

Methodology of Designing Rural Areas Development Projects on the Example of the Village of Mielnik Site

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Key words: Land management, Rural Areas Development Project

SUMMARY

The development of rural areas has become a priority when Poland joined the European Union structures. Significant European funds were allocated to rural development in the years 2007-2013. Designing a Rural Areas Development Project is a condition of finding rational solutions to rural development issues. When designing such a project, the main nature, landscape, and technical criteria must be taken into consideration.

This work presents the result of studies on the methods used in designing a Rural Areas Development Project for a selected municipality which addressed land use, environmental, landscape, design and technical solutions.

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INTRODUCTION

The development of rural areas is an international challenge at the level of management, development and protection of the Earth's surface. The more advanced organisation of states and nations, the higher diversification of the use and management of land at the organisational, legal, and technological plane. The development of rural areas is an effect of current social and economic objectives, a social system of values, and of the institutional structures in the given country.¹ The development of rural areas picked up momentum in the 1970s in Western European countries with a long tradition of land consolidation.

The concept of Rural Areas Development was introduced in Poland by the November 28, 2003, Act on supporting the development of rural areas with money obtained from the European Agriculture Guidance and Guarantee Funds. Issues involved in property management, rural property included, are often assigned to various ministries. Many ministries have made legislative initiatives in this field often succeeding in having the Sejm (Parliament) adopt laws on property management and protection of selected areas which also defined forms of that protection and their financing sources

These are the reasons why the term Rural Areas Development started to be used in relation to rural areas in Poland, just like it is in the European Union countries.

1 .RURAL AREAS DEVELOPMENT PROJECTS IN POLAND

Work on designing a Rural Areas Development Project should be harmonized with municipal studies on the conditions and directions of local management. A Rural Areas Development Project should, in the first place, cover those areas in a municipality which require land consolidation for the following reasons:

- factors related to the principles of the protection of the environment, its resources, and nature protection,
- areas to be developed for public purposes with projects of local and trans-local scale,
- areas where the structure of farms shows a large number of small plots and an unfavourable localisation of these plots in relation to the farmsteads.

Terrain covered by a Rural Areas Development Project should show continuity over a significant area comprising several or over a dozen adjoining properties. In its part relating to

¹ Thomas J. 2006 „Landentwicklung-international” Materials for the FiG Congress, Munich 2006

directions of changes in the land use structure, a Rural Areas Development Project should indicate priority areas, that is, areas which should in the first place be subject to:

- land consolidation work,
- work on a local land use plan.

Areas qualified to be covered by a Rural Areas Development Project should be discussed with village chiefs and town mayors from the following perspectives:

- co-ordination with the existing or planned Studies on the Conditions and Directions in Municipal Land Use,
- procedures involved in the commencement and completion of the design of a Rural Areas

Development Project which are prescribed in the land use Act,

- project financing sources,
- entities involved in carrying out the work.

A natural consequence of designing and implementing a Rural Areas Development

Project in the nearest future will be the commencement of land consolidation work in those areas (and their parts) in a defined order dictated by economic and technical factors.

The development of rural areas financed with money obtained from the European Agriculture

Guidance and Guarantee Funds focuses on solving the following three issues present in the rural areas:

- Improving the competitive power of farms through their restructuring,
- Improving the condition of the environment and landscape through better land management,
- Improving the living standards of rural population by promoting business diversification.

2. METHODS FOR DESIGNING A RURAL AREAS DEVELOPMENT PROJECT ON THE EXAMPLE OF A MUNICIPALITY

Designing a Rural Areas Development Project is a condition of finding rational solutions for the rural areas involved. The process of building a rural development project must address:

1. The main nature-related criteria which include:

- classification potential of arable land soils,
- environmental protection with elements of landscape shaping and cultural heritage protection
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2. Design and technical criteria which include studies in the localisation of nature objects.

3. Economic analysis of the implementation of a rural areas development project which comprise:

- a balance of property resources belonging to the State Treasury and municipalities,
- possibilities to increase the State Treasury's property resources under the structural pension programme and the Farmers' Social Insurance Act,
- potential income source of people living in rural areas.

4. Legislation-related criteria include:

- defining the legal status of a designed Rural Areas Development Project,
- defining entities competent to design a Project,
- procedures of granting legal status to a designed Project.

The implementation of tasks mentioned in sections 1 and 2 should comprise the following detailed solutions:

- a proposal of shaping agricultural and forest production space,
- a proposal of locating areas which require recultivation and land management,
- localisation of protected areas and protection zones for flowing and impounded waters,
- localisation of areas for village housing construction which where land consolidation and division of properties has to be done,
- farm tourism development programme as a contemporary source of farmer's income.

2.1 Inventory at Mielnik Municipality

The municipality of Mielnik, the southernmost rural commune of the Podlaskie province, covers the area of 196.24 km.² It borders with Belarus on the east, and on the south—with the Mazowieckie and Lubelskie provinces where the natural borderline runs along the River Bug.

The landscape of the Mielnik municipality is highly differentiated. It is cut in many places by deep erosion gorges running to the Bug valley. The highest altitudes are found at Usześć, near the village of Mielnik and they reach 204. metres above sea level. The biggest settlement and, at the same time, seat of the Mielnik municipality is the village of Mielnik. A special feature of the area is Late Cretaceous rock, until today extracted with the open-cast technology. The Cretaceous deposits at the area make up two broad highs in the form of mounds, one of them in Mielnik, 160 metres above sea level.

The localisation of the municipality under study in the eastern part of the country makes its climate strongly influenced by polar and continental air masses. Mielnik itself, situated on the right slope of the Bug valley, exposed to the south, has its own a bit different micro-climate with milder winters and hot summers which encourage people to come over and spend time on the river.

Historical objects which deserve mentioning at Mielnik include the Castle Hill (*Góra Zamkowa*) with ruins of a 15th-century castle and a impressive panorama over the River Bug. There is also a Roman Catholic parish church and an Orthodox church.

Soils

Most of the soils at the Mielnik municipality are glacial sands, gravels, and outwashes. By their mechanics, these soils are classified as clays or clay-sands strong or light deposited on clay. By their typology, the soils are not highly differentiated. They are dominated by various types of sand soils: podzols, brown, and sour soils. These soils are classified for the 5th and 6th quality category.

Forests

Forests and forest land in 2006 covered 12,410 ha or 59% of the municipality's total area. Private forests are highly fragmented in terms of forest bodies as well as ownership and they make up a "chess-board" of state-owned and privately-owned forests. This structure is found in all parts of the municipality.

The territory managed by Forest Inspectorate Nurzec at the Mielnik municipality comprises areas of the following protection categories:

- water retention forests—area 158.53 ha;
- forests on reference soils—area 447.76 ha;
- soil protection forests—area 32 ha;
- forest wildlife habitats—area 115 ha;
- nature reserve "Grąd Radziwiłłowski."

The Mielnik municipality area has the status of the "protected Bug valley landscape" and forests, apart from their biological and climatic functions, also offer recreation and leisure potential to the municipality.

Areas and objects under special protection

The following protection forms are present in the Mielnik municipality:

1. Nature reserves:
 - Góra Uszeście—area 12.06 ha. A flora reserve intended to protect and preserve xerothermal vegetation which includes a number of legally protected plants,
 - Grąd Radziwiłłowski—area 24.16 ha. A forest reserve intended to preserve a mixed forest including *Quercus robur L.* oak aged 140-170 years.
2. The "Bug Valley" protected landscape area with insignificantly modified environment, ecological balance, and high qualities of natural landscape.
3. A nature-landscape protection area "Głogi" which covers 59.61 ha, to protect part of the Bug meander with its terrain features, rare xerothermal flora, and high landscape qualities.
4. 7 nature monuments—trees and boulders.
5. 6 ecological enclaves covering a total area of 2.68 ha, in this wetland ecosystems—1.92 ha, and ponds—0.76 ha.
6. Strips of forest and bush running along hedges or growing amidst cropland.
7. The Bug ecological corridor which has acquired international recognition as the "Bug—European Ecological Corridor." It is part of the national and European nature system performing the following functions: ecological, bio-climatic, landscape, and recreational, and

it has a potential for angling, hunting, hiking, and other leisure activities related to these functions.

Land Use Structure

The land use structure at the Mielnik municipality is shown in the table below:

Type	2006		
	total	per- cent share	in this, private farms
Cropland:	6,834	34.8	5,758
-arable land	5,225	26.6	4,278
-orchards	28	0.1	26
-meadows	929	4.8	892
-pastures	652	4.3	562
Forests	11,391	59.1	2,516
Other land and wasteland	1,399	7.1	411
Total area	19,624	100.0	8,685

The land use structure is dominated by forests (59.0%) whose 78% is owned by the state. Cropland makes about 35% of the municipality's total area of which arable land makes the largest part (76.4%). Private land dominates the farming structure (84.3%). The quality of soils at Mielnik are classified as follows:

Soil category	Arable land and orchards		Grassland	
	ha	%	ha	%
III			6	0.4
IIIa	1	0.02		
IIIb	8	0.1		
IV			527	33.9
IVa	133	2.5		
IVb	912	16.9		
V	2,050	37.9	654	42.1
VI	2,303	42.6	367	23.6
Overall	5,407	100.0	1,554	100.0

2.2 Shaping Agricultural and Forest Production Space According to Soil Bonitation Potential

Keeping in mind the principles of sustainable development, we must make sure that the actual soil qualities will largely determine mapping out the following sectors in a rural area:

- integrated farm production,
- temporary farm production,
- intensive forest production.

2.2.1 Area used for integrated farm production

These areas include soils of the categories IIIa-IV b which fall into the 4th and 5th farming value complex. Soils of poor quality and diversified terrain surface are a barrier to farming development, hence the Mielnik municipality has not been included in the intensive farming development area. To provide better farming conditions there, land consolidation plans have been made for the municipality to make the lots larger and to create orchard blocks adjacent to the existing orchard. The planned new orchards will cover the area of about 40 ha (Mielnik). This approach allows to increase the total number of jobs in the area and is an alternative to traditional farming business.

Plans for the area also envisage:

- replenishing the missing vegetation (trees and brush) along hedges and building an integrated network of cropland trees with the view to obtain ecological corridors.

The project allocates about 25 ha of land for this purpose;

- modernisation of the existing dirt roads. The project provides for upgrading local roads by giving them gravel surface reinforced with concrete cobblestone to prevent water erosion. The project also includes planting 24 km of trees along some local roads. These strips will perform protective functions and improve attractiveness of the landscape.

The plans also provide for enlargement and adding biological finishing to water ponds found in the fields. About 5.0 ha of land has been allocated for this purpose. Integrated farm production areas will also provide some land for the protection and vegetation zones around the selected marshy ecological enclaves and other law-protected sites, such as, the reserve “Góra Uszeście” and the nature-landscape complex “Głogi.” The plans also envisage building cycle and horse-riding trails at some regions of intensive farm production, namely, in the vicinity of a chalk quarry (Biała Street): 1. Osłowo-Mielnik-Radziwiłłówka—and beyond the municipality borders, and 2. Maćkowicze-Osłowo-Mielnik-Sutno.

The above-described solutions will also play a soil protection role at this wavy landscape by reduce the amount and speed of run-off water. As a result, they will further diversify the landscape and improve conditions indispensable for the development of farm tourism.

2.2.2 Area used for temporary farm production

This area includes cropland class V and VI, bonitation category—6 and 9. It is a production reserve stimulated by food supply and demand mechanism on the local market, providing that food demand will occasionally grow together with the growth of farm tourism. Plans for the area under study speak of creating grassland blocks whose larger area is better for the development of ecological farming. This area covers altogether about 80 ha at lower parts of the Bug valley, while the project itself allocated some 70 ha for the purpose. The selected area will allow the operation of farms producing ecological food. There is demand for these foods which are selling well in health resorts of various kinds. The solution is an example of an ecological use of the natural soil potential which, in addition, offers good conditions for ecological farming and new jobs (ecological farming requires more human labour)

2.2.3 Area used for intensive forest production

The area used for intensive forest production was mapped out when the borderline between farmland and forests was being designed. It now includes groves present in the fields, forests, and farmland class VI which was classified for the 7th farming value complex. Apart from these, some arable land class V localised in the middle of the forest and, therefore, not good for farm production, has also been included.

In order to improve the land use efficiency, the project allocated some cropland for afforestation because these fields had an unfavourable shape or localisation which prevents their efficient cultivation. As a result, the forest complex also included some enclaves and semi-enclaves of arable soils bonitation class V, not larger than 2 ha in one piece. Designing the borderline between fields and forest allowed improving the land use structure in places where inventory showed strong mosaic-like fragmentation of cropland and forest resulting from the state and private property structure resembling a chess-board.

The project allocates about 80 ha of arable land directly adjacent to the existing forest bodies for the purpose of building the border between fields and forests and the forest-edge zones.

The main directions in developing forest areas at Mielnik include:

1. Protection of natural and economic values.
2. Preserving the continuity in time and space of forests which are part of the municipality's ecological system and ensuring their rational use for business and recreational purposes.
- 3.

The above-mentioned aims of forest management will require, in particular:

- preserving the forests as a component of natural landscape,
- forest management in line with programmes ensuring the protection of forests, preservation of their continuous management, and in line with the planned functions and management forms, whatever the ownership structure of these forests;

- partial conversion of some forest bodies to make them available for recreation/leisure purposes (mainly along Bug river banks); these may serve as a source of timber for the village’s building purposes, extra income source for mushroom and berry pickers, and a tourist attraction;
- stepwise re-cultivation of post-quarry sites towards afforestation;
- increasing the area and forest resources through afforestation of marginal land obtained from the delineation of borders between fields and forests dictated by the municipality’s local development plans;
- introducing the following key bans and restrictions into the local development plans:
 - a ban on reducing forest area by allocation to non-forest purposes,
 - a ban on construction, except facilities closely related to forest functions.

3. ENVIRONMENTAL PROTECTION INCLUDING LANDSCAPE SHAPING COMPONENTS AND PROTECTION OF NATIONAL HERITAGE

The legal protection of nature takes a number of forms in the municipality of Mielnik. The project provides for land reserves to be covered with protective forest strips around:

- wetland ecosystems found in six ecological enclaves,
- protection areas around the “Góra Uszeście” nature reserve and a nature/landscape complex “Głogi.”

Since these areas are directly adjacent to areas under intensive farm production, the plans destined them for non-farming use. There will be patch-like forest and bush stands introduced amidst the croplands, altogether covering about 24 ha of the available arable land. With its beautiful river valley, a definitely priceless natural and landscape feature, Mielnik is also part of the “Bug—European Ecological Corridor.” To utilise its landscape and tourist features, the plans provide for about 39 km of foot-paths, horse-riding and cycle trails plus several camping sites.

3.1.1 Protection of national heritage

The protection of historical objects covers both, those entered in the registry of historical objects and those which have not been qualified. The protection of national heritage at Mielnik municipality will consist in:

1. studying the cultural values and making recommendations on the local development plans and conservation zones,
2. extending conservation protection over the village of Niemirów,
3. building a detailed local development plan and the plan of revalorisation of the historical part of the Mielnik village,
4. consulting each historical object refurbishing/modernisation project and each new investment project within the protected area of Mielnik with the competent Provincial Conservator,

- making basic historical documentation, that is, inventory card of an architectural and building object (at investor's cost) in line with the requirements of the Warsaw Documentation Centre—before pulling down any historical structures.

4. WATER PROTECTION AND MANAGEMENT

The directions in surface and underground water protection include:

1. Obtaining and preserving appropriate surface water quality class:
 - river Bug—quality class II between the state border and tributary Nurzec; further downstream—class I,
 - other rivers in the municipality (a number of river valleys)—class II.
2. Protection of underground waters against municipal and industrial pollution.
3. Preserving untouched biological flows in the main rivers: Bug (state border), river Moszczona (Bug's tributary), river Mętna (Bug's tributary).

Implementation of the above-mentioned directions will require, in particular:

1. Banning the disposal into surface waters (rivers) and soil of any municipal or industrial waste in amounts threatening the adopted water quality class;
2. Building a water treatment plant and a sewage mains at Mielnik or, alternatively, container stations shared by villages which have water supply systems and by the recreation areas along the river Bug. These would be regularly emptied into the municipal sewage treatment plant in Mielnik as soon as it built there.
3. Sanitary protection of water intakes serving municipal and industrial purposes according to the existing, direct, indirect, internal, and external protection zones;
4. Using for household and farming purposes only water coming in surplus over the protected biological flow.

In conformity with the surface water retention programme for the municipality of Mielnik, the rural areas development project provides for the construction of the following small water reservoirs:

- at the village of Maćkowicze—river Moszczona, reservoir area 3 ha retention volume 36 thousand m.³ Functions of the reservoir: retention, economy, tourism, ecology;
- at the village of Mętna—river Mętna, reservoir area 2.5 ha, retention volume 22 thousand m.³ Functions of the reservoir: as above;
- at the villages of Sutno, Niemirów—Bondarka creek, reservoir area 158 ha, retention volume 13 thousand m.³ Functions of the reservoir: as above, no tourist functions.

5. LOCATION OF HOUSING CONSTRUCTION PROJECTS—AREAS TO BE DEVELOPED IN FUTURE

The main objectives in housing construction will include:

- improving the standard of existing housing stock through modernisation, outfits and technical installations,

- replacement of buildings in poor technical condition,
- providing conditions for the implementation of new housing projects,
- conversion of farm houses for the needs of farm tourism,
- adjustment of deserted houses for recreational purposes (summer houses).

With the objectives defined in the way shown above, the main housing targets which should be included in the rural areas development project comprise:

- maintenance, modernisation, replacement, and replenishing of the housing stock in undeveloped plots between existing blocks of buildings,
- housing construction at areas allocated for the purpose in local development plans,
- if necessary, finding new areas to be developed with residential, commercial (little impact on existing development) buildings as part of the local development plans,
- conversion of deserted farm buildings into summer houses by making appropriate provisions in the local development plans,
- development of technical infrastructures improving the standard of houses and life of the village residents.

Adding a new, residential function to the Mielnik area. The project allocates land plots at the outskirts of the village for housing construction. The solutions requires modification of the local development plans. The local plans provide further development of the village's tourist and recreational profile and, in a more remote future, building a tourist resort offering local hot springs which are little known and not used today. Plots destined for recreation purposes have been localised at a place overlooking the Bug river and covering altogether about 50 ha.

6. FARM TOURISM DEVELOPMENT AS FARMERS' CONTEMPORARY INCOME SOURCE

One of the main functions performed by the Mielnik municipality is a trans-local recreation and resort centre utilising the values of its natural environment and the Bug valley. The localisation of the village at the Bug Valley Landscape Protection Area testifies to its high recreational qualities and offers opportunities to develop tourism and leisure activities as an important component of the village's economic development.

The development of spa services which has been included in Mielnik's prospective local plans will combine with its tourist and leisure potential thus offering the village a strong factor of local economic development. The main directions in the development of tourism, leisure, and spa services should provide a basis for the development of:

- week-day and holiday leisure of residents of the Siemiatycze county,
- seasonal and all-year holidaying, including farm tourism at a trans-local scale,
- cross-country tourism (hiking, cycling, motor biking, and boating) as well as qualified activities (angling, hunting) at the area of the whole municipality,
- spa treatment at Mielnik.

The main objectives in the field of recreation, farm tourism, and spa services comprise:

- maintenance, refurbishing and, perhaps, expansion of the existing tourist and leisure facilities at Mielnik (hotels and catering),
- building more hotel beds (hotels, tourist huts, guest houses, youth hostels, etc.),
- preparation of land for summer houses and guest houses,
- adjustment of farm buildings for farm tourism purposes,
- adjusting residential and other buildings for the purposes of tourism and leisure activities, which are available in various settlements across the municipality,
- building water recreation facilities (sports, recreation, catering, sanitary, parking, camping facilities),
- campaign to give Mielnik a health resort status.

The above facilities are possible owing to the localisation of the following in the project:

- a land reserve to be used for the spa facilities in Mielnik,
- ecological, educational, and recreational paths promoting the main attractions of the area, among them a working chalk quarry. The plans are to have about 35 km of such paths,
- horse riding trails (ca 29 km) with markings of the biggest landscape and historical attractions,
- camping sites and public baths with sports and water equipment rental.

Since farm tourism is not impressively developed at Mielnik today, a promotion campaign seems indispensable to attract holiday makers to local farmsteads, with special stress on tradition, culture, hospitality, the charm of the farms and the village, etc.

SUMMARY

In terms of land management, the Mielnik Municipality Development Project takes full advantage of the local economic and ecological potential. It covers a long-term development of the village and its surrounding areas, gradually limiting its typically agricultural functions, which is right since the village is localised outside the intensive farm production area. Instead of farming, the project promotes a multi-directional development, including such functions as spa and recreational services which can be rendered here successfully owing to the existing landscape and natural conditions. The development directions of the Mielnik municipality which have been discussed here are consistent with economic and social priorities seen elsewhere in the European Union. This, in turn, opens way to drawing from the EU funds allocated to support of Poland's regional development and from the EU structural funds.

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