav.htm>

Hudecová, E., 2010. Land consolidation effect for real estate register. In: 10-th international conference on real estate, Karlove Vary, Czech Republik (in Slovak).

Hudecova, L., Csókásová, T., 2004. Country report: Slovakia. Budapest, Central European Land Knowledge Center.

Pašakarnis, G., Maliene, V., 2010. Towards sustainable rural development in Central and Eastern Europe: Applying land consolidation. *Land Use Policy* 27(2010), 545–549,
<http://dx.doi.org/10.1016/j.landusepol.2009.07.008>.

Ministry of Agriculture and Rural Development of Slovak Republic, 2014. Plan of action for development of agriculture for period 2014 – 2020. Material to the Government of the Slovak Republic.

Vranken, L., Noev, N., Swinnen, J., 2004. Fragmentation, abandonment and coownership: transition problems of the Bulgarian Land Market. *Quarterly Journal of International Agriculture* 43, 391–408.

Hungary Act No. VI/1836 Articles regarding redistribution of pastures.

Hungary Act No. VIII/1840 Articles regarding redistribution of pastures.

Hungary Act No. LIII/1871] Articles regarding copyhold redistributions.

Hungary Act No. VII/1908, Act No. XXXIX/1908 Articles regarding land consolidation and implementation of the uniform adjustments for the entire tenure.

Buchta, S.: 2012. The Farm Census 2010 finding in the area of business structure and work force. *Economics of Agriculture*, volume XII. 1 / 2012, 127-133 (in Slovak).

Pavličková, K., Spišiak P.: 2007. Formation of Market with Agricultural Land in Central-European Space. *GEOGRAPHIA CASSOVIENSIS I. vol. 1 (2007)*, 145-150 (in Slovak).

Gerber L., Giovarelli, R.: 2005. Land reform and land markets in Eastern Europe. *FAO - Land Reform: Land Settlement and Cooperatives (1)*, 64-77.
http://www.fao.org/sd/dim_in1/in1_040901_en.htm

BIOGRAPHICAL NOTES

Hudecová Ľubica, Ing., PhD. worked at Authority of Geodesy, Cartography and Cadaster of Slovak Republic from 1996 to 2006. Her field of expertise was restoration of land registry and land consolidation. From 2006 to 2009 author worked at the Ministry of Agriculture and Rural Development of Slovak Republic in the field of land consolidation. From 2009 author works as a lecturer at Slovak University of Technology in Bratislava – Faculty of Civil Engineering at Department of Mapping and Land Consolidation. As a lecturer author participated at a variety of seminars and work-shops in Slovakia as well as abroad (Netherlands, Hungary and Czech Republic).

CONTACTS

Ing. Ľubica Hudecová, PhD.
Slovak University of Technology in Bratislava – Faculty of Civil Engineering
Radlinského 11, 813 68
Bratislava
SLOVAKIA
Tel. +421903786614
Email: lubica.hudecova@stuba.sk
Web site: stuba.sk