The Romanian Economic Journal

Rural Space Planning as a Tool for Natural Resource Management in Slovenia

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Regulated spatial planning is in large number of countries primarily concentrated on urban areas, while the rural areas are less strictly planned, especially in the context of natural resource development. As Slovenia is a small county with very limited spatial conditions for non restricted development planning (ie. flat, no geographical or/and environmental restrictions), the idea of more or less detailed spatial planning in rural areas was adopted already in early 70es. The reason for starting with this kind of planning was mainly connected with the competition between urban and industrial development planning and agriculture for the best lands. In the paper we discuss the development of methods of rural spatial planning, present effects of past approaches on usage of rural space and the proposal of the future rural areas planning models.

JEL classification codes: *R52 – Land Use and Other Regulations*

Introduction

Before establishing an independent state, Slovenia had a comprehensive social planning system, which contained, in addition to economic and social aspect, also a spatial aspect. When Slovenia gained independence in 1990, a special law cancelled social planning. Only spatial components of the national and local social plans were in force until the adoption of new spatial planning and management regulations in

2003. And right now the changes of actual spatial planning situation are again going on and they are in discussion between ministries and experts.

Adopted prior to independence (year 1986), the existing national spatial plan was the key development framework document for the period 1986-2000[1]. It spatially defined long-term goals and guidelines for economic and social development within the socialist self-management system. It included guidance on the development of towns and settlements; spatial planning, design, development and protection of the agricultural land and forests; protection and improvement of the human environment and conservation and the promotion of conditions of work, living, culture and recreation (Eliot, Udovč, 2005).

With the national spatial plan in place, it was the absence of instruments for the supervision of the location of activities, and for monitoring the implementation of adopted spatial planning documents, which caused ineffective implementation of otherwise well-considered goals of spatial development, planning, and management. All this also began to reflect with regard to space. Particularly outstanding in the wide range of identified issues are big differences in spatial development of regions, uneven urban development associated with the shortage of land policy, and housing policy instruments, suburbanization pressures along motorways, uncontrolled dispersed building construction, a large share of illicitly-built structures, degraded urban and other areas, the decline of old industrial towns, unplanned and deficient renewal of old city cores, inadequate infrastructure in settlements, unsolved waste management issue, restructuring of rural areas due to a changed role of agriculture, extensive forestation overgrowing of farmland, inadequate transport links despite well spread out road network, insufficient emphasis on rail transport, and an inadequate network of public means of transport, inadequate systems solution of the protection of farming land also within settlements, no respect for

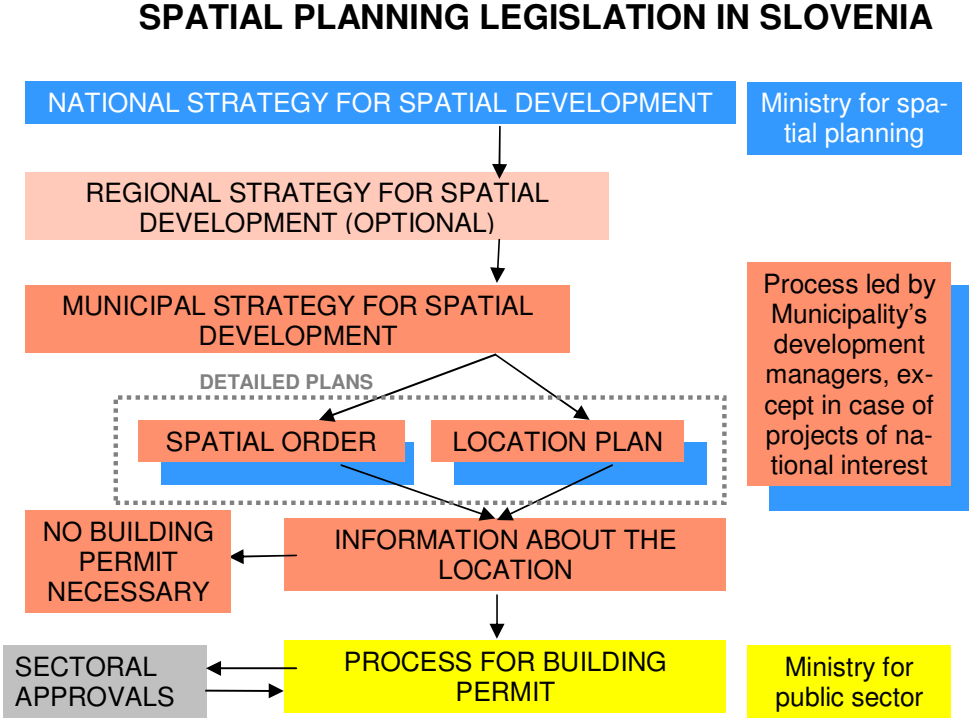
[1] Official Gazette of the S. R. Slovenia 1/86, 41/87, 12/89, 36/90, 27/91, 72/95, 11/99

and observance of regulations on spatial planning and management, the absence of regional level as an intermediate link between state administration and local government, a shortage of suitable personnel, and disassociated work of various sectors. All this subsequently lead to a graduate loss of the best agricultural areas and with it a loss of the best food and fibre production potentials.

Spatial planning system in Slovenia

In the existing system of spatial planning and management in Slovenia, the state prepares laws, policies, and other instruments, that are adopted by the National Assembly or the Government of RS. They define the spatial planning system and provide strategic spatial development objectives and guidelines, which all provide frameworks for spatial planning at the regional and local levels. In addition to the spatial development laws and strategic documents, the state also has the authority to perform measures concerning spatial development activities and construction, which are of national importance.

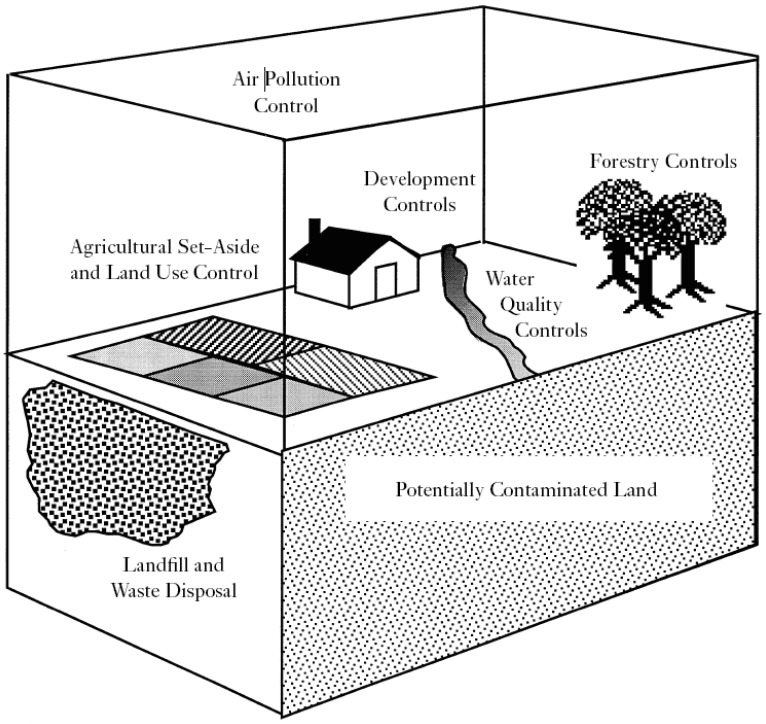
Local communities have the original right to spatial management and planning of their territories, with exception of spatial development activities which are under direct jurisdiction of the national state. A local community is obliged to perform activities in the field of spatial planning and management, as well as planning pursuant to the adopted laws, standards, and criteria. Their principal task in connection with spatial management and planning is concern for rational, mixed, and sustainable land use, as well as economical use of land plots in accordance with the principles of high quality living, working, recreation, and a healthy environment. In decision-making procedures, they are responsible for the direct participation of all the involved and interested parties. They also care for and maintain the identity of the community by considering and protecting the natural and built characteristical features.



Picture 1: Spatial planning legislation in Slovenia (Cotič, 2005).

Concept of integrated spatial planning of rural areas

To achieve a holistic and sustainable development of rural areas at spatial planning all development potentials have to be harmonized: population, settlements, agriculture, forestry, hydrology, recreation, ecology and nature protection. The available space must be planned and managed holistically, to achieve efficient spatial planning. Such spatial planning means cooperation between sectoral specific planning and general planning, what means that there must be an adjustment made between spatial functions (traffic, recreation, lodgings, agriculture, …) and functional patterns (ecological aspect, socio-economic aspect,…). Especially ecological aspect is gaining on its importance with the natural environment becoming limited good. (Prosen, 1993).



Picture 2: Land use control (Platt, 1975)

Integrated spatial planning comprises more planning methods including ecological and landscape planning, physical planning of space use or land use planning. The land use planning is used to protect agricultural land, as limited and irreplaceable natural good. Physical planning bases on natural characteristics of specified areas. Land is in this case considered as resource for demand satisfaction. Regarding the natural production characteristics of land an usage plan is made, which secure different areas for different sectors (agriculture, forestry, settlement, traffic, …) In this purpose the land is divided into infertile land, forests and arable land (fields, gardens, meadows, orchards, vineyards, pastures, …) (Prosen, 1993: 25).

Integrated spatial planning was in the past due to enforced socialist planning not implemented. In the system of socialist planning the rural areas were planed by interested individual sectors (i.e. agriculture, water management…). First in the second half of the nineties the socialist planning started to be substituted by integrated spatial planning what forced also the agriculture to more actively involve into the spatial planning of rural areas, as the efficient integrated spatial planning is only possible when all actors participate in the process.

Traditionally within the socialist planning system in rural areas twofold spatial planning was present: planning of builded space and protection of agricultural land. The right to build goes to everybody who owns land in a rural area, where building is possible pursuant to the land use of the Municipal Spatial Order or spatial arrangement set out in the local detailed plan.

The sistematic protection of agricultural land is in Slovenian spatial planning present since early 70es. In 1973 the first Agricultural land act (UL. SRS 26/1973) was passed which determined which land is permanently protected as production resource for agriculture. Since then in all Slovenian spatial legislation the protection of agricultural land is explicetelly included.
The law defined three types of agricultural land areas, which are even nowadays still used:

- areas where agricultural land is permanently designated for agricultural use only, and where in the rule its purpose can't be changed,
- areas where agricultural land can be used for non agricultural purposes, if those are in congruity with community spatial plan,
- areas where agricultural land can be used for other with agriculture connected activities (farm tourism, rural tourism, drinking water reservation, nature protection areas).

The reasons for such protection were to secure the minimum needed extent of available natural resources for food production in the case of

distorted supply. Among all agricultural land the special concern was and still is given to the areas which are having the highest natural production potential. Su

ch pieces of land can be changed into other usages only, if some other agricultural land is developed to compensate the lost production potential.

To operationalise the adopted legislation, in a whole country a categorization of agricultural land on the basis of its natural and spatial characteristics was done in late 70ies.

Rural space categorization systems

All categorization systems of spatial units existing in Slovenian spatial planning system are based on certain valuation approach, which can base either on monetary or non monetary values. In this context at planning rural space the planning must beside takeing in consideration agriculture as well consider other economic sectors (valued in monetary terms with generated income opportunities) and landscape, environment, preservation of settlings (often valued in non monetary terms).

Because of this, also the valuation of rural space for agriculture is divided into two groups:

- valuation regarding economic goals of agricultural production, and
- valuation regarding the protection of agricultural land as natural resource.

Existing rural space valuations, and on them based classifications, were primarily based on protection of agricultural land as natural resource, and their goals were to preserve as much agricultural land in cultivation as possible. Within this paradigm for the most valued agricultural land are considered:

- plots of land where there are no or very few agro technical limitations regarding the cultivation of known agricultural plants and usage of modern agricultural technologies,

- plots of land which can be improved with certain agro technical operations (hydro- and agro ameliorations, irrigation) for intensive agricultural production,

- plots of land which form bigger complexes,

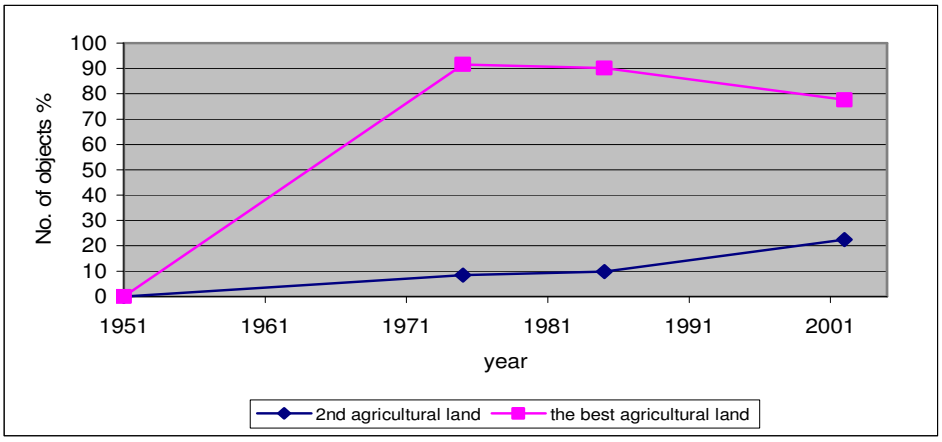
- plots of land which are suitable for intensive plantations (orchards, vineyards),

- complexes of plots which are suitable for horticultural production.

All such land is categorized as 1st (the best for agricultural production) or 2nd category of agricultural land, and was protected by Agricultural land act (UL.SRS 26/1973) against other forms of spatial use. The other agricultural land allocated in categories from 3 to 6, was allowed to be allocated to other spatial uses by local municipality spatial documents.

Effects of past rural space planning systems

The regulated use of agricultural land for non agricultural purposes has been affecting the spatial development in rural areas as it can be seen from the picture 3, which shows the trends in building up of agricultural land in period 1951-2001. As we can see has the introduction of Agricultural land act in 1973 redirected the building processes from best agricultural land to other categories of rural space, but it could not completely stop it.

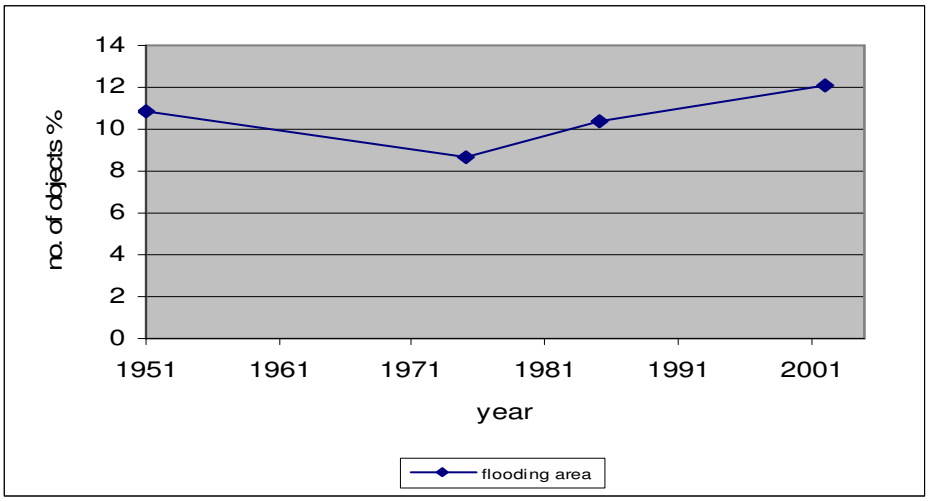


Picture 3: Trends in building of residential housings on agricultural land in municipalities of Medvode, Vodice, Trzin, Mengeš, Domzale between years 1951 and 2001 (Prosen et al, 2005)

But the positive effects of restrictions put on building on agricultural land had also some unwanted consequences, among which are disperse buildings, non permitted building, use of non agricultural rural land with higher degree of natural importance and building in areas with higher degree of natural hazards risks, as can be seen from picture 4.

Big spatial problem in rural areas connected to changes in agriculture also represent the abandonment of production on agricultural land, which is than because of limited availabilities for other spatial usages (even temporal) left fallow. A the moment the analysis show that about 4% (cca 48.000 ha) of agricultural land is under the process of overgrowing and about 100.000 ha (5% of total area of R Slovenia) was already because of this processes already converted back into forests in last half of a century. The problem is considerable, because the process is not present only on marginal hilly agricultural land, but also in flatlands on the best agricultural land. One of the reasons for such development is also lying in the small parcel structure of agricultural

holdings, and to change this is one of the future tasks of new spatial planning of rural areas.



Picture 4: Trends in building of residential housings in flooding areas in municipalities of Medvode, Vodice, Trzin, Mengeš, Domzale between years 1951 and 2001(Prosen et al, 2005)

Continuing we represent some expert assessments of influences of restricted usage of agricultural land on spatial development of rural areas (Prosen et al, 2005). In the survey 198 experts from fields of agriculture, spatial planning and rural development were questioned. The table 1 shows the results of a question asking if all land plots, which are categorised as the best agricultural land, are also such in reality.

Table 1: Answers on the question "Are, by your opinion, all land plots, which are categorised as the best agricultural land, also such in reality?" N=198

	%
Total	100
As the best agricultural land are classified predominately	36.9

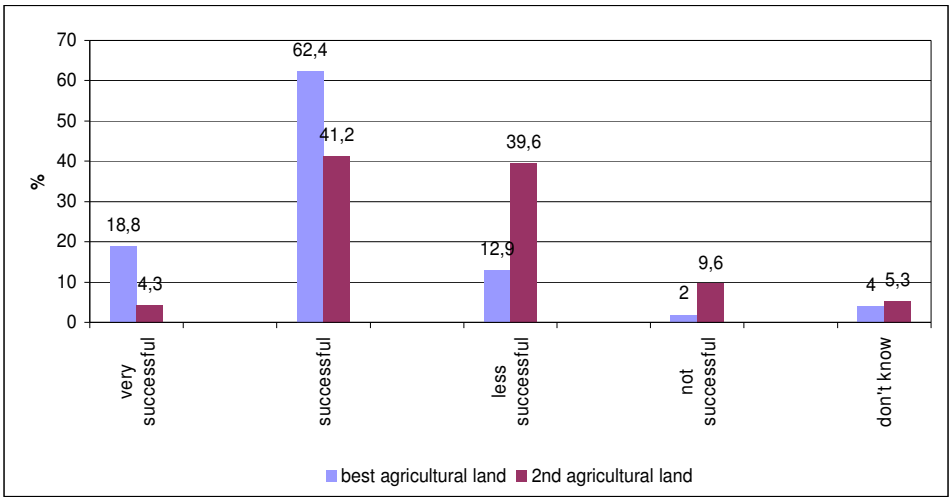
the best agricultural land plots	
As the best agricultural land are classified all agricultural land plots, also bad agricultural land	29.8
The quality of agricultural land was not the criteria for classification as the best agricultural land	27.8
Don't know	4
Yes, as the best agricultural land, only the best agricultural land plots are classified	1.5

The results show, that more then half of questioned experts doubts, that only the best agricultural land was categorised as such. Firm about this are only 1.5% of them. This answers show that the system was considered very doubtful and probably even abused in number of cases. From this we can conclude that in the future the classification of the best and most needed agricultural land must be better defined and also more strictly followed.

Table 2: Answers on the question: "How was by issuing the building permit the actual quality of agricultural land considered?"

	%
The permits were issued only for interventions on non agricultural land	8.0
The permits were issued only for interventions on non agricultural land and low quality agricultural land	20.9
The permits were issued predominately for interventions on non agricultural land and low quality agricultural land	36.8
Quality of agricultural land had small influence on issuing the permits	14.4
Quality of agricultural land had no influence at all on issuing the permits	5.0
Don't know	14.9
Total	100.0

The results show that the issued the permits were in majority of cases connected to land quality and in the rule the permits were not issued for interventions on agricultural land. Only in small percent the issuing of permits was not connected to the land quality. This answers are in concordance to the assessment how effective was the protection of the best agricultural land (picture 5).



Picture 5: Expert assessment of protection of agricultural land against spatial development

Even if more than half of asked experts think that the system of protection was not good, almost all (81 %) agree that the system was effective in protection of the best agricultural land. Regarding protection of other agricultural land the assessment is already more in favour of failure. This answers might indicate, that even if the system of protection was not very popular and sometimes even not strictly implemented, it has delivered good results in achieving the set goals. The authorities did not give up under pressure for building up agricultural land. The situation is different when considering building up of public infrastructure, but here the dilemma between protection and development plans is always present and not in favour of agriculture.

The main problems that experts identified as negative development from existing agricultural land protection is the collision between Slovenian ideal of owing a house in nice rural area near the city and scarcity of such locations. The solutions will have to be searched in better planned organized building ground development in periurban areas.

Generally speaking, the survey showed some major differences between groups of experts. The agricultural experts were predominately very positively assessing the development, while the architects and planners were more often connecting unwanted spatial developments, as scattered settlings, lack of building grounds, non permitted building, with the strict protection of agricultural land.

New suggested approach in rural space planning

As this classification was predominately based on pedological characteristics of plots, it proved itself as unsuitable and too rigid for integrated spatial planning of rural areas. In modern agricultural production beside soil quality, also other factors (accessibility, plot size, distance to pollution sources, transport infrastructure, water availability…) influence the decisions where the agricultural production and of what kind will take place. In 90es, in spite existing protection, also the trend of developing the best agricultural land for building grew steadily and because of this a novel approaches to classifications for rural space was demanded. In this context a proposal for new spatial planning strategy in rural areas was developed which:

- more precisely defines the best agricultural land, where the definition is basing on more agronomical parameters and also make spatial reference for their locations,
- spreading of settlement directs in areas with lower quality of land or into forests; settlements which don't have such space in its' hinterland should not be planed for further spreading (the use of best agricultural land should be permitted only exceptionally

in case of building traffic, municipal or state level infrastructure, share of the rent earned by developing agricultural land should be transferred to improve the remaining agricultural land),

- minimize the transfer of agricultural land from farmers to non farmers and
- establish databases for better control over transactions with agricultural land.

Those strategic starting points were first time used by preparation of a spatial development strategy for the city of Ljubljana (Kovačič et al, 2003). Within this project the open space in rural areas was classified in three categories:

(1) areas of intensive agricultural production with highest production potential,

(2) areas where agricultural production is limited due to lower production potential of the land or existing environmental and spatial constraints and we can experience mixture of different usages and agriculture might even be of secondary importance,

(3) areas where the agricultural land can be, due to bad or restricted development opportunities for agriculture, transferred to other spatial usages.

Each of this category can be the further internally structured regarding its suitability for agricultural production or level of needed protection. In the case of planning the agricultural usage of rural space the proposed categories are:

1. areas of protecting agricultural land with highest degree of production potential,
2. areas of protecting agricultural land,
3. areas of possible alternation of usage, and
4. where needed, areas of improvement of agricultural space.

Areas of protecting agricultural land with highest degree of production potential

Those are the areas where agricultural production development is planed and agricultural usage of land is preferred. Those areas have the highest possible protection against the change of usage. The characteristics of areas that are evaluated for this category are:

- productivity of agricultural land,
- extensiveness of land plots,
- possibilities to form bigger production units (concentration of estates), and
- feasibility of using agricultural machinery.

In such areas limiting factors can be protection of drinking water springs and catchments, nature protection, vicinity to settlements and roads (transportation, collision of interests, airborne pollution…) and possibilities to create new cultural landscapes. In those areas all agro technical operations and measures are possible (merger of land units, drainage, irrigation and agro ameliorations).

Areas of protecting agricultural land

Those are areas where agricultural production has some limitations either due to lower production potential of the land, or other impeding factors (natural, drinking water catchments…). Here agricultural production faces some limitations in its development. This does not mean, that having agriculture there is not important and due to this the agricultural land subject to less protection, rather opposite. In such areas agricultural production represents important element of cultural landscape (natural and cultural heritage, preservation of settlements, tourism…), but as economic activity it is of secondary importance. Mixing of usages and activities is in those areas more obvious and acceptable and in this category we categorise also special geographical position for production of special cultures as fruits, grapes and perennial vegetables and in special cases even small gardening. Possible subcategories within this category are:

- areas of special geographical conditions for production of special cultures,

- areas of nature protection,
- areas of landscape protection, and
- areas of landscape heritage protection.

The characteristics of such areas that are evaluated for this category are:

- moderate suitability for agricultural production,
- exceptional landscapes (cultural quality, symbolism, identity),
- natural and cultural heritage,
- areas of specific ecological sensible landscapes (difficult production conditions, low level of natural resources renovation),
- areas of natural resources protection, etc.

Areas of possible alternation of usage

This category includes two types of areas. First type are areas, which could be, because of low suitability for agricultural production (low soil quality, reminder of land within urban areas, polluted land, high degree of agricultural land abandonment and its overgrowing with natural forests…), left to other usages either to develop them or to use them as protective areas (ie. protective vegetation stripes…). The other type are areas where agriculture represents a so called influential space on other economic activities (ie. mixture of agricultural and forestry usage).

Areas of improvement of agricultural space

In the past some not well planed agricultural measures caused the degradation of space due to wind erosion, landscape degradation, draining wetlands… The new development calls for improving such areas with either ecological measures (renaturation) or agro technical – especially irrigation for securing the future potential agricultural production.
For small scale planning (on the level of individual parcels) the above mentioned methodology proved to be too rough. So in cases when there is a mixture of different land usages planed within one small area a precise location of each of the usages is determined on the basis of

valuing selected natural factors (geological foundation, hydrological conditions, soil type…), which are stable and they are on a small scale determining which land has higher production potential for agriculture, and as such is the most valuable for securing the potential for future food and fibre production.

Conclusions

As the most important experience, learned from rural space planning and agricultural land protection in last few decades in Slovenia, we can name the fact that system of protection of agricultural land can't be dealt with separated from entire problem of rural space planning. Even if protection of agricultural land might seem to be more of strategical agronomical problem of long term insurance of food and fibre production, this is not the case. Rural space use is wider system and changes in one sector have long term influence on others. Often first effects are noticeable in agricultural sector itself, with higher pressure on the best agricultural land, because the wide protection of all agricultural land brings to importance other factor then land production quality itself, what can then lead to general non rational use of rural space.

So to be able to secure the needed natural resources in rural areas the integrated rural space planning systems have to be used, which represent the only sustainable long term approach to successful and sustainable rural development.

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