„BABES- BOLYAI" UNIVERSITY CLUJ-NAPOCA
FACULTY OF GEOGRAPHY

Strategic environmental assessment in Romania between goal and reality

PhD Thesis - Summary -

Scientific Advisor
University Professor, Dr. Petrea Dănuț

PhD Candidate
Ionescu-Tămaș Claudia-Thora

2015

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Key-words: strategic environmental assessment, territorial planning, environmental impact assessment, sustainable development, land use.

Introduction

„The best way to predict the future is to design it."

„The best way to predict the future is to design it.", used to remark Richard Buckminster Fuller, an architect and inventor at the middle of the past century. A statement that can be easily borrowed in the current context of territorial planning.

Although not necessarily in the field of territorial planning, mankind's concerns to control nature have existed since ancient times. In the current global context, which recorded an unprecedented demographic growth rate where the problem of the carrying capacity of the Earth is frequently addressed, terms such as sustainable development, sustainability, environmental conservation and self-sufficiency are becoming increasingly employed.

Precisely in this context, the desire to achieve the aspirations of sustainable development and sustainable use of resources, the need for a mechanism for strategic planning of the use of natural resources and impact prevention on the environment through a participatory process of making decision has been noticed. More than 10 years after the transposition of the strategic environmental assessment into the local legislative framework, through this paper we propose establishing the theoretical support defining the strategic environmental assessment, identifying key concepts and describing the whole methodology used in strategic environmental assessment and also capture a general image on how to integrate the concept of strategic environmental assessment into the context of territorial planning.

The work is designed to bring in a national context, a comprehensive description of the strategic environmental assessment designed to clarify both its origin, its purpose and usefulness. The work thus contributes to the completion of practical elements, existing in law, with the theoretical aspects of strategic environmental assessment and description of the associated methodological palette.

The main objectives of this scientific approach are:

- to define the theoretical support of the strategic environmental assessment of the national legislative framework and its implementation;

- to explain the specific methodological ensemble of the studied issue;
- to evaluate the efficiency, effectiveness and shortcomings of applying the SEA procedure and propose measures for improvement where necessary.

The originality of the work in the national context is reflected in the very topic of the paper. This work complements initiatives already manifested both in terms of establishing theoretical and methodological concepts and of performance, by capturing and specificity of the procedure.

The first chapter is dedicated to drafting the theoretical support for the creation of strategic assessment. Within this chapter, the concept of strategic environmental assessment is defined, starting from justifying its necessity in relation to the concept of environmental impact assessment and seeking meaning and purpose then, from a theoretical perspective.

The second chapter captures the major milestones in the scientific field to reflect the current state of research.

The third chapter gives a conceptual overview of issues relevant to the study, while exemplifying a palette and detailing of the methodology used in strategic environmental assessment.

The fourth chapter covers the proper research, conducted through two successive stages of analysis. The first stage involves multi-criteria analysis of 10 case studies, to highlight some elements of SEA performance of procedures performed. However, in a second step analysis, 3 of the 10 cases originally covered a fourth additional case are studied in detail in order to illustrate concrete situations relevant to the role and performance of the strategic environmental assessment procedure.

A final chapter, of conclusions, includes the results of research carried out and offers certain recommendations to improve the strategic environmental assessment process.

Section 1. The Strategic environmental assessment – origin, purpose and approach

This chapter envisages describing the concept of strategic environmental assessment in terms of justifying the need to conceptualize the strategic environmental assessment, to study the meaning, the forms and its evolution, to understand the role and the potential as a tool applied in the field of territorial planning. However, to understand the context in which this concept is used, there are a few general explanations made about territorial planning and environmental impact assessment, together with a set of benchmarks that create the legal framework of territorial planning and environmental protection in Romania.

1.1 The concept of strategic environmental assessment – origin and meaning

Mentioned for the first once with the drafting of EIA in the United States in 1969, under the Act of the National Environmental Policy (NEPA) passed by the US Congress, the strategic environmental assessment has been described as a need "to include every recommendation or legislative proposal ... a detailed statement on.... the environmental impact of the proposed action", SEA has taken a much longer time to become a notion itself (after Partidário, 2000).

Since acknowledging the necessity of what has become the strategic environmental assessment, the absence of a mechanism to evaluate the impact and environmental effects of the documents containing general measures, respectively policies, plans and programs has been noticed. The policies, plans and programs are usually documents whose measures often have a general nature and very few quantitative characteristic, as well as a high degree of specificity, which makes it difficult to assess the environmental impact related to their implementation.

The following is given a number of key events that have contributed to strengthening the notion SEA and independent procedure (Partidário, 2000, p.649):

- 1969 - The National Environmental Policy Act (NEPA) passed by the U.S. Congress, mandating all federal agencies and departments to consider and assess the environmental effects of proposals for legislation and other major projects.
- 1978 - US Council for Environmental Quality (USCEQ) issues regulations for NEPA which apply to USAID and specific requirements for programmatic assessments
- 1989 - The World Bank adopted an internal directive (O.D. 4.00) on EIA which allows for the preparation of sectoral and regional assessments
- 1990 - The European Economic Community issues the first proposal for a Directive on the Environmental Assessment of Policies, Plans and Programmes
- 1991 - The UNECE Convention on EIA in a Transboundary Context promotes the application of EA for policies, plans and programmes (adopted in Espoo, Finland) (Schrage, 1999)
- 1991 - The OECD Development Assistance Committee adopted principles calling for specific arrangements for analysing and monitoring environmental impacts of programme assistance (OECD, 1992)
- 1992 - The UNDP introduces the environmental overview as a planning tool (UNDP, 1992)

– 1997 - The European Commission issues a proposal for a Council Directive on the assessment of the effects of certain plans and programmes on the environment. (European Commission, 1997).

It is noted that the need for a mechanism to evaluate the environmental impact associated to the implementation of policies, plans or programs has been manifested in different economical and political contexts and under different forms, until the introduction of the concept of strategic environmental assessment, currently accepted and appropriated on widely.

The specific literature gives two widely accepted definitions of the concept of strategic environmental assessment. The first one was launched by Thérivel et al. (1992, p.19-20) and was later widely acknowledged: *"The formalized, systematic and comprehensive process of evaluating the environmental effects of a policy, plan or programme and its alternatives, including the preparation of a written report on the findings of that evaluation, and using the findings in publicly accountable decisionmaking".* The second definition, proposed by Sadler și Verheem (1996) in a study on the impact assessment process efficiency at international level, taking into account a much broader perspective of interference by the SEA in making environmental decisions:*"SEA is a systematic process for evaluating the environmental consequences of proposed policy, plan or programme initiatives in order to ensure they are fully included and appropriately addressed at the earliest appropriate stage of decision-making on par with economic and social considerations".*

It is obvious that these definitions of the strategic environmental assessment identify and confirm its practical attributes, its potential and contribution in making decisions being firmly recognized. The SEA is seen as a tool to integrate environmental role in the development of policies, plans and programs thet makes an important contribution in making decisions.

Despite the experiences of strategic environmental assessment for nearly three decades, there is still discussion on the methodological and theoretical aspects and the role of SEA in relation to the Environmental Impact Assessment - EIA - undertaken at the project level. As indicated by Clark in 2000, resumed Partidário (2000, p.648) *"it appears that SEA has different features to other types of impact assessment. While high quality assessment of cumulative effects makes EIA richer and assessment of social impacts makes EIA deeper, SEA is a different kind of analysis. Recognizing this difference may be a crucial condition for understanding SEA and allow process and practice improvement."*

The major difference in the two concepts lies in their scope.

1.2 The purpose, role and different means to approach the strategic environmental assessment in the context of territorial planning

According to the submissions of Partidário (2000, p.651), extending the principles of EIA at project level policy and planning was a natural step, but not one devoid of strength. Especially in territorial planning, practitioners claim that plans already cover a wide object of analysis (including issues related to the natural, the social and economic), while planning methodologies already treat the conflict - solution problem and benchmark the alternative solutions.

It appears that the SEA is seen as a phase which takes place prior to the EIA, a step that should ensure the consideration of the environmental issues,ever since the establishment of the policy and theoutline the plans or programs. From a procedural standpoint, it can be said that SEA is a tool used systematically at the highest decision-making level, which facilitates very early the integration of environmental considerations into the decision making process, and leads to the identification of specific measures to improve the outcomes. Also, it establishes a framework for subsequent evaluation of projects in terms of environmental protection. The role of SEA role is therefore to complete the environmental impact assessment for projects.

1.3 SEA Directive and the interational context

Progress in the development of legislation and enforcement guidelines occurred on all continents in countries such as Australia, Canada, Hong Kong, Japan, Norway, South Africa and more recently in the European Union. Although the European Union has legislated this concept only in 2001, some European Union member states already had a strategic environmental assessment mechanism. These include Britain, Denmark, Finland, France and the Netherlands.

1.3.1 SEA Directive and the framing of the legislative context

Directive 2001/42 / EC of the European Parliament and of the Council on the effects of certain plans and programs on the environment, published in the Official Journal of the European Union L197 came into force on 27 July 2001 and it was mandatory for Member

States to transpose its content in their legislation by July 2004. The objectives of the SEA Directive are:

- to provide for a high level of protection of the environment;
- to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment.

The main steps of the procedure, according to the SEA Directive are:

- Screening;
- Scoping;
- Elaboration of the environmental report;
- Analysis regarding the quality of th environmental report and the proposed alternatives;
- Decision making;
- Monitoring.

There are two issues to be covered during the entire course of the implementation of the procedure. They are the integration of the environmental considerations into the planning process and the public participation. Hence, throughout the procedure it s necessary to take into account the fact that its purpose itself is to ensure the integration of the environmental aspects into the spatial planning, as well as to take to always take into account the view and the contribution of public opinion.

SEA Directive requires a minimum content framework that lays down general principles concerning the impact assessment system, allowing each Member State to customize the details of the procedure. Given the freedom to finalize the procedural content of the strategic environmental assessment and to determine methodologies applied, each Member State is directly responsible for the effectiveness of the procedure and how the results of the procedure helps to meet environmental objectives set at national and European level.

1.3.2 The international experience with the strategic environmental assessment

Prior to discussing the differences of approach to SEA in the international context, it should be noted that countries with experience in environmental protection show a flexible

attitude regarding the application of this concept. It is obvious that depending on the results and performance in environmental protection, various solutions were modeled by applying SEA.

After studying the international experience with SEA, four categories could of situations have been observed:

- Countries with experience in the procedure of environmental impact assessment, which identified their own solutions for the consideration of environmental aspects associated with policies, plans and programs (New Zealand, Australia, Canada, Denmark and the Netherlands);
- Countries with little experience in strategic environmental assessment, acquired as a result of joining the European Union and therefore the transposition of the acquis communautaire (Romania, Bulgaria, Czech Republic);
- Countries confronting with an acknowledged need for legislative mechanisms for assessing the environmental impacts associated plans, programs and strategic initiatives, that so far have not identified an optimal solution to be adopted;
- Countries with their own system of evaluation of environmental impact, without adhering to the values promoted internationally in the field. Here fall Belarus, the Russian Federation and others.

1.4 National context and specific legislation

If regarding the territoriall planning concerns for regulators have started earlier, in terms of environmental protection, it should be noted that the purpose of legislating manifestations of environmental impact assessment appeared much later. The use of mechanisms to prevent impact on the environment has emerged while integrating the acquis communautaire into national legislation.

1.4.1 The general legislation on territorial planning in Romania – Law no. 350/2001

The main legal instrument in the field of urban and spatial planning in Romania is represented by Law no. 350/2001. Under Article 2 (3) of the Law aforementioned "spatial management of the territory is achieved through spatial and urban planning, which are assemblies of complex activities of general interest that contribute to the balanced spatial

development, protection of natural and built heritage and to improve living conditions in urban and rural areas. "

In accordance with Article 3 spatial planning activity should be:

- *global*;
- *functional*;
- *prospective*;
- *democratic*.

The territorial planning whose purpose is to harmonize the entire territory of the economic, social, environmental and cultural policies, is conducted throughout Romania on the principle of hierarchy, spatial cohesion and integration, national, regional and county.

According to van der Valk and Faludi (1994) cited by Benedek (2004, p.113), spatial planning is a process that requires:

- a descriptive phase, which formulates problems and describes the considered region;
- analytical phase, which establishes the relations between territorial components, the trend outlines for various phenomena, all on a solid theoretical base;
- last phase is that of social engineering, in which the synthesis of the results is made and development concepts are elaborated

The strategic environmental assessment can be considered a stage of the analytical phase, where relations are established between the territorial components, and potential environmental impacts associated with implementing significant proposed plan or program are evaluated.

1.4.2 The strategic environmental assessment legislation in Romania – Gevernment Decision no. 1076/2004

The SEA Directive was transposed into national legislation by Government Decision no. 1076 of 8 July 2004 establishing the procedure for environmental assessment of plans and programs. The stated objective of the decision is to ensure a high level of environmental protection and to help integrate considerations on the environment in the preparation and adoption of certain plans and programs in order to promote sustainable development by conducting an environmental assessment of plans and programs which may have significant effects on the environment. Environmental assessment is an integral part of the procedure for adopting plans and programs; it is carried out during the preparation of the plan or program

and completed prior to its adoption or submission to the legislative procedure. According to Article 3 (2) of the decision, the environmental assessment procedure is carried out in stages:

- screening stage of the plan or program in the environmental assessment procedure;
- stage of finalization of the draft plan or program and the achievement of the environmental report;
- quality analysis of the environmental report.

The consultation group is composed of representatives of plan or program owner, the competent authorities for environmental protection and health and other authorities concerned of the effects of implementing the plan or program, identified by the owner as being potentially interested in adoption of the plan or program.

The content of the environmental report content takes over and is limited to the provisions of the SEA Directive:

- an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;
- the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;
- the environmental characteristics of areas likely to be significantly affected;
- any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;
- the environmental protection objectives, established at international, Community or Member State 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;
- the likely significant effects(1) on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;
- the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;

- an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;
- a description of the measures envisaged concerning monitoring in accordance with Article 10;
- a non-technical summary of the information provided under the above headings.

The environmental report is a technical document, it must be developed by individuals or legal entities certified by the ministry to develop the environmental report.

The quality analysis of the environmental report, made by the competent authority for environmental protection, has the following elements:

- compliance with the required framework;
- presenting the technical, procedural and other obstacles that were encountered and explaining any assumptions and uncertainties;
- presenting the studied alternatives, reasons for their choice of one of them, of how environmental considerations have been integrated into the draft plan or program and the process of finalizing the draft as a result of information derived during the environmental assessment;
- detailed justification of the reasons behind the elimination of some aspects;
- considering the issues raised during the consultation process with other authorities and the public;
- graphical presentation of information - maps, charts, drawings, diagrams;
- existence of a monitoring program for environmental effects.

The decision to issue the environmental permit includes:

- reasons for issuing th permit;
- measures decided concerningthe monitoring of environmental effects;
- measures to reduce or compensate for significant environmental effects and significant transboundary effects, as applicable.

One of the provisions of the SEA Directive, transposed into national legislation, is the monitoring post-implementation of plans and programs based on a monitoring program approved during the environmental assessment process. In this respect, the monitoring program is part of the environmental permit issued under it and relate, usually annual state of the environment in the area of the plan or program implemented is reflected in some indicators deemed relevant.

1.4.3 Competent environmental protection authorities and respensibilities

The central public authority for environmental protection is the Ministry of Environment, Water and Forests, the National Agency for Environmental Protection. Although a young institution at national level, the National Environmental Protection Agency supported reorganizations often (Government Decision no. 459/2005, Government Decision no. 918/2010 and that Government Decision no. 1000/2012).

Tab1e.1. Competent environmental protection authorities in 2004-2012

Types of plans/programs submitted to SEA	**Competent Authorities SEA**	**Competent Authorities EIA**	**Types of projects submitted to EIA**
Inter-regional an national PP	**National** Environmental Protection Agency	**National** Environmental Protection Agency	Inter-regional an national projects
Inter-county and regionl PP	**Regional** Agency for Environmental Protection	**Regional** Agency for Environmental Protection	Inter-county and regionl projects
County PP	**Regional** Agency for Environmental Protection	**County** Agency for Environmental Protection	County projects
Local PP	**Regional** Agency for Environmental Protection	**County** Agency for Environmental Protection	Local projects

Table 1.2. Competent environmental protection authorities in 2004-present (11.2015)

Types of plans/programs submitted to SEA	**Competent Authorities SEA**	**Competent Authorities EIA**	**Types of projects submitted to EIA**
Inter-regional an national PP	**National** Environmental	**National** Environmental	Inter-regional an national projects

Types of plans/programs submitted to SEA	Competent Authorities SEA	Competent Authorities EIA	Types of projects submitted to EIA
	Protection Agency	Protection Agency	
Inter-county and regionl PP	**National** Environmental Protection Agency	**National** Environmental Protection Agency	Inter-county and regionl projects
County PP	**County** Agency for Environmental Protection	**County** Agency for Environmental Protection	County projects
Local PP	**County** Agency for Environmental Protection	**County** Agency for Environmental Protection	Local projects

1.4.4 Stakeholders

Regarding the entities that ought to be considered stakeholders, of them are part of almost every following: the authorities of public health (eg local departments of public health), the area of water management (Romanian Waters National Administration, administrations subordinated to it), the management of forests (ROMSILVA National Forest, inspectorates forestry and Hunting, and the forestry districts, etc.) or custodians and stewards of natural protected areas.

Section 2. International and local scientific contributions in asserting and promoting SEA

This section offers an overview into the main scientific contribution to the international and national strategic environmental assessment relevant to the items discussed in the paper. The existing contributions were presented on finding the need strategic environmental assessment and the definition of strategic environmental assessment.

2.1 Important international scientific contributions

Particularly in the last 25 years significant advances have been determined in the field by contributions from promoters such as Riki Thérivel, Maria Partidário, Barry Dalal-Clayton and Barry Sadler. In 1992, the "Strategic Environmental Assessment" , was published by Riki Therivel et al (Thérivel et al., 1992), whereby defined and analyzed strategic environmental assessment in the broader context of the assessment environmental impact. The study also captures the current state of SEA, evaluating ways of implementing it, while providing critical analysis techniques utilazate, without letting listed importance of this instrument in the future.

Maria Partidário published in 2000 the collection "Perspectives on Strategic Environmental Assessment" (Partidário et al., 2000) and "Elements of year SEA framework - Improving the added-value of SEA" (Partidário et al., 2000b), the latter explaining in a comprehensive manner procedural steps of strategic environmental assessment, their role and the European framework.

Barry Dalal Clayton and Barry Sadler published in 2005 a valuable collection of experiences on strategic environmental assessment applied internationally, through a very comprehensive analysis of case studies from various socio-political, economic and cultural. The paper is entitled "Strategic Environmental Assessment - A sourcebook and reference Guinda to international experience" (, Dalal-Clayton, Sadler, 2005).

In 2013, Riki Thérivel publishes "Strategic Environmental Assessment in Action" (Strategic Environmental Assessment in Action, Thérivel, 2013), a veritable guide application type SEA assessment, depending on the context and the specific elements studied plans.

2.2 National scientific contributions

If the environmental impact assessment in general is a constant scientific concern nationally encountered in the last 15 years, the strategic environmental assessment has become an object of scientific concern nationally, more recently. One can distinguish the contributions of Oroian I. collaborators, whose studies aimed at explaining the purpose and legislative framework to conduct the procedure, as well as the contributions of Corpade, Ana-Maria and collaborators, whose studies are focused on the identification and implementation of methodological tools SEA.

Oroian and collaborators studied the legislative framework for the implementation of strategic environmental assessment procedure. Thus in *"The Strategic Environmental*

Assessment - European and Romanian Legislation" (Oroian et al., 2008) published in the journal ProEnvironment 1 are described and explained the content elements of the SEA Directive and the manner in which its provisions were transposed into the national legal context. In the paper "Approaching plans and programs in light of the strategic environmental assessment" (Oroian et al., 2008b), published in ProEnvironment 2,the authors describe the national procedure of the strategic environmental assessment of plans and programs.

The contributions of Corpade, Ana-Maria and collaborators are oriented so the practical aspects of the strategic environmental assessment, the identification of methodological steps and specific indicators for strategic environmental assessment of plans and programs in different fields, such as urban planning, hydroenergetic planning or development of transport infrastructure.

Thus, in *"Integrationg Environmental considerantion into transportation planning through Strategic Environmental Assessment"* (Corpade, Ana-Maria et al., 2012), Corpade, Ana-Maria and collaborators study the benefits of strategic environmental assessment procedure and its contribution into the process of decision making d in the field of strategies or plans for transport.

Another work of the kind that capture elements such as identification of methodological tools for strategic environmental assessment of plans and programs is *"The Role of SEA in integrating the Environmental considerations into the planning of hydroenergetic plants"* (Ionescu, Claudia-Thora et al., 2013). This paper provides information on the institutional aspects of the procedure for strategic environmental assessment, while capturing the potential benefits of SEA assessment and management of environmental impacts, and relevant items to consider in evaluating the quality raporartelor environmental planning documents hydropower and targets need to be achieved in relation to water resources management.

Keeping the same concern for identification of methodological tools in strategic environmental assessment mentioned paper *"Toward Strategic Environmental objectivity in the assessment by the territorial Applying performance index. Case study"* (Ionescu-Tămaș, Claudia-Thora et al., 2015). The paper provides an analysis of the potential contributions of territorial performance index (Mondini, Valle, 2007) to strategic environmental assessment of plans and programs.

Section 3. Conceptual and methodological aspects of the strategic environmental assessment

3.1 Terminology – cencepts and terms used

The concepts and terms used in this paper are those associated with the concept of strategic environmental assessment, both in literature and in practice in the field:

- Plans and programs;
- Environmental assessment;
- environmental permit;
- Environmental report;
- Consulting group;
- Public;
- Decision makers;
- Stakeholders;
- Built-up area;
- Biodiversity;
- Natura 2000;
- Natural habitat;
- Habitat of community interest;
- Priority habitat;
- Species of community interest;
- Environmental monitoring;
- Natural resources.

3.2 Principles and methods used in the strategic environmental assessment

The strategic environmental assessment aims to provide an integrated approach to the planning process in order to achieve the goal of sustainable development. Given its purpose, its means of approach, it could be said that the whole concept of strategic environmental assessment adheres to the following principles:

- sustainable development;
- ecological principles;
- the principle of cohesion and spatial integration;

- the principle of prospective;
- the principle of causality;
- the principle of hierarchy;
- the precautionary principle in decision making;
- the principle of transparency in decision making;
- the principle of conservation of biodiversity.

The main methods for evaluation used in the strategic environmental assessment are listed in the following:

- the control list method (adapted Muntean, 2009 p.3);
- the method of overlapping thematic maps;
- matrix methods:
    - the impact matrix;
    - the compatibility matrix with sustainability criteria;
    - the calculation of the performance index calculation Territorial (after Mondini, Valle, 2007).

3.3 Defining the woring methods and techniques used

The research methods used to achieve this paper are part of the following categories:

- investigative methods: analysis, synthesis, inductive and the deductive method and specific methods of investigation. Specific investigative methods used are comparative method, statistical method, the method of quantitative and qualitative analysis, cartographic analysis and functional.
- methods of systematization of knowledge. Systematization of knowledge has been achieved as classified information according to a number of parameters considered relevant.
- representation-investigation methods: graphical representation methods of statistical data, cartographic method and logical-mathematical modeling method.

Regarding the research techniques used, these were: direct nnd indirect observation, statistical evidence and statistical processing, as well as the inquiry. In the places direct observation was not possible, the investigation was completed by indirect observation, made by using other sources of information such as maps, photographs, satellite images and various graphics available.

Section 4. Analysis of the role of SEA in the territorial planninng

4.1 The research purpose and the motivation for choosing the subject for study

This research aims at analyzing the role of strategic environmental assessment in spatial planning, studying the benefits and limitations that this instrument has in practice in a European context reaching toward goals such as sustainable development and self-sufficiency.

4.2 The defining criteria used for analyzing the results SEA

Once the defining elements of the concept of strategic environmental assessment, as well as the issues concerning its practical use have been established, it proceeded to the selection criteria, and to the analysis of its results in relation to the contents of the plan or program subject to the procedure.

The analzysis for the effectiveness of the SEA was conducted in two stages:

- a primary analysis, of statistical nature, designed to capture trends within the SEA procedure;
- a secondary analysis of depth, the purpose of which is to explain the benefits and limitations of the use of the SEA, considering that we exhibit different results.

Criteria considered relevant for the analysis of the efficacy and justified SEA are set out below:

- The total number of stakeholders identified;
- Share of stakeholders who participated in the proceedings of all the factors identified;
- The total number of proposed measures as a result of the procedure;
- share of measures ofstrategic nature of all proposed measures;
- Tther alternative than the 0 alternatives than used during the procedure;
- The incidence of plans or programs with protected areas;
- The total number of comments and observations from the public;
- Type of beneficiary (institution or public authority or private entity);
- The total number of changes incurred by plan or program as a result of the procedure;
- The existence of incompatibility leading to the rejection of the application for the environmental permit.

The selection of subjects that have become case studies was based on several criteria, taking into account that such studies addressed to the following conditions:

- plans and programs to initiatives of both public authorities and institutions and therefore be of public interest and private sector entities, with their own interest;
- plans or programs to represent both strategic documents containing general measures (such as development strategies), and specific documents aimed at further implementation of concrete projects, such as zoning plans, aiming to cover more hierarchical levels;
- documents submitted for approval aimed, on the one hand, overlapping locations of protected areas, on the other hand, land areas that do not overlap with natural areas protection regime;
- not least, an important condition was that represented by the availability of information necessary studies. Given that most of the data needed studies are found in the files of approval at the competent authorities for environmental protection, namely environmental protection agencies, access to the study records and disposal of that material was fundamental condition for the study.

Most representative case studies were individually studied in depth, with the aim of explaining the observed benefits, and limitations of the SEA in the context of territorial planning.

4.3 The primary analysis of SEA procedues

By applying the representative criteria set out above, 10 subjects were selected for case studies (Table 4.1). The proper study of the selected files of SEA procedures, was conducted from June to November 2014, respectively, from April to August 2015.

Table 4.1. The list of plans and projects submitted to the study

No.	Title of the plan or program in question	Location	Beneficiary
1	Reactualizarea Planului Urbanistic General al municipiului Dej	Municipiul Dej	Primăria Municipiului Dej
2	Actualizarea Planului Urbanistic General al municipiului Cluj-Napoca	Municipiul Cluj-Napoca	Primăria Municipiului Cluj-Napoca
3	Reactualizare Plan Urbanistic General al comunei Apahida	Comuna Apahida	Primăria Comunei Apahida
4	Reactualizare Plan Urbanistic General comuna Beliș, județul Cluj	Comuna Beliș	Primăria Comunei Beliș
5	Strategia de dezvoltare a județului Cluj pentru perioada 2014-2020	Județul Cluj	Consiliul Județean Cluj
6	Plan Județean de Gestionare a Deșeurilor, județul Cluj	Județul Cluj	Consiliul Județean Cluj
7	Plan Urbanistic Zonal – Parc eolian, extravilan Gârnic, județul Caraș-Severin	Comuna Gârnic, județul Caraș-Severin	SC CS WIND PROJECT SRL
8	Plan Urbanistic Zonal – Amenajare zonă turistică și domeniu schiabil Nedeia – Munții Țarcu, comuna Zăvoi	Comuna Zăvoi, județul Caraș-Severin	SC Dunca Imobiliare SRL
9	Plan Urbanistic Zonal – Drum de acces și deschidere carieră de extracție piatră (calcar)	Comuna Petrești de Jos, județul Cluj	SC YU TANG SRL
10	Plan Urbanistic Zonal – Centrală Hidroelectrică cu Acumulare prin Pompaj Tarnița-Lăpuștești	Comunele Râșca, Căpușu Mare, Mărișel și Gilău, județul Cluj	Hidroelectrica SA, Sucursala Hidrocentrale Cluj

4.3.1 Elements regarding the content of the studied plans or programs

For each of the plans and programs surveyed in the present section, the relevant content elements have been described, and then a table was filled with values for each of the criteria selected/.

4.3.2 Analysis and interpretation for the criteria values

The values recorded particularly for the 10 cases examined were accumulated and interpreted within this section to highlight some trends in practice, to identify some efficiency elements of the procedure, but also its limitations and challenges.

Criterion 1. The total number of stakeholders identified

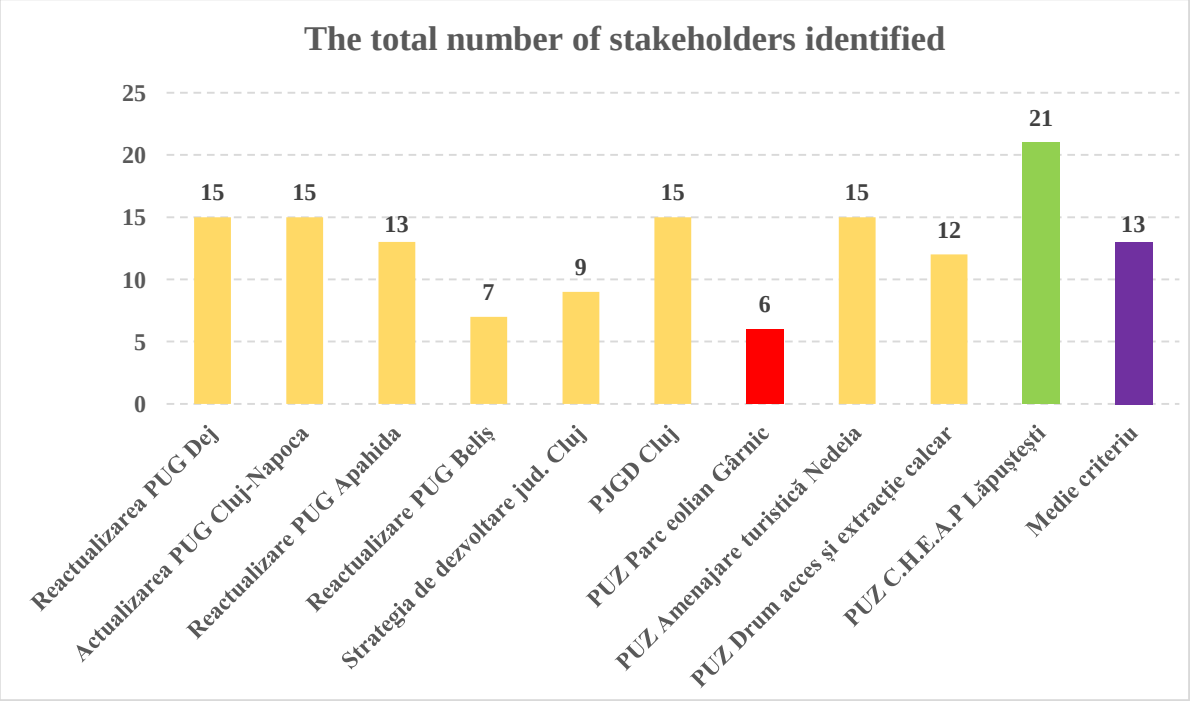

Fig. 4.1. Values for criterion 1

Criterion 2. Share of stakeholders who participated in the proceedings of all the factors identified

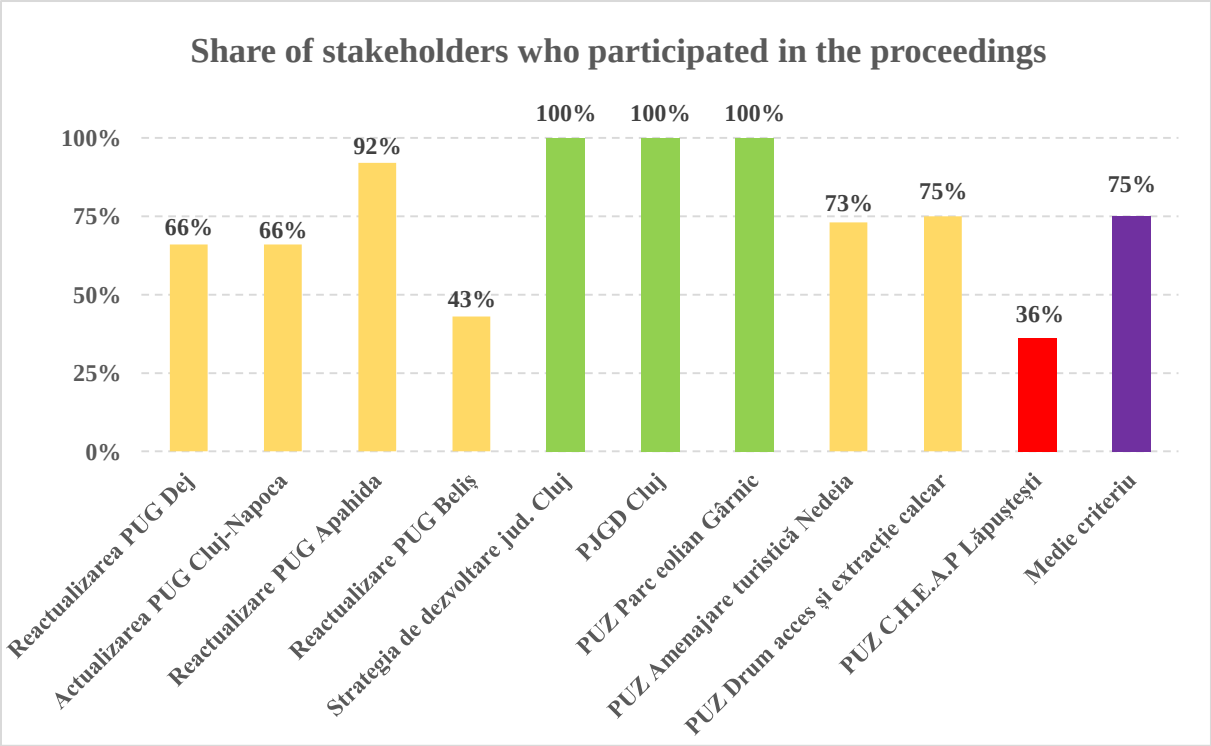

Fig. 4.2. Values for criterion 2

Criterion 3. The total number of proposed measures as a result of the procedure

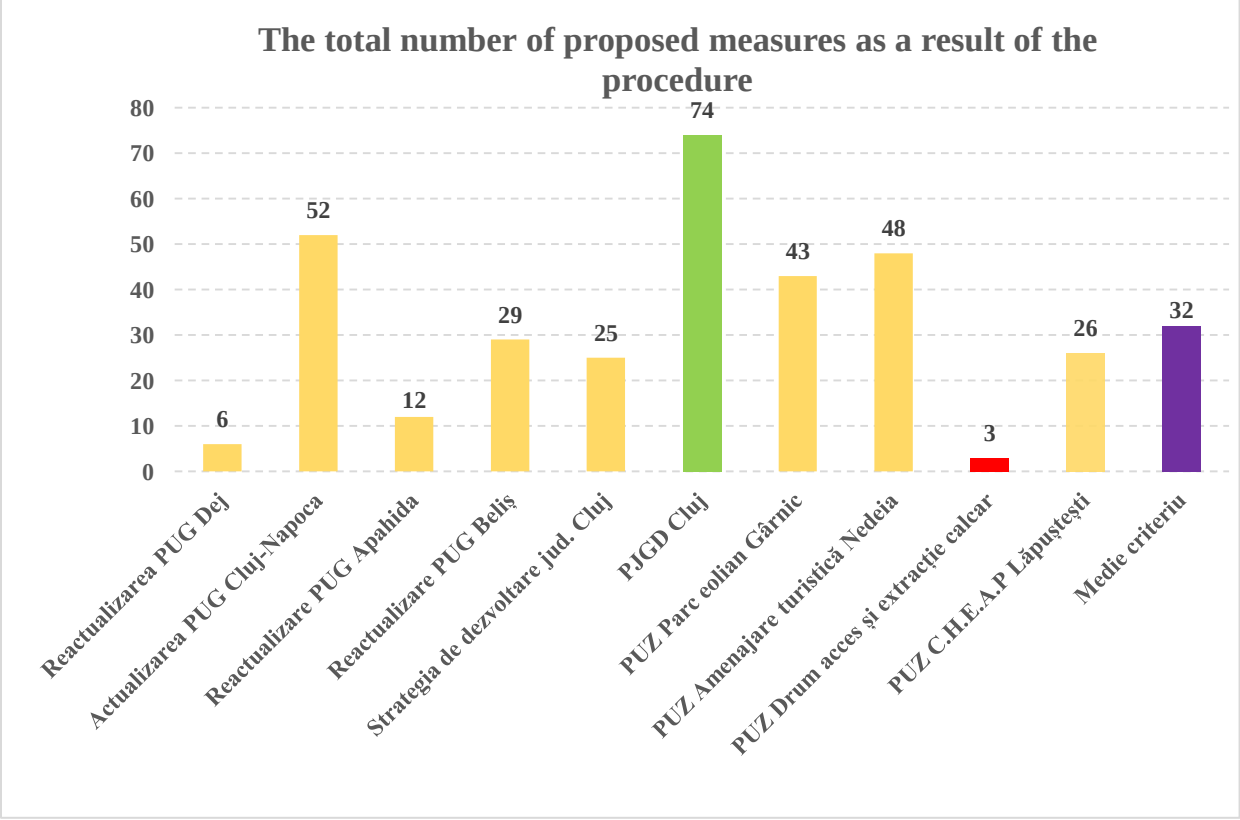

Fig. 4.3. Values for criterion 3

Criteriul 4. Share of measures of strategic nature of all proposed measures

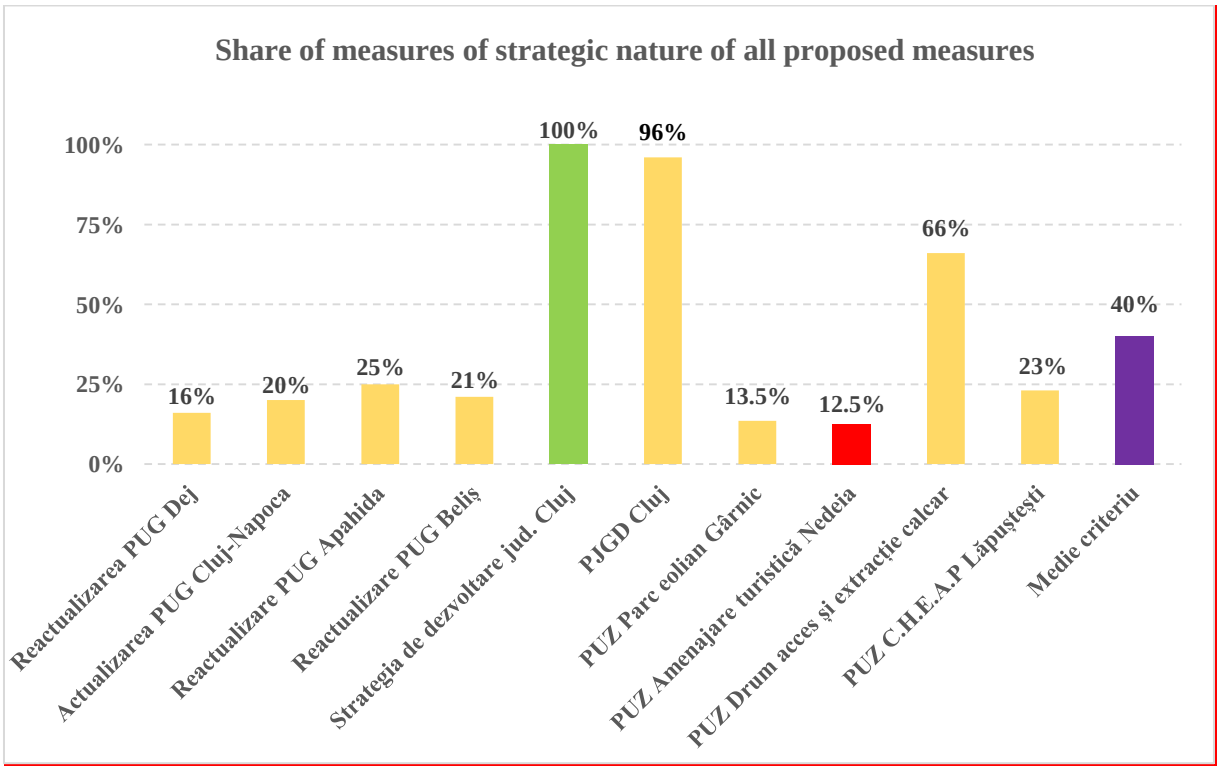

Fig. 4.4. Values for criterion 5

Criterion 5. Otherr alternative than the 0 alternatives than used during the procedure?

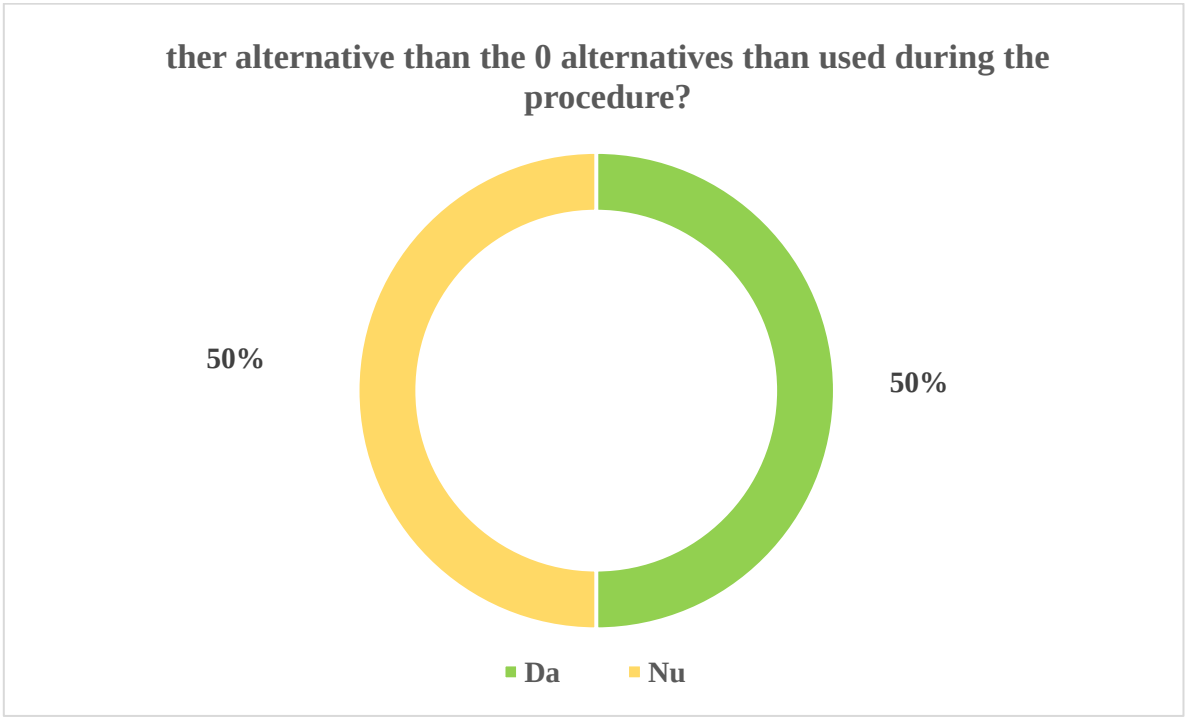

Fig. 4.5. Values for criterion 5

Criterion 6. The existence of incompatibility leading to the rejection of the application for the environmental permit.

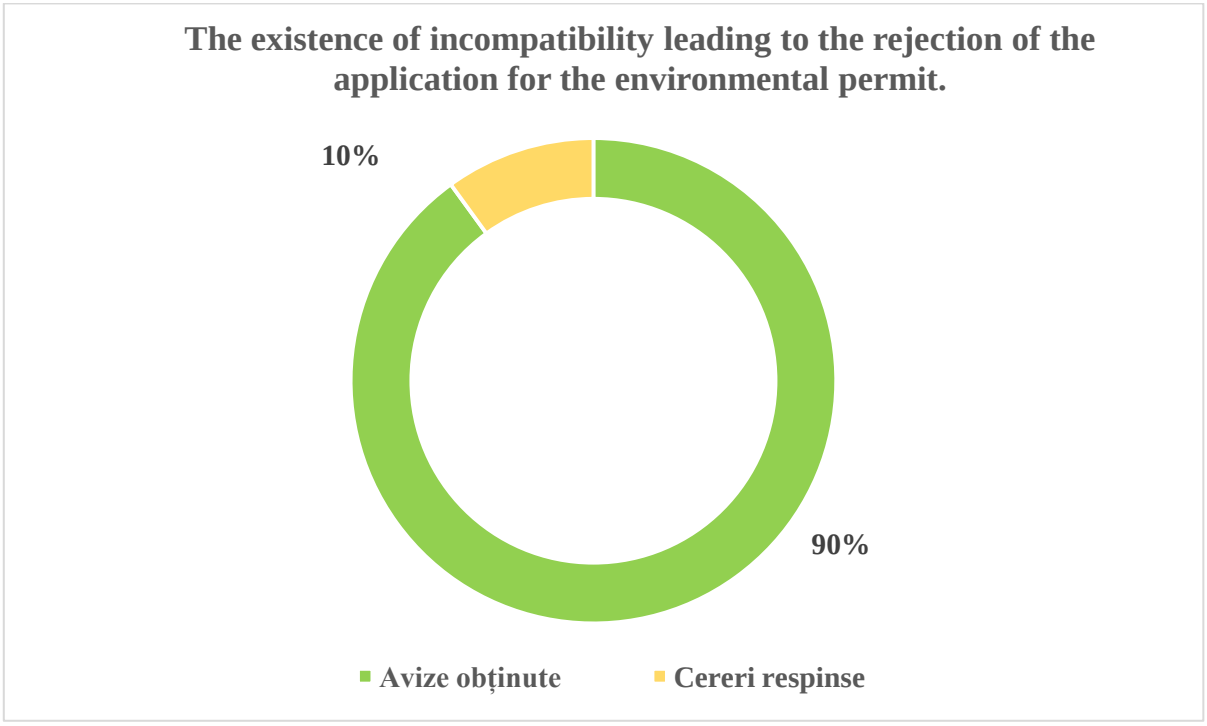

Fig. 4.6. Valuesfor criterion 6

Criterion 7. The incidence of plans or programs with protected areas

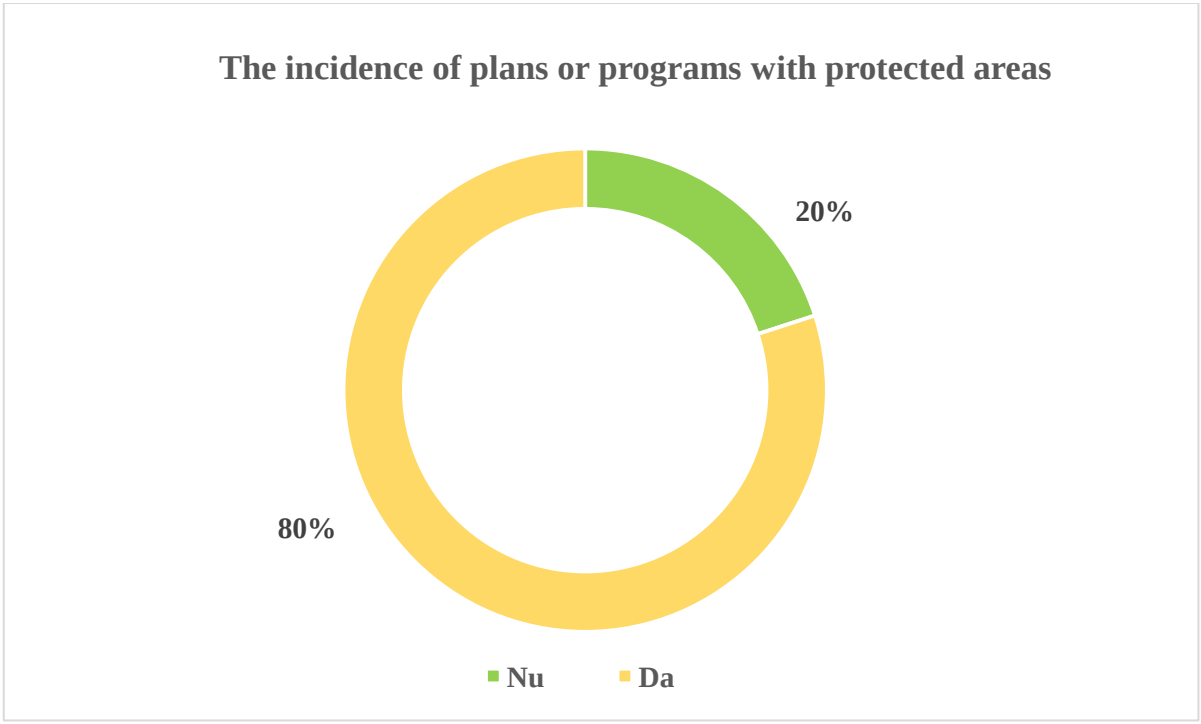

Fig. 4.7. Values for criterion 7

Criterion 8. The total number of comments and observations from the public

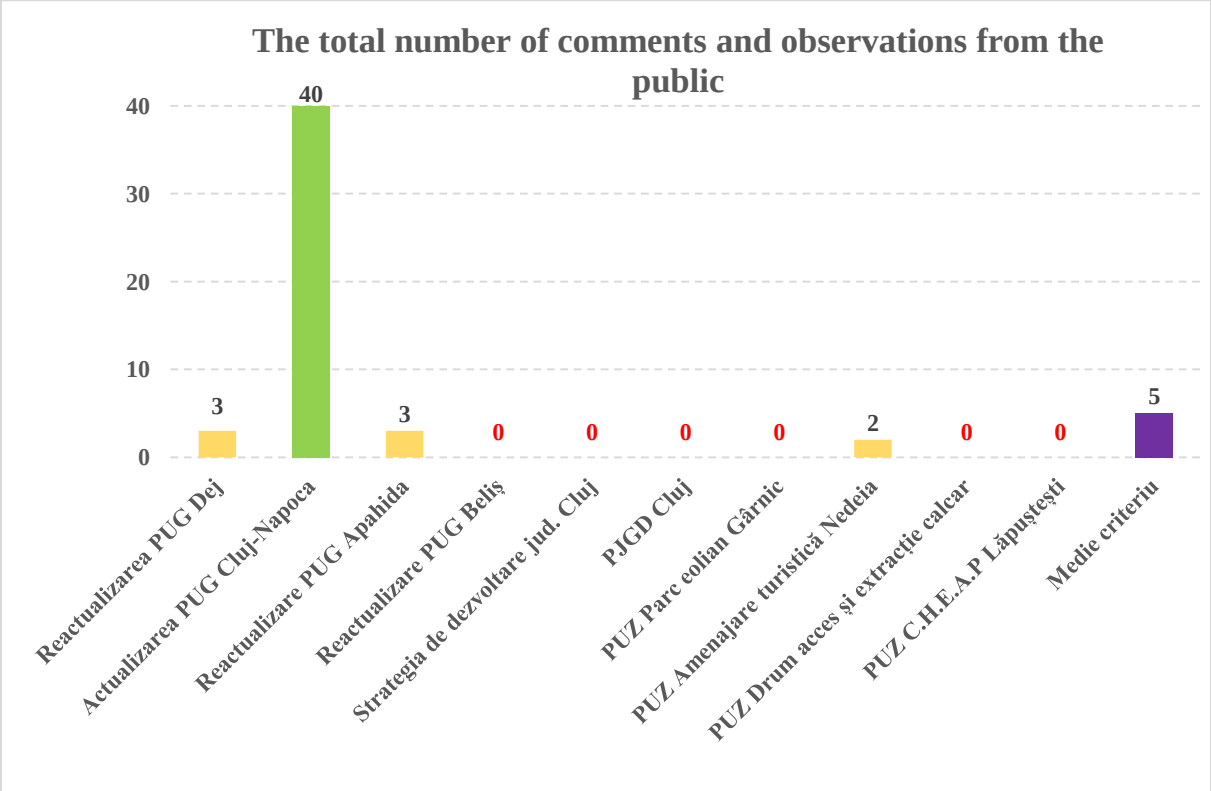

Fig. 4.8. Values for criterion 8

Criterion 9. The total number of changes incurred by plan or program as a result of the procedure

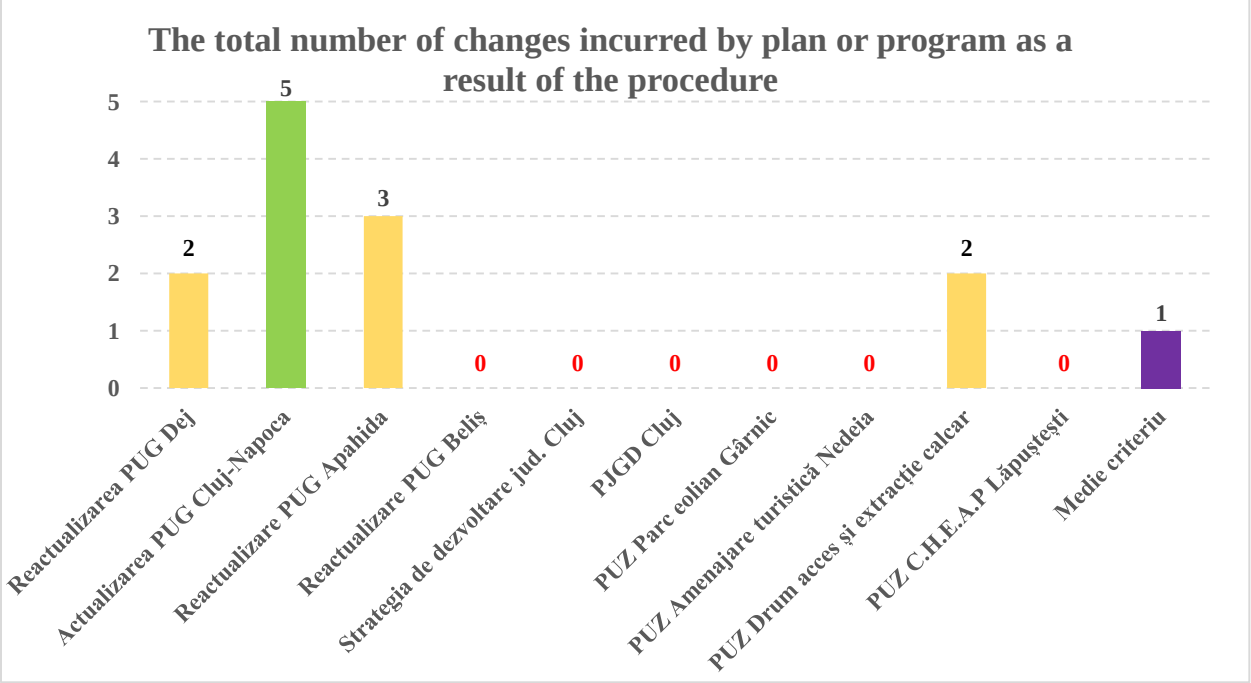

Fig. 4.9. Values for criterion 9

Criterion 10. Is the beneficiary a public or a privat entity?

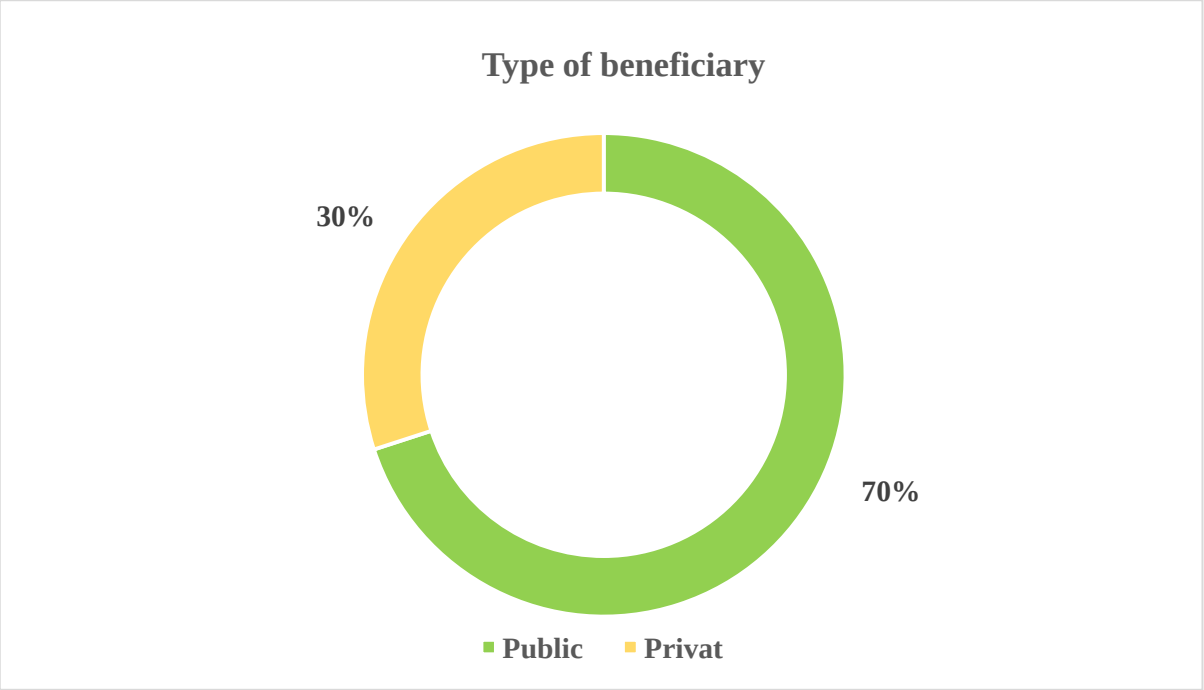

Fig. 4.10. Values for criterion 10

4.3.3 Conclusions of the primary analysis

The primary analysis of strategic environmental assessment procedure was based on predetermined criteria and aimed at highlighting the characteristics and tendencies evaluation of the extent to which they contribute effectively to the decision-making process. For this, they approached the individual 10 case studies, after which the results were aggregated for each criterion of analysis. Summarizing the results of the analysis criteria, we can draw the following conclusions:

- strategic environmental assessment procedure is a participatory decision-making process, about 75% of the factors considered to be of interest for the proceedings, taking part in it.
- inn terms of flexibility in making decisions, the analysis of case studies found that offering alternative arrangement concretely grounded not constitute always the element defining the procedure, although the legislation requires.
- although from a procedural perspective are created favourable conditions for consultation and public participation in decision-making, it appears that there are

isolated cases where there is a massive public participation e, even when the assesseddocuments of interest public.

- It is noted, however, that plans and programs to which has brought public input through comments and observations, 75% of cases where plans and programs have undergone changes as a result of the procedure.

4.4 The detailed analysis for SEA proedures

The secondary analysis of the strategic environmental assessment procedure is aimed at studying individual specific cases, with clear examples of how to conduct a strategic environmental assessment procedure. The result of the procedure are evaluated in terms of their effectiveness.

4.4.1 Case study 1. Urban Zonal Plan – Hydrelectric plant Tarnița-Lăpuștești

Unlike other sectors, such as urban planning and transport planning hydropower is probably the least equipped to face the challenges of strategic environmental assessment. As Romania switches to the production of renewable energy to supplement the need for carbon-based fuel, renewable energy from water will become an important and valued more intense

4.4.1.1 Content of Urban Zonal Plan – Hydroelectric plant Tarnița-Lăpuștești

By way of example and analyze how they are subject to the strategic environmental assessment plans that prepare hydropower and analysis of efficiency itself of the procedure of strategic environmental assessment, he was elected as the first case study Urban Area Plan - Hydroelectric power plants with pumping storage Lăpuștești.

By analyzing the proposed plan, it appears that most of the territory in question is occupied with secondary-need functions that do not have practical utility during the operation envisaged project prepared by the plan. This includes the following:

- 29% land allocated heap upper basin, which together with the interim rock heap territory occupies almost a third of the area covered by the plan;
- 15% of the area covered by the plan cover an aggregate quarry, crushing station and areas of site organization;

– This leaves 56% of the total covered by the complex functional structures.

4.4.1.2 SEA procedure developed for Urban Zonal Plan – Hydroelectric plant Tarnița-Lăpuștești

Covered procedural stages:

– the screening stage;
– finalizing the content of the plan and the environmental report;
– analysis for the quality of the environmental report;
– public debate;
– decision to issue the environmental permit, reflected the actual issuing of the regulatory act.

4.4.1.3 Analysis and discussions regarding the SEA procedure

Regarding the performance of procedures for strategic environmental assessment, the following clarifications:

– The urban zonal plan followed all the procedural steps necessary to obtain the environmental permit, creating the necessary conditions for the participation of stakeholders and the public being provided;
– The environmental report for the procedure was complete, containing an objective and rigorous analysisof the environmental impacts associated with the implementation, enabling comparative analysis of proposed scenarios and the alternative 0.
– As noted in the previous section, the concrete result of the procedure conducted to the issue of the environmental permit, certifying the feasibility, in terms of environmental effects, of the proposed plan.

Along with the environmental permit, principle approvals were obtained from the competent authorities in the field of forest management, remaining to be decided at a later stage (EIA) which are the forest areas directly affected. This aspect raises the question over the performance of the SEA questioned, given the decision taken to proceed, without being aware of the forest areas directly affected. One of the drawbacks of SEA is that in the field of hydropower plant, it does not require the analysis of potential impacts and effects produced on the catchment area. In this case, simultaneously with this SEA procedure, APM Cluj was

conducting a distinct procedure for a micro-hydropower plant on Someșul Rece river. One of the elemnets of the environmental report consists of analyzing the relationship between the proposed plan or programme with other plans and programs, so in this case it would have been appropriate to analyze the cumulative impacts of the two proposed plans and assess long-term effects associated with their implementation, considering the fact that both of Somes Cald and Someș Rece are tributaries to Someșul Mic. In the absence of such an approach we question the attribute 'strategic' itself, despite the rigorously elaborated report.

4.4.2 Case study 2. SEA procedure for Zonal Urban Plan Tourism and ski area Nedeia, Zăvoi, Caraș-Severin County

The second case study addressed a zonal urban plan of tourism. The present study will illustrate the contribution of strategic environmental assessment as regards to the identification of conflict situations on the use of natural resources. Tourism planning is an area slightly advantaged compared to hydropower development, in terms of strategic environmental assessment, given that it has some tools of analysis. In this case the study will reveal the result of the strategic environmental assessment in a context where tourism planning objectives interfere with the protection and conservation of flora and fauna elements.

4.4.2.1 Content of Zonal Urban Plan Tourism and ski area Nedeia, Zăvoi, Caraș-Severin County

The main objective of the plan is to ensure the regulatory framework in terms of urban planning in order to achieve the envisioned infrastructrute.

When analyzing the document, the proposed site for landscaping was devoid of signs of human intervention, having the appearance of a natural area. As the state of development of the area, stated the following (after the Environmental Report, SC EPMC Consulting Ltd, 2011):

- the lawn area was exploited for agricultural use, 11 sheepfolds have been identified, with a total built area of approximately 550 square meters;
- the area has several agricultural and forestry roads;
- one forest cottage, located on the opposite side of the site Fattal analyzed with a built area of 130 sqm.

Under the proposals of the plan, most of the occupied area is covered by slopes and grasslands, which represent 62% of the area covered by the plan. A percentage of approximately 24% was allocated for travel infrastructure (cable infrastructure and trails). The permanently built -up area and the area covered by municipal services equal 13.5%.

Once designed, the plan was submitted to the competent authority for environmental protection, in this case the Environmental Protection Agency Caras-Severin to establish the need for the strategic environmental assessment procedure.

4.4.2.2 SEA procedure developed for the Zonal Urban Plan Tourism and ski area Nedeia, Zăvoi, Caraș-Severin County

Covered procedural stages:

- the screening stage;
- finalizing the content of the plan and the environmental report;
- analysis for the quality of the environmental report;
- public debate.

The decision to issue the environmental permit has not been covered, as a result of a negative point of view issued by the custodian of the protected area where the zonal urban plan was proposed to be implemented, the association Altitude - Administration Țarcu Mountains Natura 2000 site.

4.4.2.3 Analysis and discussion regarding the SEA procedure

In terms of effectiveness, the strategic environmental assessment procedure in this case can be viewed from two perspectives:

- as one effective because it created a favorable context to identify a major incompatibilities that in the event of implementation of the proposed plan would lead to impairment of value items conservative high priority at European level;
- or as a procedure less effective, due to the fact that it failed to finding a midway solution, to enable both the implementation of plans and programs for development and the protection and conservation of biodiversity.

The analysis of this case study notes that in the European context, the conservation of a prioritary habitat or species outweighs any economic and social development, except the

interventions necessary for safety and public health; in fact, the European legislation owns the proper legislative mechanisms to ensure this.

Also, the character "strategic" assessment consists precisely in its role and its ability to predict, to prevent the occurrence of significant environmental effects. In this regard, despite obtaining a negative result as in the present case, the effectiveness of the strategic environmental assessment must be assessed due to the benefits they bring to the sustainable use of local resources. Of course, in these circumstances, it is necessary to ensure flexibility and openness to dialog in the decision-making process. A negative opinion will always have to be justified and the role of the environmental protection authority is, in addition to the decision-making, regulatory, the one for mediation and coordination of a fair and balanced process.

4.4.3 Case study 3. SEA procedure for Updating the General Urban Plan, Dej municipality

A particularly important feature of the general urban plans in the context of strategic environmental assessment is that they represent the main local regulartion document. In most cases, as long as a proposed objective on a site covered in terms of urban regulations, fall conditions imposed by the construction that objective will not be subject to procedures for assessing environmental impact. For example, buildings used for housing, commercial, construction and rehabilitation of buildings that host public institutions are often targets that, if within the established urban parameters, may be without the necessity of obtaining environmental approval.

4.4.3.1 Content of General Urban Plan Dej Municipality

The Urban Master Plan of the city was made after more than a decade after the delimitation and previous urban regulation, in order to restore and define new limits of the built-up area, to correlate the existing functional zoning with the road network but also to determine directions of development of the municipality.

The significant increases in allocated areas were those related to public institutions and services, the green areas and transport infrastructure and utilities.

4.4.3.2 SEA procedure developed for the analysed plan

Covered procedural stages:

- the screening stage;
- finalizing the content of the plan and the environmental report;
- analysis for the quality of the environmental report;
- public debate;
- decision to issue the environmental permit, reflected the actual issuing of the regulatory act.

4.4.3.3 Analysis and discussions regarding the SEA procedure

In terms of efficiency and performance analysis of strategic environmental assessment procedure carried out for the Urban Master Plan of Dej, to consider several aspects. First, in terms of legislative rigor, the procedure was conducted in accordance with the provisions of the law. The SEA procedure was a dynamic one, stakeholders issued comments on several occasions. In this regard, two adjustments were made to the initial version of the plan:

- The first adjustment was related to territorial balance proposed in the original statement of the general urban plan being mentioned two possible expansions of the built-up area;
- The second adjustment complemented contents of the general urban plan with provisions on vulnerability analysis to produce various forms of risk, and establishing mechanisms for intervention.

The application of these amendments and additions came from stakeholders participating in study procedures. As noted in the previous section, public participation has been directed to the green areas sensitive issue, respectively the need to preserve the existing green spaces and creating new ones. Although the plan contains no provisions on the elimination of green areas, public participants expressed a vehement opinion about maintaining these spaces where they already exist, perhaps aware of the pressure exerted by the lack of parking spaces, which depreciated in the past, both in terms of quantity and in terms of quality. As a result of implementing the plan, the greenn areas multiply almost by 4, from 42.27 ha to 208.88 ha. A spectacular growth, that translates to 62 sqm / inhabitant (reporting the total population of 33.497 inhabitants Dej, registered in the Population and Housing Census of 2011).

A closer look at the new functions proposed will emphasize the fact that most of the areas falling under the category of green spaces is in fact protection zones to infrastructure and do not have a facility specific to the recreation and leisure. Despite this however, according to Law No. 24 / 2007 on the regulation and management of green spaces in urban area, the technical infrastructure protection lanes fall under the category of green areas. Areas that make up the category of green spaces in the proposed town planning, are listeb below

- green area with unlimited public access;
- green area - sports, leisure;
- green protectionarea;
- restoration and landscape areas for urban regeneration.

It is understandable that the arrangement of new green spaces in central areas is very difficult, given that the percentage of occupancy in the central areas is very high, even maximum. The delimitation of protection areas extended not solve the problem of lack of recreation areas and those of leisure, covering only to formally fulfill the minimum legal requirements. Given the obligation to allocate a minimum of 26 square meters of green space / inhabitant, according to the Emergency Ordinance no. 117/2007, it is a common practice to resort to some "fitting" so that indicator is covered and do not always reflect the real growth areas of green space to which the public have access.

4.4.4 Case study 4. SEA procedure for Zonal Urban Plan Tourist base - Muntele Băişorii, Valea Ierii

The Zonal Urban Plan Tourist base - Muntele Băişorii, Valea Ierii is a planning document developed in the commune Valea Ierii in Cluj County, in order to put under urban planning regulations, a site on which there are intentions to create a tourist base for activities related to the winter sports practice.

The site targeted by the document is located on the territory of the commune Valea Ierii, in Cluj County and overlaps relief unit Muntele Mare, covering an area of 53.5 ha area Buscat Peak.

4.4.4.1 Content of Zonal Urban Plan Tourist base - Muntele Băişorii, Valea Ierii

The main objective of the plan is to put under urban regulation in order to set subsequent tourist infrastructure in the area of land located near the ski slopes Buscat.

4.4.4.2 SEA procedure for the analysed plan

The strategic environmental assessment procedure of the analysed plan started on 09.07.2012, when submitting the first version of the plan to the Environmental Protection Agency Cluj in order to start the screening stage. Unlike other plans previously addressed, this plan shows a distinct situation. Once submitted to the authorities, the plan was analyzed by the authorities met under the Special Committee to ascertain the circumstances known at the time of submitting documentation.

4.4.4.3 Analysis and discussions for the studied procedure

As a result of this meeting the Commitee concluded the a section of area covered by the plan was situated within the limit of a community interest site, therefore any intervention within the site would have meant obtaining the permission of the site's administration. Finding this issue does not preclude the implementation of the plan itself, but the existence of elements with conservation value on the site concerned could endanger the feasibility of the plan, if the environmental assessment would have identified a significant impact on protected elements.

4.5 Results and conclusions

Analiza primară și analiza individuală a studiilor de caz au permis evidențierea avantajelor și beneficiilor evaluării strategice de mediu, dar și a unor limitări ale acesteia, rezultatele obținute fiind detaliat explicate în capitolul detinat concluziilor.

Section 5. Conclusions

The present scientific approach was conducted in order to achieve the established objectives. The first chapter was dedicated to creating the theoretical framework of the

strategic environmental assessment, completing practical valences of the SEA procedure to justify the need, explaining its purpose and significance. As a result, it was found that strategic environmental assessment is a formal and systematic evaluation at the highest decision-making level of the potential environmental impacts of plans and programs, facilitating the inclusion of the relevant environmental issues when making decisions, to promote sustainable development and to maintain a desired level of environmental quality. The second chapter highlights the main contributions available both internationally and nationally in the affirmation and promotion of SEA and captures aspects of art that can be developed and which contribute to improving this paper. As a result of analysis of the existing contributions, it was considered necessary and appropriate a study for the performance of strategic environmental assessment in the context of territorial planning in Romania. In order to grasp an overview on how to integrate the concept of strategic environmental assessment in the context of territorial planning, the author resorted to an analysis in two stages of several case studies. The case studies addressed, though not very numerous, were selected to meet predetermined criteria and substantiated representation.

It was noted, in general, the existence of a participatory framework, open to dialogue, in the strategic environmental assessment. Of course, providing the conditions for participation does not always reflect a high degree of involvement. The first part of the analysis, showed an average of 75% involvement of interested potential factors, while the secondary analysis emphasized the public's contributions to the finalization of the plan.

Regarding public participation, in general a low level of involvement in decision making was found. Although from a procedural perspective favourable conditions are made for consultation and public participation in decision-making, it appears that there are isolated cases where there is a massive public participation, even when assessing documents of public interes. The causes of this issue can be varied: from lack of awareness regarding environmental issues, the difficulty of assessing general measures of plans and programs to the detriment of the specific projects. It is noted, however, that in situations where there is involvement from the public, it is likely that the observations and comments submitted by the public to lead to the formulation of measures to reduce or prevent the impact or contribute to the finalization of the studied document, thus increasing of theeffectiveness strategic environmental assessment procedure. Educational activities performed by the ministry would probably increase the importance of involving the public in decision-making may be a measure to increase public participation and thus increasing the effectiveness of the procedure. However, the competent authorities in environmental protection can help increase

public participation by uploading documents subject to SEA procedures online and increase access to the decision-making process.

In terms of flexibility in making decisions, the analysis of case studies found that offering concrete alternatives to the planning is not always the defining element of the procedure, although the legislation demand for it. In 50% of cases studied were analyzed clear alternative arrangement, separate argument. Although several entities involved in strategic environmental assessment procedure offer the possibility of creating a flexible framework, it is necessary to promote flexible approach especially by plan holders, especially since the law provides the tools needed in this context. The analysis of alternatives solutions, , could help to educate the beneficiaries to think flexibly, to address a particular objective from multiple perspectives, offering in this way, openness to dialogue in the decision making process.

To identify the potential conflicts in the use of resources from the stage of planning or scheduling is a major benefit of the strategic environmental assessment, once again highlighted the preventive nature of the procedure. The contribution of strategic environmental assessment in identifying situations of conflict and competition in the use of resources is a feature captured in various situations during this study. Strategic environmental assessment is not confined to identify conflict situations create framework for the "negotiations" and choosing the right solution for planning. The uniqueness of the strategic environmental assessment in terms of creating the framework for an analysis of environmental impacts to the stage of programming resource is a fundamental argument of his promotion. Given that this is the only mechanism for assessment of strategic environmental impact should be stored procedure for applying the concept in its current form and evaluation after a period of time, its efficiency on a wider scale in context national. The procedural aspect, consistency could be a factor increasing the efficiency of the procedure.

With regards to the adoption of measures to prevent, reduce or offset the anticipated impact forms, it is obvious that these measures are necessary regardless of the situation studied. The effectiveness of the proposed measures should be reflected in the results of the monitoring of the implementation of plans and programs, however, at least until now it has not been established a mechanism leading to the assembly and integrated analysis of the results of monitoring programs. The values of the indicators related to the implementation of plans and programs are registered with the competent authorities for environmental protection, but it is uncertain how the data is processed and interpreted. Development and use of an electronic data collection and modeling on the monitoring of plans and programs could be a tool to assess long-term effects SEA.

Despite identifying certain elements in common in the application of the concept, the efficiency and performance of the strategic environmental assessment are largely determined by the context of each individual ongoing proceedings. While the effectiveness and performance assessment can be influenced by various factors and varies from one context to another and even from one case study to another, currently, at national level, the strategic environmental assessment is the only tool of analysis and impact assessment for programmed interventions on the territory. In terms of procedure, until a future assessment is made, at national scale, rearding the efficiency of the strategic environmental assessment, it is recommended a consistent approach, especially as concernsabout the environmental protection in general and evaluation of preventive environmental impact, in particular, are relatively recent.

As stated in the introduction to the paper, the purpose of the research was to bring national theoretical support of strategic environmental assessment, to define the conceptual aspects and methodology underlying the SEA, and to evaluate actual performance of the procedure, to support the competent authorities in environmental protection, certified persons for the development of environmental studies, holders of plans and programs in the understanding and effective implementation of strategic environmental assessment procedure. Obviously, the performance off the strategic environmental assessment is influenced by other factors, outside the proceedings. In the future, in order to assess the degree of complexity and greater detailof the performance of SEA procedure, it would be appropriate to study the influence of external factors on the procedure.

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