

Land Consolidation Considered as a Tool of Rural Landscape Development in Poland

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SUMMARY: Still well preserved rural landscape in Poland should be recognised as an important national wealth. Land consolidation which is forced in Poland by extremely scattered spatial structure of farms may threaten the unique cultural and aesthetic values of the landscape. On the other hand land consolidation can be used as a powerful tool for rural landscape development. The paper presents a set of landscape studies proposed to be included to the procedure of land consolidation. First is routine inventory of landscape resources. Another two studies: one of view aspects and the second of landscape accessibility are proposed to produce the map of view-connections, view-axes, view-points etc. Such studies are contributing the concept of landscape development during land consolidation. Author concentrates attention at another set of studies important for the land consolidation procedure: a study of preserving and transformation of landscape components, study of the landscape use including the limits of ownership rights, and study of value of the landscape components. Considering that land consolidation procedure consists in equivalent land re-allotment, the last study may have exceptional importance for successful preserving the landscape goals in land consolidation projects.

STRESZCZENIE: Ciągłe jeszcze dobrze zachowany krajobraz wiejski w Polsce powinien być uznawany jako ważne bogactwo narodowe. Scalenia gruntów, które są w Polsce wymuszone niezwykle rozdrobnioną strukturą przestrzenną gospodarstw, mogą zagrażać unikalnym wartościom kulturowym i estetycznym krajobrazu. Z drugiej strony, scalania gruntów mogą być wykorzystane jako potężny instrument rozwoju krajobrazu. W referacie przedstawiono pewien zbiór studiów krajobrazowych z propozycją ich włączenia do procedur scaleniowych. Po pierwsze, rutynową inwentaryzację zasobów krajobrazowych. Następnie, dwa studia: jedno dotyczące powiązań widokowych i drugie – ‘udostępniania krajobrazu’, które mają stanowić podstawę do sporządzenia mapy powiązań widokowych, osi widokowych, punktów widokowych itp. Takie studia mają współkreować koncepcję kształtowania krajobrazu w trakcie scalania gruntów. Autorka koncentruje uwagę na jeszcze innym zbiorze studiów ważnych w procedurze scalania gruntów: studium zachowania i transformacji elementów krajobrazu, studium użytkowania elementów krajobrazu - włączając ograniczenia praw własności - oraz studium wartości elementów krajobrazu. Uwzględniając, że procedura scalania gruntów polega na ekwiwalentnej wymianie, ostatnie studium może mieć wyjątkowe znaczenie dla zachowania celów krajobrazowych w pracach scaleniowych.

1. Introductory remarks

We are in Poland just in starting point of multi-purpose land consolidation processes. Although, land consolidation works in Polish lands have long tradition, they have been aimed at creation of suitable conditions for farming in agriculture and forestry through improvement of spatial structure of farms, rational formation of land expanses and adjustment of the plot borders with infrastructure system (reclamation network, roads network etc.) as well as terrain relief.

Farm-structure in Poland has been formed during centuries by traditional, relatively primitive farming. Inheriting land by all children has caused considerable scattering of the farm-structure. For that land consolidation is nowadays an urgent economic necessity. Also the need of large infrastructure projects, like highways, support land consolidation and land re-allotment. Land consolidation process in Poland is left on surveyors' hands. Last years the volume of land consolidation works is not sufficient due to the lack of financial means in a country's budget¹.

Since several years ecological issues in land consolidation have been trendy very much also in Poland. Such consolidation is aimed at adjustment of plot borders with eco-outlines contributing environment protection. It means that such an approach is restricted into postulate to consider ecological issues in general plan of land consolidation. Landscape architect is asking if such an approach is sufficient². Whether rural landscape, its planning and protection should be superior aims of action in which land consolidation should play the role of the tool for achieving landscape and environmental aims. Such an approach is also justified by the consciousness that the Polish rural landscape is one of valuable Polish contribution to the EU.

One should consider specific dilemma of land consolidation: on the one hand, land consolidation works are necessary from economic point of view, on the other, they can play the role of killers of the cultural landscape. Scattered parcels, with naturally and traditionally formed network of boundary strips are essential for both eco-system and landscape.

2. How to make land consolidation an effective tool of rural landscape development

Rural landscape development in Poland have a chance to be effective if it is combined with land consolidation. Landscape architects and other professionals are able to make proper studies and prepare guidelines for rural land development fulfilling requirements of preserving and developing unique cultural and aesthetic values of the Polish rural landscape.

Below a set of proper studies is specified³:

- 1) inventory of landscape resources,
- 2) ecological study,

¹ KOZLOWSKI, 2002,

² compare PULECKA, 2003,

³ see: PULECKA 2004a, 2004b,

- 3) view-aspects study,
- 4) study of landscape accessibility,
- 5) study of landscape use (limits of ownership rights),
- 6) study of value of landscape elements,
- 7) study of preserving and transformation of landscape components.

2.1. Inventory of landscape resources

Inventory process should be the source of characteristics and locations of particular landscape components. The following features should be explored during the course of inventory:

- ü natural and anthropogenic landscape elements and structures such as characteristic plant communities,
- ü monument buildings and structures,
- ü objects of tourist interests,
- ü terrain topographic and geological features and uniqueness,
- ü tourist infrastructure, etc.

Proper inventory documentation should be done in the field. Object locations should be plotted at the cadastral or topographic map. It is necessary to register coordinates of the objects important for their precise location during the consolidation procedure. Nowadays the simplest location method is GPS. During inspection of the objects in the field, first approach to their valuation could also be done. The area of inventory should be wider than the limits of the area under land consolidation. It should be rather limited by natural landscape borders generally broader than the administrative borders.

2.2. Ecological study

Ecological elements of the landscape structure should be identified during the course of the study. The standard ecological study should provide the land consolidation team with information concerning particularly⁴:

- ü habitats of unique and deleted species,
- ü terrain devoted for preserving landscape, and
- ü water relations as concerned to water-courses, erosion and sedimentation areas, wetlands, swamps, flooded areas etc.,
- ü terrain configuration.

Result of the studies is creating a map of ecological network useful for recovering such a network and for developing new system of patches and corridors. Relationship with the network NATURA 2000 pre-designed in the territory of Poland should be observed. Ecological study should be executed by interdisciplinary teams of experts in ecology, phytosociology, hydrology, physiography and other natural sciences.

⁴ following the Dutch, German and French patterns (compare PULECKA, 2004b),

2.3. View-aspects study

View-aspects study consists in identification of landscape elements such as:

- ü particular spots, and
- ü visual and functional junctions.

Two kinds of particulars should be taken into account:

- *spatial dominants* – objects attracting observer’s attention, dominating the landscape because of their dimension or location (e.g. church towers standing out the surroundings, water-towers and other objects, old solitary trees, manor-houses and parks, their remainders, graveyards etc.),
- *particular spots* – small objects having some historic or cultural value (e.g. monuments, chapels, wayside shrines, insurrection graveyards, erratic boulders etc.), attracting observer’s attention. They are usually situated at the important space-parts, such as: country-way-crosses, entering villages, by bridges, dykes etc.,

Identification of *particular spots* should be followed by definition of ‘visual junctions’, ‘directions’ (views, view-axes, panoramas) and ‘functional junctions’ (roads) between particular spots. Depending on observer state, whether he is stationary or moving, the ‘observer spots’ and ‘observer lines’ should be specified. The view-structure should be defined, i.e. what landscape elements will appear to the observer from particular spots and observer points or lines (e.g. view of church tower, solitary tree, village panorama etc.).

The study is the basis to compile a map of view-connections, view-axes, view-points⁵ etc. Such a map is to serve as a reference for guidelines concerning landscape development and landscape protection. A map should contain existing observer points and lines as well as directions on which panoramas and view-axes are unfolded. Specific terms to preserve a certain view should be determined (e.g. preventing from covering a view on the lake by building development in the foreground). The map will be helpful for further designing the footways, bridle paths, cycle tracks etc. during the land consolidation project.

2.4. Study of landscape accessibility

Modern approach to the landscape says that the landscape is understood as a boundless common good, visual property of everybody who go through it. Such an approach may create a sort of conflict between common accessibility of the area and preserved by Polish Constitution private property rights. Sooner then latter the major question concerning the rural landscape also in Poland will be a necessity to balance between landscape protection, the use of landscape components by the land owners and putting landscape within society’s reach. The law is in Poland not as much restrictive as in UK or USA. However walking

⁵ view-points – the specific spots on which a particular view can be observed: panorama or point of view-axis while observer is stationary (unmoving),
view-axes – the roads, tracks on which a moving observer is able to look around continuously for panoramas, goals of view-axes etc.

across the country, through Polish villages, particularly those at suburban or tourist-attractive areas, one can see notices “private, no entrance”. A problem escalation is expected soon. In the regions of attractive landscape, in the spots of exceptional view-aspects, land plots are retired, fenced and therefore excluded from public access. More and more common problem can be found in lake- and river-sides where summer houses with fences prevent public from access to water.

Considering landscape as a common good, in the ‘*study of landscape accessibility*’ - preceding land consolidation project - proposals of public footways, bridle paths, cycle tracks and other point and lines of landscape observation and access to the objects should be scheduled⁶. That is a way to prevent from fencing and closing the access to the landscape.

2.5. Study of landscape use; limits of ownership rights

The study consists mainly of the limits of ownership rights. It is aimed at identification of those landscape structures and elements which exceptional value from ecological, historical/cultural or visual point of view require a special way of use. The limits resulting from the above mentioned reasons should be included to the guidelines of post-consolidation land management. As examples: the area on which existing plants should be protected, area of plants habitats important for bio-diversity of the region, extreme line of forestation (compact, linear etc.), limits in building development to prevent from screening the landscape view, etc. The limit of ownership rights may be highly differentiated. It may be only servitudes of passage to get the lake- or river-side. A pathway for walking or cycling. Entrance to the wooden-made platform to observe or make photos of wild animals. To mow meadow only on certain time due to the nestles of some birds; to scythe down a bog meadow (excluding use of any machinery) etc., etc.

All the limits should be displayed at the map of use limits and should be taken into account while preparing the project of land consolidation and land re-allotment. The limits may contribute the value of the certain land plot.

2.6. Study of value of landscape components

Land consolidation is based on re-allotment procedure. To accomplish such re-allotment some kind of value of land plots must be estimated. In traditional approach a set of renewable values was worked out in such a way to comprise particulars of the plots. Among those particulars soil quality and distance from village settlement were the main factors of the land value. Nowadays a market value is proposed at least for the plots of permanent crops including orchards and other perennial crops⁷. The landscape issues are strongly supporting the use of market value for interchange procedure. The problem is how to estimate the market value of the landscape components. On the other hand, the market value is the only value

⁶ compare with UK ‘*The Act on the Right of Way*’

⁷ see WILKOWSKI, 2002

enabling us to consider mentioned above limits in ownership rights. All property valuation methods have found their role in landscape valuation procedures. We could not go further than that in this paper.

2.7. Study of preserving and transformation of landscape components

The studies reported before were to define and recognise the features of the area under land consolidation important from the landscape architect point of view. Each of landscape components performs its function effecting other components and being influenced by them. Any changes of an attribute of a landscape component resulting from designer decision will have to produce changes of other components of the landscape structure.

The study of preserving and transformation of landscape components is aimed at working out alternative scenarios of potential future landscape development dependent on changes in the structure of land use and land ownership. Time range of the scenarios is the interval between consecutive land consolidation. Landscape architect should consider conditions of landscape development resulting from other studies. The following problems should be taken into account:

- relations between natural and cultural landscape forms,
- connection of settlement forms and terrain natural features,
- restoring possibilities of historical landscape structures,
- counteraction against landscape globalisation and decay of regional landscape forms.

Potential conflicts between different functions (ecological, economic, utilitarian, cultural, aesthetic etc.) should be minimised.

3. Conclusive remarks

Rural landscape development in Poland have a chance to be effective if several conditions are fulfilled⁸. The most important of them have been listed below:

1. Without increasing ecologically and landscape-oriented consciousness of the society the use of land consolidation works for rural landscape development in Poland may fail. The most important is landscape-oriented consciousness of participants of land consolidation process. The people of the land-consolidation area should appreciate the value of the landscape of their area, they should be convinced that landscape-oriented land consolidation will produce future profits: attracting visitors and creating additional work places. Such a consciousness give a chance that the local people will accept the landscape aspects of land consolidation, and that they will observe recommendations concerning the landscape accessibility and landscape use limits.
2. Who should incur the costs connected with rural landscape development and landscape preservation in Poland ? Generally speaking, those who will take

⁸ compare PULECKA, 2004b,

advantages of landscape-effects of land consolidation. First, local people: land consolidation participants and local society, and secondly, society as such getting the area for recreation. The costs should be spread over society: land consolidation participants should devote land for common landscape purposes, local society should devote part of local taxes providing extra-finances for landscape-oriented consolidation works and landscape conservation, whole society should support pro-landscape activities accepting the system of landscape-fees while visiting the area.

3. How to get land for landscape development goals on the area of land consolidation ? In Poland, firstly, the land owned by the Agency of State Rural Ownership, secondly, land deduction from consolidation participants for public purposes⁹. Traditional land-communities, still existing in Poland, create very interesting possibility of gaining the land for landscape purposes.
4. The scattered structure of farms in Poland will impose a big volume of land consolidation works. For that reason land consolidation issues should be disseminated over professionals close to the landscape development specialisation.
5. There is a need in Poland to create proper legal regulation concerning rural landscape protection and development.

BIBLIGRAPHY:

- BERG VAN DEN; M. C., 1998: Landscape planning, w: Improving Land Consolidation System in Poland, ILIS/PHARE (p 9312-05-05), DLG Utrecht,
- KOZLOWSKI J., Polish experiences in the Field of Land Consolidation; Presentation to the FAO Workshop, Prague, Czech Rep., May 11-16 2002,
- PULECKA, A., 2003: Rural Landscape Planning in Poland – Surveyors and Landscape-Architects Cooperation; FIG Working Week 2003, Paris, France, April 13-17, 2003,
- PULECKA, A., 2004a: Landscape Planning. A Contribution to the Rural Land Development; FIG Working Week 2004, Athens, Greece, May 22-27, 2004,
- PULECKA, A., 2004b: Landscape Development in a Process of Land Consolidation; *in Polish* “Kształtowanie krajobrazu w procesie scalania gruntów”, PhD Thesis, Warsaw University of Technology, Faculty of Geodesy and Cartography, 2004,
- VROOM, M. J. 1986, The perception of dimensions of space and levels of infrastructure and its application in landscape planning, *Landscape Planning* (12) Elsevier,
- WILKOWSKI W., 2002: (Methodology of valuation of agricultural lands being a part of farms included to land consolidation), *in Polish*: “Metodyka określania wartości

⁹ land consolidation participants agreement is necessary; proper legal regulations are necessary in Poland,

gruntów rolnych wchodzących w skład gospodarstw rolnych objętych postępowaniem scaleniovym”, Przegląd Geodezyjny, 7, 2002.

BIOGRAPHICAL NOTES

Adrianna Pulecka graduated from the Faculty of Landscape Architecture at the Agricultural University in Warsaw. At present, she is a student of PhD-studies at the Warsaw University of Technology Faculty of Geodesy and Cartography. She just completed her doctor thesis on management and protection of the rural landscape in the course of transformation of spatial structure of rural areas in Poland.

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