

Possibilities for the application of geography to land use planning

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Abstract

Participation in the creation of land use planning documentation and involvement into the land use planning process are one of the possibilities for geographers to assert themselves in practice. The objective of this contribution is to point out the common elements of geography and land use planning leaning upon their theoretical basis, to compare particular types of planning (land use planning, regional planning, landscape planning, strategic planning etc.) as well as their spatial levels (dimensions) and to outline possibilities for the assertion of the geographer in these dimensions.

Key words: land use planning, spatial planning, regional planning, strategic planning

Land use planning in the transformation stage

New approaches and needs at planning space and forming the conceptions of settlement in the Slovak Republic started to be discussed already in the first period after the democratic transformations in 1989. It was done despite the fact that in the beginning a certain aversion to planning as such was a concomitant feature. This circumstance required also several amendments of the Act No. 50/1976 on Land Use Planning and Building Regulation (Building Code). However, a new legal norm has not been created hitherto although its social necessity is unambiguous. It results from several factors that have been set up in consequence of new social, political, economic and international conditions.

Among the most significant reasons to form a new law belong:

- 1) Constitution of new property relations and their mutual equivalent position.
- 2) New way of the formation and protection of the environment based on the participation of inhabitants and their right to express themselves about and to take part in the planning and realisation of formation and protection of the environment.
- 3) Ensuring the basic presuppositions of a democratic approach in the active participation of all parties concerned, including the public.
- 4) Creation of self-administrative organs that are sole bearers of responsibility for a comprehensive development of the consigned territory.
- 5) Possibilities to elaborate alternative variants (or variants for crisis situations) of the spatial arrangement and functional utilisation of territory.
- 6) Need to include a supranational component being inevitable for the common planning and realisation of projects in border regions.

When democratic approaches taking into account (3) land use planning may be considered to be a tool for agreement among all subjects engaged (self-administration, State administration, experts, entrepreneurs, citizens) to achieve the functional utilisation and spatial arrangement of territory. For this reason it is necessary to choose such new ways and methods to involve citizens, which should reside in obligation to (Zibrin, 1996):

- secure a permanent knowledgeable of inhabitants about the state of basic means of social and technical infrastructure,
- inform on the planning of needs and the formation of resources for their fulfilment and on endowment possibilities,
- organise the referendum of inhabitants on the larger investment intentions and on the proposals of land use plan concepts,
- work out land use planning documentation in a way legible and understandable for citizens (selection of the scale, of graphic interpretation and the like).

The ensuring of the supranational component (6) is one of the conditions encompassed in the document of "Europe in 2000" (a material from the Council of Europe). In this way crossborder integration processes at a regional level, the establishment and functioning of Euroregions as well as the actualization of concrete projects in border regions should be markedly supported by the active participation of two or more parties concerned. According to the mentioned document, land use planning should have a democratic, global, functional and prospective character. Zibrin (1996) adds to these four conditions a permanent character more, securing the individual phases of activity. An overview of all conditions for land use planning along with their characterisations is given in Table 1.

Tab. 1 Character of land use planning (by document "Europe in 2000")

| | | |
|----|-------------|--|
| 1. | democratic | • ensures the participation of inhabitants and their elected representatives |
| 2. | global | • makes up the spatial territorial system coordinating sectoral interests |
| 3. | functional | • regards regional awareness and the constitutional reality of the State |
| 4. | prospective | • analyses long-term tendencies and economic, ecological, social and cultural visions |
| 5. | permanent | • ensures three phases of activity: – formation of an idea – planning the realisation – implementation proper |

Geography versus land use planning

What is common for geography and land use planning and what are principal differences between them? Firstly, we cannot consider land use planning to be a separate scientific discipline (a basic scientific discipline for land use planning is town-planning). Despite that we will try to define and compare the object and subject of study for both. In a simplified form it may be stated that their object is common. It is the geographic (landscape) sphere of the Earth or a concrete geographic space, an area delimited on the Earth's surface.

Defining the subject is always a relatively complicated and disputable matter within a scientific discipline. In geography the subject is represented by regularities of the structure, development and operation of the object (Mičian, Zatkalík, 1990). While in the past only the development and topical state of territory was the subject of research for geographers, gradually and more often prognosis, i.e. the outlining of possibilities for a future development becomes in the foreground. Mičian, Zatkalík (1990) see the cardinal task of geographical prognosis in the scientific determination of the role of integral geographic systems in the future. In other words, how the mutual interaction of nature, population, technology and economy in concrete States, regions, cities and other territorial units will be formed.

For the present, prognosticating is applied merely within the formulation of possible developmental alternatives. However, it is expected that in the future so-called applied geography will become in the foreground still more often. It will directly – on the basis of theoretical knowledge – handle the planning of geographical space, namely through the selection of optimum variants for area utilisation and by direct intervention in localisation decisions. The method of modelling (we distinguish two elementary types of models – the graphic or cartographic ones and the mathematical ones) frequently used in geography should play a significant role in this case. Hitherto this method has been applied to a large extent to the approximation of the current state of spatial utilisation or to the approximation of spatial relations only. Nevertheless, there exist here great reserves for the application of modelling in optimising the functional organisation of geographic space and in forming conditions for the maximisation of efficiency as regards the utilisation of this space.

The main subject of land use planning – in contradistinction to geography – is right the planning of area utilisation, i.e. the formulation of intentions into the future. More precisely, land use planning serves to predict future presuppositions of territorial development and in a wider sense is conceived as conception activity in a long-term horizon.

A very important difference is that land use planning implies also designing as an executory process serving to fulfil and carry out a presumptive or required intention (Jančura, 2001).

Tab. 2 Comparison of the objects and subjects of geography and land use planning

| | geography | land use planning |
|----------------|---|--|
| object | <ul style="list-style-type: none"> • landscape (geographic) sphere of the Earth • cut-out from the landscape sphere – a territory, region | <ul style="list-style-type: none"> • cut-out from the landscape sphere – a territory, region |
| subject | <ul style="list-style-type: none"> • regularities of the structure, development and functioning of territory with a possible prognosis of its future development | <ul style="list-style-type: none"> • planning of territory utilisation in a long-term horizon based on regularities of its structure, development and functioning • designing and realisation of territorial development |

Besides land use planning itself we may differ several further, either separate or partial types of planning. This can be done on the grounds of more criteria – spatial one (according to the area of territory that is concerned by a partial process), historical-legal one (how a given type of planning is comprised in the set of legal norms) and sectoral one (according to the relation of a type of planning to a concrete economic branch or sector).

Spatial planning is a general term for the planning process in geographic space regardless of its extent. This planning includes land use planning as well as regional planning with all their subtypes.

Land use planning is defined in the Act No. 50/1976 on Land Use Planning and Building Regulation (Building Code) and its latest amendment No. 103/2003. The Building Code has been completed by implementing regulations as the Regulation No. 84/1976 on Land Use Planning Supporting Materials and Land Use Planning Documentation, which has been amended by the Regulation No. 55/2001. On the basis of the existing legal regulations, land use planning in a systematic and comprehensive way deals with the spatial organisation and functional utilisation of territory; the principles of land use planning are defined; the factual and temporal coordination of activities influencing the environment, ecological stability, cultural-historical values of territory, territorial development and the formation of landscape in conformity with the principles of sustainable development are proposed (a). As well, land use planning constitutes prerequisites for a permanent harmony of all activities in the territory with special regard to the care of the environment, for the achievement of ecological balance and the ensuring of sustainable development, for the thrifty utilisation of natural resources and the preservation of natural, civilisation and cultural values (b).

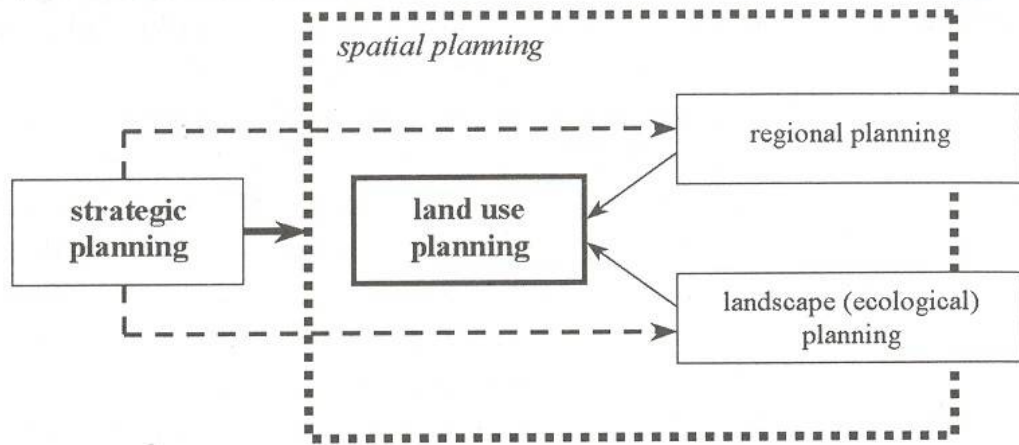
Regional planning is aimed at a larger territory as to its area. Such its definition would be, however, much simplified and moreover – insufficient. In contrast to land use planning, in which a land use plan proper is the subject of interest and objective at the same time, regional planning implies the overall strategy of a comprehensive social-economic development of regions. Therefore a new partial geographic discipline or a new approach to the application of practical geographic knowledge – a regional development has been formulated in the management of communes and regions. Borecký (2002) understands by the term “regional development” a process of the advised application of measures to mitigate or remove differences in the social-economic development of regions, including the incorporation of these measures into the overall policy of a State. (In this place perhaps another formulation would be more appropriate – to mitigate or not to deepen those differences; since their removal, i.e. a total homogeneity of space is not de facto feasible.) Whilst regional policy covers the activities comprising the preparation, approving and implementation of the mentioned measures, regional development very well reflects a universal strategic objective (purpose) of regional policy and regional planning accentuating a helpful active approach to the social-economic development of regions.

Landscape (ecological) planning is an advised systemic activity regulating the rational utilisation of natural resources, determining an ecologically stabilised management in the landscape and minimising the conflicts of interests in a given territory. Landscape planning optimises the utilisation of territory in relation to its ecological stability and limits the rise and operation of negative factors. Its aim should be to harmonise the requirements and needs of society with natural processes and landscape potential (Jančura, 2001). Miklós (1993) too denotes an ecologically optimum spatial organisation, more concretely a proposal for the optimum organisation of space along with a proposal of subsequent measures to ensure an ecologically optimum way of the operation of these activities in the landscape, as the chief objective of landscape planning. TSES (a general plan of the territorial system of ecological stability) is a legal basis to the ecological stabilisation of landscape in contradistinction to a landscape plan (a concept of the optimum arrangement of landscape) (Borecký, 2002). The main aim, which the delimitation of TSES has, is to permanently secure the biological diversity of territory (species and interspecies diversity and that of landscape ecosystems). The substance of TSES is thus to delimit a network of naturally allied surfaces within a minimum territorial extent that cannot be further reduced without threat to ecological stability and to the biological diversity of territory.

Strategic planning aims at minimising the directive character of land use planning (a land use plan submits only the one alternative of future development, does not include risks for a future situation nor solutions of unplanned and unforeseen circumstances that may happen) in such a sense that it offers alternative possibilities of the spatial arrangement of territory in dependence on a concrete trajectory of development and it also submits solutions of possible conflict situations. In the Slovak Republic, the term of strategic planning does not occur in any of the amendments of the Act on Land Use Planning and Building Regulation up to now. In countries of West Europe practice proper required the introduction of strategic planning as a legal norm. Governing authorities in cities and communes alone, without a directive by law, comprehended the contribution of such an approach and elaborated or ordered to elaborate strategies of development (strategic plans of development). In Slovakia, the Act No. 369/1990 on the Municipal System provides – though not exactly – the communes with support for these activities. According to this Act, a commune when performing its self-administrative functions procures and approves (besides land use planning documentation) also conceptions of development for individual scopes. These conceptions may be to a certain degree identified with the strategy of development (Kling, 1999).

Based on the specificity of orientation towards concrete branches (sectors) as regards the individual kinds of spatial (land use, regional or strategic) planning, we may identify a relatively wide range of types of sectoral planning – financial one, that of scientific-technological development, defensive one etc. In contrast to comprehensive planning, they have a narrower span and are more specialised. The internal structure of spatial or strategic planning from the historic-legal and sectoral (branch) viewpoints is depicted by Figure 1.

a) from the historic-legal viewpoint



b) from the sectoral viewpoint

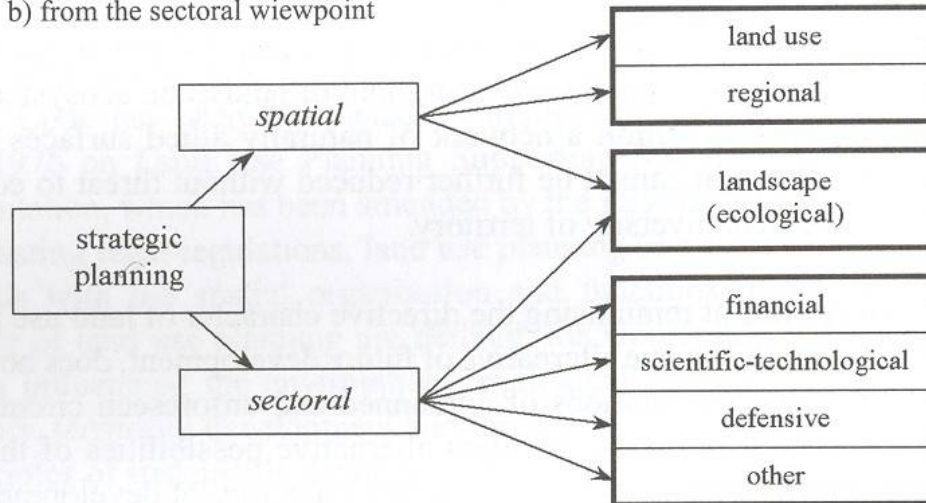


Fig. 1 Internal scheme of spatial or strategic planning (Borecký, 2002)

Levels of land use planning

The question of the extent of study and dimensions (levels) with which we work in the territory has an important place in understanding the properties of territorial systems. The landscape dimensions may vary from particular biotopes up to large spatial (landscape) wholes. This apparent commonplace is of significance also in the research of functional-process relations in the area. An isolated study of individual dimensions could deform their interrelations. Space is continuous and its division is only our aid to comprehend its complexity. The geographic and town-planning terminologies differ in denominating dimensions (levels) that are used in the classification of structures. Their comparison is shown in Table 3.

Town-planners work to a greater extent in spatially lesser dimensions. The cardinal reason for that is that a land use plan proposes concrete ways of territory utilisation. The factuality of the proposal slowly and inevitably shifts toward abstraction with a growing area. On a republic level thus the most important constructions of the national-public interest – like motorways, water works, power plants etc. – remain as concrete proposals only. The occurrence of these projects is even lower on a supranational or a continental level.

Geographers, on the other side, move in their research much more evenly in all spatial dimensions. Equivalent attention is in geography paid to the continental and global levels (in case of planetary geography also to the planetary one) as well as to the regional and local levels (or to the regionic, topic, and choric ones).

One of the prime tasks of geography is the delimitation of regions proper (regionalisation), namely on the basis of a selected circle of criteria. According to a chosen criterion we distinguish two fundamental types of regions – the homogeneous and nodal ones. Right nodality (i.e. the delimitation of a region on the grounds of gravitation to its centre) should be an essential criterion at delimiting territorial-administrative units. Land use planning itself does not intervene in this delimitation. However, since land use planning is leant upon a legal framework, it uses delimited territorial-administrative units as basic spatial formations in the land use planning, decision-making and realisation processes.

Tab. 3 Comparison of geographic and urban dimensions (terminology)

| physical-geographical dimensions | human-geographical dimensions | town-planning structures |
|--|--|---|
| <ul style="list-style-type: none"> • planetary • regionic (regional) | <ul style="list-style-type: none"> • global • regional | <ul style="list-style-type: none"> • continental, republic, regional • urban-settlement, zonal • architectonic, interior |
| <ul style="list-style-type: none"> • choric • topic | <ul style="list-style-type: none"> • local | |

Republic (national) level: the management of land use planning activities should primarily be manifested in the creation of legal norms, game rules, directions and regulations, town-planning indicators in a general form and in the creation of territorial development policy. This results from an idea that the State within development has to unify the regional, economic, ecological, settlement conceptions and their interconnectedness.

Regional level: the management of land use planning activities should be carried out through integrated plans of the territorial development of regions, regional directives and proceedings. Newly established representative authorities – the self-administrative larger territorial units – have entered into the control system at the level of regions. Therefore it will be inevitable to find an optimum way of their incorporation in the land use planning process. On the basis of the situation in West Europe it is possible to enforce two variants at the regional level (Zibrín, 1996):

- 1) Model of entire decentralisation (the self-administrative representative organs would be responsible for conception and executive land use planning activities).
- 2) Model of the parallel operation of two control systems (the division of competencies between State administration and self-administration).
Within this model, decentralised administration would ensure above all executive activities as follows:

- territorial-administrative activity,
- building-administrative activity,
- appeals against territorial and building decisions.

Self-administrative representative authorities would be responsible for developmental territorial documents of a region, i.e. concretely for their:

- preparation,
- designing,
- approval,
- realisation.

Local level: the principle of entire decentralisation should be applied to the management of land use planning activities to the highest degree. On its basis, all the communes should have both land use planning as well as building-administrative competencies. In case that communes cannot set up their own building authorities, they should have a possibility to utilise the services of building offices at a higher hierarchical level, or to associate with one another and form a common service for boards of representatives within the associated communes.

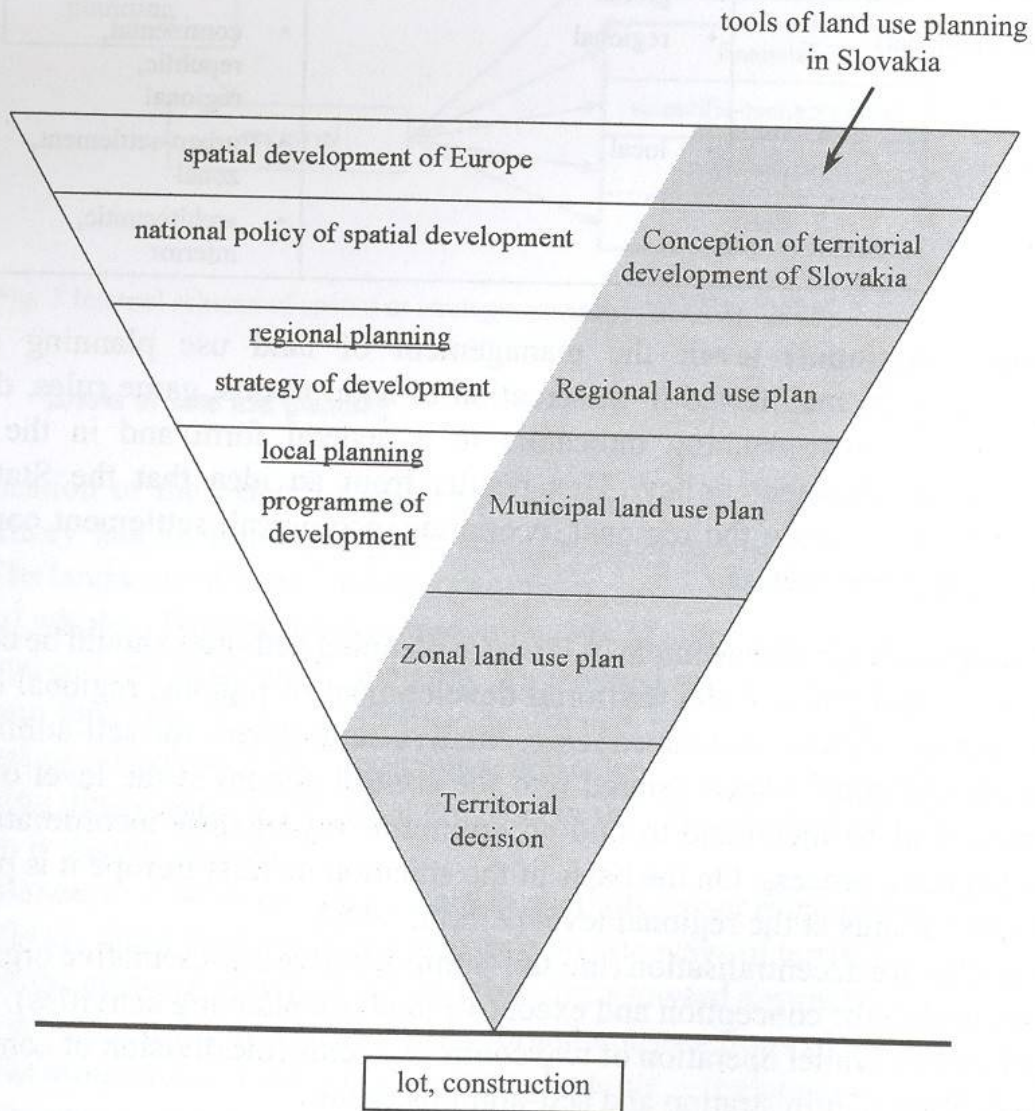


Fig. 2 Levels of land use planning, tools of land use planning (Maier, 2000 – adapted)

On the basis of valid legal standards in the Slovak Republic, the principal land use planning document at the national level is the *Conception of the Territorial Development of Slovakia* (CTDS). Its provider is the Ministry of the Environment of the Slovak Republic (Section of land use planning, building regulation, informatics and monitoring – Department of land use planning); it is approved by the Government. In contradistinction to the period of communism when nationwide land use planning documentation had a directive character (then under the title Projects of Urbanisation), CTDS has a recommendatory character. Its latest update is from 2001 (the preceding versions from 1994 and 1997). CTDS comprises the lists of immovable cultural monuments, protected areas, then the intentions of water management, transport and energy policy and the like.

The main land use planning document at the regional level is in Slovakia Regional land use plan. It is elaborated for such a territory in which several settlements units are situated or for a territory in which special interests are promoted (like mining, industry, agriculture, recreation etc.). From the viewpoint of the number of entering subjects, the regional level of land use planning is the most problematic. Here the participating subjects are State administration at the national as well as regional levels (Ministry, regional office, district office), regional and local self-administration (representatives of larger territorial units and communes), infrastructural network administrators (Slovak Gas Industry, Slovak Telecom etc.). For this reason it is unavoidable to reach a consensus of all parties concerned. The land use plans of the Slovak regions (at that time Land use plans of the larger territorial units) were worked out in 1998.

The official land use planning documents at the local level are Municipal land use plan and Zonal land use plan. These land use plans belongs to the competencies of self-administration. It ensures the elaboration of the mentioned land use plans individually (either through updating the existing land use plans or by elaborating the new documents) on the basis of own needs and in the framework of own financial possibilities. An overview of the levels of land use planning and the tools of land use planning (valid land use planning documentation) in the Slovak Republic is demonstrated by Figure 2.

Assertion of the geographer in land use planning

One of the important questions that looks for its answer is the application of science (research) to land use planning. Wisserhof (1998) summarized the possibilities of planning in this context into three cardinal realms:

- planning is a systematic preparation to management (system approach);
- planning is an instrument for spatial policy and its broad impact requires extensive knowledge;
- planning of an environment is of a long-term character, it is necessary carefully consider decisions to be made – a task for research (not all to examine directly in practice, but firstly to carry out experiments on a smaller scale);

What is the situation with geography? One of its common signs with land use planning is that they both have a markedly interdisciplinary character. Their position is at the intersection of natural, technical and social sciences. Land use planning issues from the knowledge of all three categories of sciences, from own knowledge and from

further basic documents that have been worked out for the respective territory. As well, land use planning requires the collaboration of many professions – architects, town-planners, (landscape) ecologists, economists, power engineers, geographers, demographers, sociologists etc. An integrating function in the land use planning process within natural sciences is a landscape ecologist or a physical geographer, within technical sciences it is an architect – town-planner and within social sciences a human geographer.

Our task within the grant project will reside in outlining possibilities for the assertion of geographers in the land use planning process among experts from the above mentioned professions. In the first stage we tried to depict the geographers' theoretical presuppositions, possibilities and opportunities for their participation there. They are shown in a graphic manner by Fig. 3. The resultant curve has a given form for the following reasons:

- 1) Assertion of the geographer within the lower spatial levels decreases. For the zonal dimension – in comparison with the higher spatial levels – far greater attention is paid to the architectonic shaping proper of concrete objects or blocks of objects. If we moved even to a lower level (i.e. a building, interior), possibilities for the assertion of the geographer here would decrease up to zero value.
- 2) On the contrary, the possibility for asserting the geographer increases towards the higher spatial levels. With an enlarging territory, also the number of its particular structural components increases. A territorial system thus arises that – besides its composition of several elements – comprises also a more complicated network among these elements. Therefore, the application of geography grows since it - as a considerably interdisciplinary scientific branch – marks with the comprehensiveness of its research.
- 3) Hitherto practice has shown a larger involvement of physical geographers – compared to human (socio-economic) ones – in the land use planning process. The assertion of the former is unequivocally higher at the regional level where the natural environment plays a much more significant role while in case of a commune or a zone greater attention is devoted to inner functional spaces.
- 4) On the basis of theoretical presumptions, the position of geographers at the national level should further be strengthened in comparison with the regional level. In reality it is a bit differently; substantially more persons enter land use planning at the national level. This level – besides the planning, designing and decision-making processes alone – actually includes also the creation of legal norms - rules and directives valid not only for this level but also for land use planning at the lower spatial levels. For this reason the possibilities of the geographer are here slightly decreased compared to the regional level.

We will deal with concrete opportunities including the evaluation of the current state within the next stage of research. As regards this part, hitherto merely the assertion of geographers in the land use planning process of cities in the Slovak Republic has been studied. In case of gaining a sufficient database, we will try to map the topical state at the level of regions (or at the republic level) too. It will be practicable to verify the correctness of our suppositions, to find and propose further possibilities and reserves to apply geography after a confrontation of reality with theoretical assumptions.

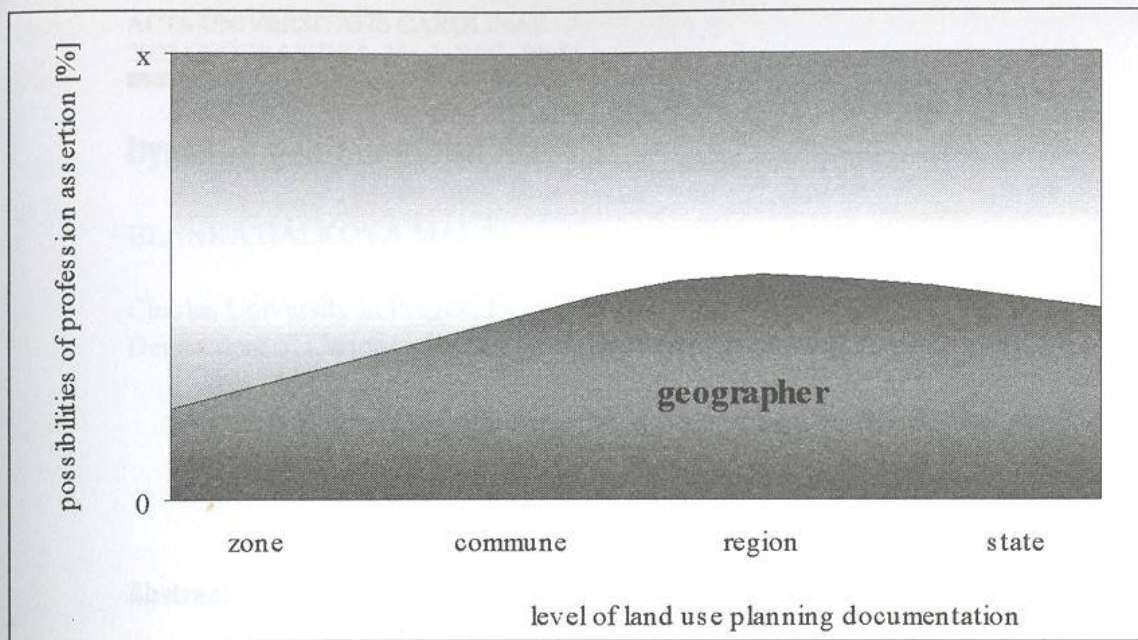


Fig. 3 Theoretical possibilities for the assertion of geographers in the individual levels of land use planning

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