STRATEGIC ENVIRONMENTAL ASSESSMENT IN THE POLISH SYSTEM OF SPATIAL PLANNING
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I. INTRODUCTION

I.1. Overview of the Polish system of spatial planning

The first Building Act in Poland, comprising the regulation of urban planning, was passed by the Parliament already in 1928. Most of the planning and policy forming activities in Poland are performed at the local and regional levels by self-governamental authorities and this way the Local Self-government and Regional (called Voivodeship) Self-Government Acts must be taken into consideration as the source of the procedural regulation. Basic regulation for the field in question, however, is provided by the Spatial Planning and Development Act of March 27, 2003 (enforced on May 23, 2003). This law has substituted previous regulations issued in 1994. There are other important Acts of Parliament that impose certain tasks and obligations on spatial planning actors, and thus, cause planning, building and environmental protection to be regulated by completely different acts:

- The Environmental Protection Law (serving as the framework law for many detailed sectoral regulations, e.g. related to forests, water or waste management, protection of nature or arable land)
- The Building Code (in relation to construction and engineering activities)
- The Law on Real Estate Management.

According to Spatial Planning and Development Act, the Polish spatial planning system consists of four documents:

- national spatial development concept,
- voivodeship spatial development plan,
- study on pre-conditions and directions of spatial management,
- local land-use plan.
Table 1 Characteristics of planning documents in the Polish spatial planning system

<table>
<thead>
<tr>
<th>Level of spatial planning</th>
<th>Types of planning documents</th>
<th>Main elements defined in document</th>
<th>Responsibility</th>
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</thead>
<tbody>
<tr>
<td><strong>Country</strong></td>
<td>National spatial development concept</td>
<td>1. national settlement network 2. conditions for environmental and monument protection including protected areas 3. location of social infrastructure of international and national importance 4. location of technical and transport infrastructure, strategic water resources and water management infrastructure of international and national importance 5. problem areas of national importance</td>
<td>Governmental Center for Strategic Studies</td>
</tr>
<tr>
<td><strong>SEA required</strong></td>
<td>Voivodeship spatial development plan</td>
<td>1. voivodeship settlement network, transport and technical infrastructure inter-relationships 2. system of protected areas, including areas of environment, nature, landscape protection, health resorts, monuments and cultural heritage protection 3. location of supra-local public investments, including: social, technical, transport, tourism infrastructure, marine and water management 4. problem areas including principles for their development 5. auxiliary support areas 6. areas threaten with flooding 7. areas with documented mineral deposits</td>
<td>Voivodeship self-governmental authority (Marshall office)</td>
</tr>
<tr>
<td><strong>County</strong></td>
<td>Planning studies <em>Not obligatory</em></td>
<td>Not defined</td>
<td>County self-government</td>
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<tr>
<td><strong>Municipal</strong></td>
<td>Study on pre-conditions and directions of spatial development</td>
<td>1. directions for transformation of physical structure of municipal and land function 2. directions and indexes of land use, including area when building is prohibited 3. areas and principles of environment and its resources protection, as well as nature conservation, cultural landscape and health resorts, 4. areas and principles of cultural heritage and monuments protection 5. directions for technical infrastructure and transport development 6. areas of local public investment location 7. areas of supra-local public investments in accordance with voivodeship plan 8. areas which require local land-use plan preparation, 9. directions and principles of arable and forestry land</td>
<td>President, mayor</td>
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<tr>
<td>Selected area of municipality</td>
<td>Local land-use plan</td>
<td>Obligatory</td>
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<td>SEA required</td>
<td><em>Legally binding</em></td>
<td>1. land use category and demarcation lines for different land-use</td>
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<td></td>
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<td>2. principles for preservation and shaping of spatial order (harmony)</td>
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<td>3. principles for preservation of environment, nature and cultural landscape</td>
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<td>4. principles for cultural heritage and monument protection</td>
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<td>5. requirements related to public space shaping</td>
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<td>6. indexes for development structures (build-up areas) and areas management, including building line, building overall dimension and indexes of build-up intensity</td>
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<td>7. borders and rules of management of areas or objects under protection</td>
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<td>8. detailed rules for restructuring land holdings</td>
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<td>9. detailed conditions for land use as well as limitation in land-use including prohibition of building</td>
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<td>Obligatory in particular cases:</td>
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<td>1. areas required for restructuring land holdings</td>
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<td>2. areas of existing development scheme (build-up areas) and technical infrastructure rehabilitation</td>
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<td>3. areas for transformation and reclamation</td>
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<td>4. areas for shopping centers construction</td>
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<td>5. areas for leisure and recreation</td>
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<td>SCALE 1:1000, also permissible 1:500, 1:2000 or 1:5000</td>
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</tbody>
</table>

**management**

10. areas threaten with flooding and landslides
11. areas which require transformation, rehabilitation or reclamation
12. others problem areas

**SCALE 1:10 000 up 1: 25 000**

**President, mayor**
All planning documents in the Polish system are inter-related. Most of the relations are of up-down nature. The national plan recommendations should be included in the voivodeship plans, and subsequently recommendations from the national and voivodeship plans should be included on the municipal level (municipal study). Local land-use plan have to be agreed with recommendations of municipal study. In some situations, the relation can go in opposite direction – down-up.

Most important connection between planning documents is their common goal – implementation of public investments, which could be gathered in three groups: national (in responsibility of central government), voivodeship (in responsibility of regional self-government) and local (in responsibility of county and municipal self-government authorities). Central government, regional self-government and county self-government authorities have no responsibility to proclaim local law related to investment implementation, so its realization depends on incorporation an investment in local land-use plan (responsibility of municipal self-government).

It should be also emphasized, that planning documents should reflect a strategy of development of given area and sectoral programmes or policies.

I.2. Environmental analyses in spatial planning

It is necessary to say that today in Poland two kinds of environmental analyses are obligatory. First one called ecological physiography study is obligatory to be prepared before spatial development plan. The requirement was enforced in 2002 on the basis of the Environmental Protection Law. Second one is a strategic environmental assessment (SEA) and should be prepared at a final stage of spatial development plan process. SEA was enforced in Poland in 1998 (previous Act on Spatial Development).

First type of environmental analyses for local land-use plans had been obligatory up to 1984. Scope of analyses had been regulated by Instruction of 1964 on physiography study issued by Chairman of Urban Planning and Architecture Committee. In general, physiography study had consisted of two parts:
1. characteristics of all environment components
2. classifications of components with regard to their usefulness for different land use functions and management, mainly: housing and service supply, industry, agriculture and recreation.

The study also had included the nature protection issues.
In spite of the fact, that environmental study for land use plans were not obligatory for 26 years, in practice it was prepared. In most cases, environmental analyses were called environmental pre-conditions and formed a part of so called explanatory textual component of a spatial development plans of each level (national, regional, local) and also were incorporated into map of pre-conditions. Scope of the study was not defined, so there were significant differences, but at least their covered scope determined in regulation on physiography studies. Then recommendations of environmental analyses were included into final text and maps of spatial development plans. It should be stated that the approach was indirectly forced by previous Act on Spatial Development listing elements, which had to be considered and covered by plan, including those related to environment, nature, natural resources and landscape protection and conservation.

In 2002, the obligation for preparation of ecological physiography study was enforced again. The scope of study was described in Decree of Minister of Environment on ecological physiography study (9.09.2002). In the Decree the aims of ecological physiography study are determined as follows:

1) to adjust functions, structures and land use use intensity to environmental pre-conditions
2) to preserve main environmental processes in area under plan
3) to ensure conditions for resources renewal
4) to eliminate or reduce threats and negative impacts to the environment
5) to set up the direction for land reclamation.

Strategic environmental assessment was called in Poland “prognosis impact of plan recommendations at the environment and human health” up 2002. Scope of the prognosis was not defined in previous Environmental Protection and Management Act or in relevant decree. Mostly, authors of prognosis to determine its form and scope adapted outlines given for elaboration of environmental impact assessments.

The current requirement for ecological physiography study and SEA procedures in the Polish system of planning are presented in the table below.

<table>
<thead>
<tr>
<th>Planning documents</th>
<th>National spatial development concept</th>
<th>Voivodeship spatial development plan</th>
<th>Study on pre-conditions and directions of spatial development</th>
<th>Local land-use plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological physiography study</td>
<td>Not required</td>
<td>Required according to the Minister of Environment Decree</td>
<td>Not required</td>
<td>Required according to the Minister of Environment Decree</td>
</tr>
<tr>
<td>SEA</td>
<td>Required</td>
<td>Required</td>
<td>Not required</td>
<td>Required according to the Minister of Environment Decree</td>
</tr>
</tbody>
</table>
I.3. **SEA transposition into Polish spatial planning system**

Directive 2001/42/EC of the European Parliament and the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment is fully incorporated into Environmental Protection Law Act (EPLA) of 2001 in Chapters:

IV Environmental information
V Public participation in procedures related to environmental protection
VI Procedures related to environmental impact assessment.

In the Spatial Planning and Development Act of March 27, 2003, the requirements for SEA elaboration are also given.

Overall scope for SEA (called prognosis in Poland) is determined in EPLA (these are binding outlines for elaboration of prognosis for national spatial development concept and regional spatial development plans). The prognosis should:

1. inform on contents, main objectives of the plan or programme and relationship with other relevant documents
2. determine, analyze and assess current state of the environment and the likely evolution thereof without implementation of the plan or programme
3. determine, analyze and assess state of the environment of areas likely to be significantly affected
4. determine, analyze and assess existing environmental problems which are relevant to the plan or programme, especially those related to protected areas
5. determine, analyze and assess environmental protection objectives, established at international and national level which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation
6. determine, analyze and assess likely significant effects on the environment
7. present measures envisaged to prevent, reduce or compensate any negative effects on the environment of implementing the plan or programme
8. outline of the reasons for selecting the alternatives dealt with, and a description of how assessment was undertaken including any difficulties such as lack of know-how encountered in compiling the required information
9. describe methods implemented in prognosis elaboration
10. describe of the measures envisaged concerning monitoring of the plan or programme implementation
11. content information on potential transboundary impact
12. content a non-technical summary.

Additionally, Minister of Environment has given responsibility to prepare a decree on specific requirements for prognosis of local land-use plans. The related decree was issued on 14.11.2002.

The decree regulates:

1. a form of prognosis elaboration
2. a scope of issues which should be determined and assessed in prognosis
3. a spatial scope of prognosis
4. a type of documentations, which should be considered in prognosis.
According to the decree a prognosis should consist of text and maps in a scale of a local land use plan. In regard to spatial scope, a prognosis should cover the same area as a local land use plan and other areas, which are affected with implementation of a plan. The decree also stated that a prognosis should be elaborated simultaneously with a local land use plan.

Following issues should be determined and assessed in a prognosis:

1. in relation to effects:
   a. to the environment, which result of planned land use zoning category, including those caused by air emission, solid waste generation, waste water discharge, environment resources utilization, soil or ground contamination, negative transformation of land relief, noise emission, electromagnetic field generation and risk for significant operational failure,
   b. to air, earth surface, soil, mineral deposits, surface and underground water, climate, animals, plants – in their inter-action as well as to ecosystems and landscape caused by plan implementation,

2. in relation to assessment:
   a. environment state and functioning, its resources, resistance for deterioration, and capability to regeneration concluded from conditions determined in ecological physiography study as well as likely evolution thereof without implementation of plan
   b. function-spatial solutions and other plan recommendations in regard to:
      - compliance of plan with outlines developed in ecological physiography study
      - compliance with environmental regulations, especially with regulations on protected areas establishment and protection (conservation) plans,
      - efficiency of ecological diversity preservation,
      - optimal proportions among different land use areas (physically developed) and other areas
   c. conditions for land management determined in draft land use plan in regard to environmental protection needs, correctness of nature resources management and preservation of arable and forestry land,
   d. environmental threats, with consideration of impact at human health,
   e. effects for existing nature protection areas and other protected areas,
   f. landscape changes,

3. alternative solutions for elimination or limitation negative effects which likely could result from local land use implementation as well as proposals for different plan recommendations if needed.


As it was presented above guidelines for SEA preparation in Poland are included in environmental regulations. The content of SEA report defined in Environmental Protection Law was adapted from the Directive. The above Decree on prognosis for local land-use plans is more detailed scope of prognosis as well as its form and area under analysis.
The procedures described in the Directive are also incorporated into Environmental Protection Law especially in relation to public participation, environmental protection authorities participation as well as transboundary consultations, if needed. In general the idea given in Directive that the SEA should be made simultaneously with the plan or programme preparation is given in the Law and in the Decree.

II. PROCEDURES

II.1. Procedures related to SEA (called prognosis in Poland)

As it was presented above the Polish spatial system consists of 4 kinds of planning documents:
- national spatial development concept,
- voivodeship spatial development plan,
- study on pre-conditions and directions of spatial management,
- local land-use plan.

In general, planning process is similar for each of the planning documents, and involves the following steps:
1. collection of proposals and suggestions
2. determination of external and internal pre-conditions of development with relevant diagnosis, in four problem groups:
   a. environment
   b. social aspects, including culture heritage
   c. economy
   d. land-use and technical, transport infrastructure
   additionally, for local level, the ownership related issues are also investigated
3. elaboration of plan
4. consultations
5. verification according to output of consultations.

There are differences in planning procedures envisaged for different planning document in spatial planning regulations. It could be summarized that the most detailed procedure is for local land use plan (the smallest area and legally binding) while for national spatial development concept (country area) only the approval procedure is given.

According to the Environmental Protection Law, the SEA is obligatory for any of planning documents except study on pre-conditions and directions of spatial development of municipality. It should be emphasized that there are no legal possibility to overcome the obligation. The prognosis is also listed in the planning procedures determined by Spatial Planning and Development Act.

In general the planning procedures in Poland could be divided in following stages:
- collection of suggestion
- plan elaboration
- collection of comments (opinions) to plan
- verification of plan
- proclamation of plan
In the table below the legal planning procedures and its relation to SEA for each of planning documents is presented.

<table>
<thead>
<tr>
<th>Planning document</th>
<th>Planning procedure according to Spatial Planning and Development Act</th>
<th>SEA scoping</th>
<th>Prognosis elaboration</th>
<th>Prognosis consultations</th>
</tr>
</thead>
<tbody>
<tr>
<td>National spatial development concept</td>
<td>Only approval procedure is defined</td>
<td>Obligatory, but time is not determined, so it could be done at initial stage of determination of pre-conditions</td>
<td>At final stage of concept elaboration</td>
<td>As generally described in EPLA</td>
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</table>
| Voivodeship spatial development plan     | 1. Announcement in national papers and municipal, county, voivod and marshal offices on plan elaboration and form, site and deadline for suggestion submitting – min. 3 months  
2. Notification of different bodies on plan elaboration  
3. Consideration of suggestions  
4. Elaboration of voivodeship spatial development plan with prognosis of environmental assessment  
5. Opinion of voivodeship urban-architecture commission  
6. Opinion on plan of relevant bodies, including voivod, counties, municipalities located on area under plan as well as public administration bodies located on neighboring areas and others organizations according to obligatory regulations – min. 40 days  
7. Verification of plan according to collected comments  
8. Presentation of plan to infrastructure minister for opinion on compliance with national concept  
9. Presentation of plan to regional parliament for proclamation | Obligatory, but time is not determined, so it could be done at initial stage of determination of pre-conditions | At final stage of plan elaboration | As given in p. 5,6 Public participation according to EPLA |
| Study on pre-conditions and direction of spatial development of municipality | 1. Announcement in local paper and municipal offices on study elaboration and form, site and deadline for suggestion submitting – min. 21 days  
2. Notification of different bodies on study elaboration-14 days  
3. Consideration of suggestions – 21 days  
4. Elaboration of study  
5. Opinion of municipal urban-architecture commission -21 days  
6. Opinion of marshall office on compliance with voivodeship plan - 21 days  
7. Opinion of voivod office on compliance with national programmes - 21 days  
8. Opinion of study of – 21 days:  
  - county office  
  - neighboring municipalities | SEA is not required | | |
<table>
<thead>
<tr>
<th>Planning document</th>
<th>Planning procedure according to Spatial Planning and Development Act</th>
<th>SEA scoping</th>
<th>Prognosis elaboration</th>
<th>Prognosis consultations</th>
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<tbody>
<tr>
<td></td>
<td>- voivodeship monument conservation office</td>
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<td>- defense body</td>
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<td>- marine authority</td>
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<td>- manning office</td>
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<td>- geological body</td>
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<td>- health minister for health resort</td>
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<td>9. Verification of study concluded from above opinions</td>
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<td></td>
<td>10. Announcement on placing study on deposit and list of organizations which could submit comments – 14 days before day of placing</td>
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<td>11. Placing on deposit – min. 30 days, and organization of public hearing on study</td>
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<td>12. Collection of comments – 21 days (after placing on deposit)</td>
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<td>13. Presentation of study to municipal council for proclamation with the list of non included comments</td>
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<tr>
<td>Local land use plan</td>
<td>p. 1, 2, 3, as above</td>
<td>Not allowed</td>
<td>At final stage of plan designations elaboration</td>
<td>As given in p.5,6,10, 11, 12</td>
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<td>4. Elaboration of plan with &quot;environmental&quot; prognosis and financial prognosis</td>
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<td>5. Opinion of municipal urban-architecture commission and neighboring municipalities 21 days</td>
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<td>6. Opinion of plan of - 21 days:</td>
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<td>- voivod, marshal and county authorities,</td>
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<td>- voivodeship monument conservator office</td>
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<td>- others according to obligatory regulations</td>
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<td>7. Agreement on exchange of land-use of arable and forestry areas</td>
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<td>8. Verification of plan concluded from above opinions</td>
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<td>10. Announcement on placing plan with prognosis on deposit – 7 days before day of placing</td>
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<td>11. Placing plan on deposit – min. 21 days, and organization of public hearing</td>
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<td>12. Collection of comments – 14 days (after placing on deposit)</td>
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<td>13. Consideration of comments – 21 days</td>
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<td>14. Verification of plan</td>
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<td></td>
<td>13. Presentation of study to municipal council for proclamation with the list of non involved comments</td>
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</table>
In practice, a prognosis is contracted by urban planner at final stage of plan preparation. In many cases author of ecological physiography study to plan is contracted for the task. In most cases, a prognosis is positive for plan as it is prepared in result of permanent, working contact between a prognosis author and urban planner. In effects of working discussions a plan is verified in order to include environmental assessment conclusions. So at the stage of consultations, a plan consumes environmental assessment recommendations to highest extent.

In case of a voivodeship plan, a plan and prognosis is submitted for consultation to different bodies, among others to environmental protection bodies. Selected comments are included in a plan and prognosis after consultation with urban planner and marshall office. Than the verified plan is proclaimed.

In case of a local land-use plan, a plan with prognosis is consulted with, among others, environmental protection bodies. Selected comments are included in a plan and prognosis after consultation with urban planner and municipal office. In most cases, at this stage, all comments are incorporated into verified documents. Verified plan and prognosis are placed on deposit for 21 days, during the days the public hearing is organized. Then for next 14 days, comments of the public, non governmental organizations and others are collected. Selected comments are included in a plan and prognosis after consultation with urban planner and municipal office. Plan and prognosis are verified again. In some cases part of planning procedure has to be repeated (usually the opinion collection process and placing plan on deposit). Finally, a plan is proclaimed by municipal council. The discussion on comments is an obligatory annex to relevant act.

II.2. Challenges

As it was stated above the SEA is incorporated into Polish planning system, excluding one, quite important link – study on pre-conditions and directions of spatial development of municipality. That document is the only one which is prepared for the whole municipal area. Objectives of the study are as follows:
- to determine municipal spatial development policy
- to determine local principles for spatial management.

Moreover, the document creates a basis for incorporation of governmental and self-governmental investments into a local land use plan. The most important is that the document creates a basis for local land –use plan. Additionally, as it was mentioned, many important decisions are made in study, including decisions on:
- transformation of spatial management of municipality,
- directions of technical infrastructure and transport development,
- areas of location of public investments
- direction and principles of arable and forestry land management.

Taking under consideration, that SEA is being prepared for much more general planning documents as national and voivodeship plans, the decision on excluding a study from the procedure is not understandable. Especially when the influence of study to local land use plan is taken under consideration.

To summarize the issue it seems to be important to cover the study with obligation of SEA.
Moreover, even in small voivodeship the number of local land use plans under consultation is more than 500, so the environmental protection authorities are not in able to investigate them in details. So, it seems that for local land use plans, the SEA screening and scooping should be allowed when likely impact is small and the SEA procedure should not be recommended, e.g. for plans which covers only arable and forestry areas and the aim for plan elaboration is to introduce prohibition of building or for plans of green space etc.

III. Case studies

Case studies selected are:
1. Prognosis of environmental assessment elaborated for Local Land use Plan “Służewska Valley Park”
2. Prognosis of environmental impact elaborated for Local Land –use Plan of Repki municipality

First one is a Prognosis elaborated in 2002, before issue of Decree of Minister of Environment on specific requirements for prognosis of local land –use plans. Additionally, there was no obligation to prepare an ecological physiography study to plan as the planning process was started in 2001.

Second one is a prognosis elaborated in 2004 under requirements of relevant Decree for the local land –use plan for which an ecological physiography study elaboration was obligatory.

III.1. Prognosis of environmental assessment elaborated for Local Land use Plan “Służewska Valley Park”

Area covered with local land use plan “The Służewska Valley Park” is located in southern part of Warsaw. The plan covers the area of 50 ha. The main objectives of the plan were (i) the adaptation of the Służewski Creek Valley for recreation function as well as (ii) reduction of the streets and houses flooding (as a result of high quantity rain waters discharge). During the project, two alternative concepts for the Park management were elaborated. The concepts were prepared in order to investigate urban potential of the area. The first alternative assumed the possibly most intensive development of the area, including the multifamily building, municipal and commercial services. In the alternative the most of the area was adapted for recreation in association with sport and culture purposes.

The concepts were consulted with local community and different bodies. Selected components of the two alternatives as well as the inhabitants’ ideas were combined in the final concept, which created a basis for a draft land-use plan for the Służewska Valley Park.

The composition and functional spin of the park is the Central Path that is planned along the creek and consists of two separate parts: promenade and bicycle route. The bicycle route is planned as a part of the city net which will allow to bike from e.g. University Campus at Służew to the central University buildings situated in the historical part of Warsaw (at the Kings’ Road).
In a part of the Park located northward from the Central Path the sports fields, ecological education and culture center, playgrounds and recreational pond are designed. For more individual leisure, the biotope gardens related to water and lotic habitats are planned southward from the Central Path. On the slope of the valley next to the “small by-pass road of Warsaw”, the sectors for walks with dogs as well as twenty meters wide stripe of trees and bushes to isolate the park from the road are designed.

At present, when the draft plan was placed on deposit, it could be stated that a draft land use plan for “The Służewska Valley Park” is accepted by local community.

In prognosis, the description of current state of the environment was based on findings of environmental analyses called environmental pre-conditions, in which all archives were investigated moreover the geotechnical survey and vegetation inventory were made. At first role of area under plan in nature processes and its relationship with other areas of the same function were investigated. Then landscape, geomorphology, geology, land relief, soils, hydrogeology, hydrology, climate, acoustic climate, ecosystems were described by components with recommendations for plan.

The recommendations to plan of the environmental pre-conditions analysis were:
- to preserve the unique land relief
- to preserve current form of nature protection
- to preserve a biological processes which connects area under plan with neighboring green space spots
- to enlarge water retention in area under plan
- to improve water quality
- to improve a climate functioning of the area
- to improve a acoustic climate
- to preserve given trees and groups of trees
- to eliminate possibility of trees planting in given parts of valley
- to eliminate some of existing land-use
- to preserve a views

Assessment of impact was made in descriptive, expert way. Finally each of the land-use was described in table as follows:

<table>
<thead>
<tr>
<th>Urban units</th>
<th>Air emission</th>
<th>Waste water generation and discharge</th>
<th>Soil contamination</th>
<th>Unfavorable transformations of land relief</th>
<th>Noise emission</th>
<th>Electromagnetic field generation</th>
<th>Risk of significant operational failure</th>
</tr>
</thead>
</table>

Then, incorporation of recommendations of environmental pre-conditions to plan was made in table of following shape.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Consideration in plan</th>
</tr>
</thead>
</table>

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As area under plan was covered with nature protection, the consideration of nature protection regulations in plan was assessed.

Finally, evaluation of biological diversity and nature resources preservation in plan was made, also in expert way.

According with procedure the draft plan and prognosis was submitted for comments. On the basis of comments given by Voivodeship Office the draft plan and prognosis were verified. In December 2003, the draft plan and prognosis were placed on deposit for 21 days. During the period about 1000 inhabitants looked at the plan and prognosis. It should be added that the public interest was enhanced by articles in local newspaper and programmes in local TV which included the information on placing it on deposit. During 21 days the inhabitants could see a plan with prognosis and discussed it with urban planner. They also could ask for a copy of given part and they were informed on their rights for comments submitting. For next 21 days comments were collected, then comments were considered by urban planner and author of prognosis. Some of them will be incorporated in new plan edition.

III.2. Prognosis of environmental impact elaborated for Local Land –use Plan of Repki municipality

Area under plan was a strip of land of wide 25-40 meters of 17 km length where a construction of new oil pipeline (diameter 800 mm) is planned. It should be added that there are two old oil pipelines. The strip of land is crossing landscape park, area of protected landscape, planned nature reserve, archeological sites and in relation to land-use: arable land (fields, meadows and pastures), forests and roads as well as surface water – the Bug River.

The plan was preceded by ecological physiography study. As there was prepared environmental impact assessment for the investment, the study was based on it. In accordance with the Decree, the study should be based on comprehensive and complete research and sampling, analysis of teledetection data, archival materials, documents including: hydrological documentations, geological and geotechnical documentations, soil and ground maps, plans for forest management, plans for conservation (required for nature reserves, national parks and landscape parks) health resorts documentation, registers of monuments and archeological sites. The study covered (all items according to the Decree):

1. recognition and characteristic of state and functioning of the environment, including:
   a. environmental components and their inter-relations and natural processes
   b. existing transformations of the environment
   c. natural structures, including biological diversity
   d. environmental connections of subject area with its surrounding
   e. nature resources and their legal protection
   f. landscape values and its legal protection
   g. quality of the environment
   h. threats and identification of their sources

2. diagnosis of the state and functioning of the environment including:
a. assessment of resistance for deterioration, and capability to regeneration
b. assessment of state and protection and use of nature resources, including biological diversity
c. assessment of landscape values preservation and opportunities for it shaping
d. assessment of compliance of existing use with environmental conditions
e. assessment of character and intensity of evolution of the environment

3. preliminary prognosis of the likely environmental evolution under existing land use
4. determination of guidelines for function and spatial scheme
5. assessment of usefulness of the environment including determination of opportunities and limits for different land-use
6. determination of ecological physiography conditions including:
   a. determination of usefulness of area for: housing, industry, recreation and leisure, agriculture, forestry, health resorts, transport development
   b. determination of areas where the land use would be limited by needs for nature processes and biological diversity preservation
   c. determination limits related to nature resources preservation or existing threats.

Comparison of scope for the ecological physiography study and scope of prognosis (given in chapter I.3) shows more than 50% overlapping.

So, in case study, the prognosis repeats the ecological physiography study with additional elements like effects assessment, which was made as in environmental impact assessment report for investment. Also, in table, the investigation on involvement of ecological physiography study remarks into plan was made.

III.3. Summary

- baseline information for prognosis are mostly based on ecological physiography study, it could be updated by analysis of environmental impact assessment reports, strategic environmental assessments prepared for supra-local investment or other programmes or plans, administrative decisions on use of the environment (when their were prepared after ecological physiography study preparation),
- identification of relevant environmental objectives is made on the basis of those given in environmental regulations (for nature protection and particular environment component quality), but it could be also made on basis of analysis of those given in study on pre-conditions and directions of spatial development for municipality or in environmental protection programme (which are obligatory on each level of public administration in Poland),
- assessment methods are in general similar to environmental impact assessment report for investments when possible,
- prognosis has to assessed impact to human health and cultural heritage
- part of prognosis for alternative solution is mostly not included as guidelines of prognosis author are involved into plan on basis of working contacts with urban planner
- post-SEA monitoring is made according to comments of environmental protection authorities and inhabitants.

III.4. **Environmental analysis costs in spatial planning**

Prognosis is about 10% of plan cost. It should be stated that the ecological physiography study costs are 20% of plan elaboration. So, in total the cost of ecological analyses in plan are about 30%. It should be emphasized, that in same cases the cost could be even 50%. The most costly is a stage for input data collection (some of data like geology, hydrogeology are expensive) and digital maps preparation.