



Contents lists available at ScienceDirect

Environmental Impact Assessment Review

journal homepage: www.elsevier.com/locate/eiar

Strategic Environmental Assessment, key issues of its effectiveness. The results of the Speedy Project



Donato Di Ludovico^{a,*}, Valter Fabietti^b

^a Department of Civil, Construction-Architectural and Environmental Engineering, University of L'Aquila, L'Aquila, Italy

^b Department of Architecture, University 'G. D'Annunzio' Chieti-Pescara, Pescara, Italy

ARTICLE INFO

Keywords:

Strategic Environmental Assessment
Cross-border cooperation
Urban planning
Strategic planning
European Directive
Digital platform

ABSTRACT

This paper describes the results of the European Speedy Project, concerning the application of cross-border SEA, a research that had two main objectives. The first has been the definition of cooperation modalities between various public body as well as private entity through the realization of a digital platform. The aims of this innovative platform include sharing of multidisciplinary knowledge, the training, the participation, etc. The second objective has been to draft a proposal for revision of Directive 2001/42/EC based on the criticalities of implementation in individual Member States emerged during the development of the project. This revision has taken, in the final research report, the form of *problem areas* and suggestions for amending the Directive. A particularly important result, in addition to those related to platform implementation and the SEA Directive revision, is the e-learning section of the same platform. The continuous training provision of the e-learning system, as well as providing a valuable support for professional upgrading, can provide a useful link between the experiences developed by territorial authorities or individual professionals and the construction of a disciplinary and technical corpus that meet new challenges arising from the changes in society and the evolution of the environmental system.

1. Introduction

This paper describes the result of *Speedy*, an European Project that derives from the evaluation activities on the application and effectiveness of the Strategic Environmental Assessment - SEA Directive carried out by the European Commission in 2009 and culminated in the final document of DG ENV entitled 'Study concerning the report on the application and effectiveness of the SEA Directive (2001/42/EC)' (EC-ENV, 2009). In this document, the European Commission invited Member States to reflect on the need to amend and modify the Directive 2001/42/EC, and recommended and suggested to use innovative instruments for such studies, e.g. forums and platforms, in order to strengthen the sharing and the transfer of knowledge (Sheate and Partidário, 2010) and cooperation between the Member States. The International Workshop 'Environmental Assessments: EIA, SEA and AA, reflections on the integration of environmental assessment procedures', organized by the Environmental Authority of the Abruzzo Region (It) in May 2011, from which the idea of the Speedy Project was born, has been an important moment of reflection and comparison on the subject of environmental assessment application. The speaker's interventions have proposed a methodological survey pathway for evaluation of the

SEA Directive in terms of integration and effectiveness.

The overall objective of the Speedy Project is to promote transnational cooperation between public administrations in order to facilitate an efficient environmental assessment process in the Adriatic area. The synergy between the neighboring countries is linked to the consideration that common environmental problems can be solved by coordinated interventions and sharing of knowledge. This general objective follows the specific ones that include useful suggestions for updating Directive 2001/42/EC, to create a digital support tool for partners to properly implement the SEA, to create a permanent environmental assessment network, to improve the evaluation procedures and the methods of practical application.

The project, launched at the end of 2012, is structured in 7 phases through which the application models, practices, laws, regulations and experiences of the countries involved are compared and a digital platform is used to achieve the overall and specific Project objectives.

The experimentation has highlighted the problem areas around the application of SEA, some already present in the literature on the theme (Jones and Scotford, 2017; EC, 2016; João and McLauchlan, 2014; Lobos and Partidário, 2014; OECD, 2012; Fundingsland Tetlow and Hanusch, 2012; Bonvoisin, 2011; Therivel, 2010; Weiland, 2010; Retief

* Corresponding author at: Via Giovanni Gronchi 18, 67100 L'Aquila, Italy.

E-mail addresses: donato.diludovico@univaq.it (D. Di Ludovico), valter.fabietti@unich.it (V. Fabietti).

et al., 2008; Bina, 2007; Persson and Nilsson, 2007, Chaker et al., 2006; Stoeglehner and Wegerer, 2006; Busca et al., 2005; Fabietti, 2005; Fischer, 2003, 2002; Partidario and Clark, 2000; Partidario, 1996, Partidario and Therivel, 1996), other new or specifics of the countries involved in the Project. The latter concern the principles underlying the Directive, but also the scope of action both in terms of approach (how the Directive acts, the methodologies (Brown and Thérivel, 2000)) and in terms of repercussion on other areas of the Assessment (the effects of the Directive on adjacent areas such as the EIA (Abaza et al., 2004; Brown and Thérivel, 2000; Lee and Walsh, 1992), AA, participation (Drazkiewicz et al., 2015; OECD, 2012; Coenen et al., 1998), training (OECD, 2012) or knowledge systems (Di Ludovico, 2017; Weinberger, 2011; Di Ludovico, 2011; Di Ludovico and Properzi, 2005).

The design process was concluded at the beginning of 2016 with the drafting of the *Operational Guidelines on the findings and suggestions for the review of Directive 42/2001/EC* (RegAbr, 2016), which inspired this article. The guidelines summarize the problem areas and deepen the SEA in the transnational and national contexts of the partners emerged in the different phases, addressing also the theme of most frequently addressed topics in the national case law and of the case law from the European Court of Justice. On this basis, the guidelines provide some starting points, structured according to criteria and problem areas, which may be useful to the EC not only for the revision of the SEA Directive, but also to broaden its vision on the related issues and understand its implications and necessary integrations.

In addition to describing the path of scientific research and experimentation of the Speedy Project, this paper also provides some insights on possible evolutions of the tools developed under the Project and new approaches to the Strategic Environmental Assessment process useful both at the transnational and national level, which can not be found, for example, in the EC evaluation documents on the topic, including the latest ones (EC, 2016).

2. The Speedy Project and its phases

The ‘Shared Project for Environmental Evaluation with DYnamic governance’ - Speedy, is an European project financed under the ‘Adriatic IPA Cross-border Cooperation Program 2007-2013’ and focuses on the implementation of the SEA - Strategic Environmental Assessment Directive 42/2001/EC in the Adriatic-Ionian area, in a cross-border context similar to that of the EUSAIR - Adriatic-Ionian Macroregion (EC, 2014).

The Project, and hence the structure of the scientific research that accompanies it, has been organized in 7 phases or Work Packages (WP), as can be seen in Fig. 1. WP1 and WP2 regard common activities and project management (e.g. communication) that affected the whole

project. The other WPs regard the technical and scientific activities based on international cooperation and with scientific bodies. They have had the ultimate goal of verifying, in a transnational context, the effectiveness of the SEA and the Directive through assessment tools condensed in the use of a digital platform dedicated and oriented towards the accompaniment of the new Member States to a more proper application of the SEA.

To achieve its objectives, the project first analyzed and compared the institutional models of the different countries and their SEA practices (WP3). The result of this ‘Comparative Dynamic Analysis’ (Dynamic in the sense that the analysis was subjected to several feedback steps) allowed one side to understand the different dynamics underlying SEA in the countries involved and, on the other side, to put the bases for building the ‘Shared Knowledge Platform’ - SKP, a shared platform for Strategic Environmental Assessment (<http://www.speedyproject.eu/>). This digital platform oriented to the theme of the SEA, which will be deepened in the next Sections and which is one of the main goals of the Speedy Project, has been realized through a multidisciplinary scientific contribution to the definition of its model (WP4). In WP5 it has been set up and implemented, and in WP6 it has been implemented and tested (Fig. 1). The methodology developed has exploited the potential of ICT and the dynamism of the digital network.

The last phase, WP7, pursues the goal of translating the evaluations emerging from the SKP experimentation and from the tools it has made available to the countries involved, in operational suggestions for a more effective application of the SEA and the Directive 42/2001/EC condensed into ‘Operational Guidelines’ through which have been reported the problem areas that emerged in the project and have been provided contribution to the European Environmental Assessment of Plans and Programmes.

The Speedy project has been implemented in four years of activity, and has produced a large number of national and international meetings that have allowed the countries involved in SEA issues to be compared. Training and information events were carried out as dissemination activities, in which also participated professionals and operators from various European regions, exploiting mainly the potential of SKP.

3. Comparative Dynamic Analysis: institutional systems and planning models of the countries involved

‘Comparative Dynamic Analysis’ (WP3) consisted of a cognitive/fact-finding phase where information was gathered on project partners with the aim of identifying the state of the art on the SEA in legislation and making a first screening of critical issues on its application. This cognitive/fact-finding phase was conducted through a questionnaire,

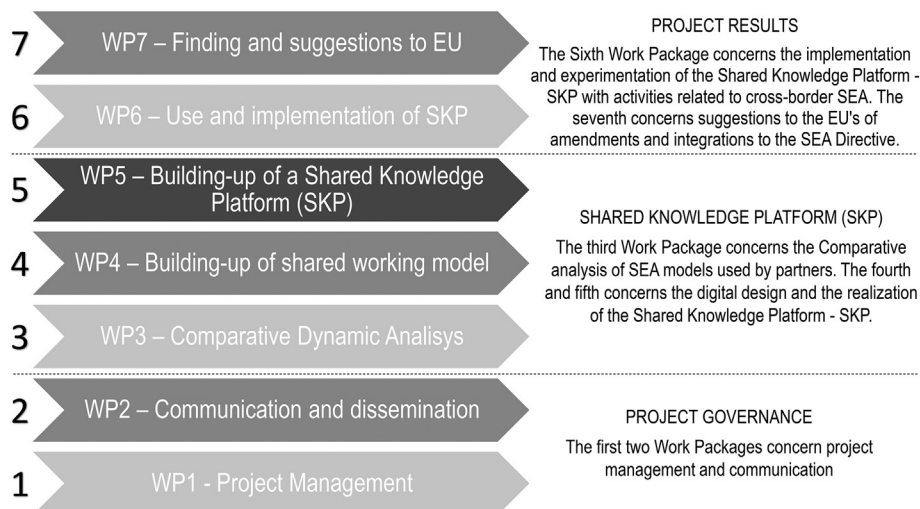


Fig. 1. The phases of the Speedy Project.

updated several times during the project, which contains 11 thematic sections, that is: (1) Administrative and legislative structure of the Country, (2) Local and national SEA's normative, (3) Administrative procedures, (4) Screening (art.3 Directive 42/2001/EC), (5) Scoping (art.5 par.4 Directive 42/2001/EC), (6) Environmental report (art.5 Directive 42/2001/EC), (7) Consultation (art.6 Directive 42/2001/EC), (8) Monitoring (art.10 Directive 42/2001/EC), (9) Specificity and critical points, (10) Web sites, (11) Best and bad practice.

This information, relating to the institutional and administrative model of the countries involved the application of the SEA and its critical points, best and bad practices, have been collected for all partners, updated during the project and compared by highlighting the differences, common elements and issues.

3.1. 'Comparative Dynamic Analysis' main results

The result of the comparative analysis of the questionnaires has highlighted many characters. At an administrative level, for example, only Italy and Greece have a decentralized government system with the presence of a regional level (large administrative units, which have legislative power), which can in many ways modify planning and programming process and then SEA process.

With regard to urban planning and territorial planning procedures, it has emerged that for all partners the *adoption* of the plan is made through legislative procedures. Moreover, in Italy and Croatia plans are approved by two-stage procedures: there is a first *adoption*, and after a consultation phase the plan is amended, corrected and definitively *approved* (final adoption), complicating the application of the SEA. The part of the questionnaire relating the planning also highlighted a difference in the application of assessment procedures in relation to the *form* (strategic/structural/spatial (Nelson, 2011)) of the plans to which the assessment should be applied (such the difference is also true for the geographical scale of the plans (Fogleman, 2017)). Indeed, in the partner countries to which the questionnaire was provided, there are substantially two different dominants models of planning, only partially coinciding with the two groups identified in relation of the administrative practices (decentralized and centralized). The first model, which we can define of an Anglo-Saxon matrix, has strongly strategic/structural features, while the second, most practiced in Italy, has a strong *landed* footprint, in other words certainly linked to a general design but in the facts governed by the economical valorization of individual soils subject to planning.

In fact, from the Comparative Dynamic Analysis emerges that in Italy there is a very intricate situation, because each Region has its own urban planning law (20 laws). There are Regions that have adopted the Anglo-Saxon model with two levels of planning: a (1) strategic/structural and an (2) operational/spatial. SEA is applied at all levels and thus results a duplication of assessment, also in relation to the construction of cognitive references (duplication of territorial and urban analyzes). Instead, there are Regions that have an operational/spatial planning model only and in this case SEA is applied directly to the conforming choices of the property (see next "conformative model"). Soil valorization in the latter model occurs at the time of realization of the intervention and is heavily dependent on the function assigner to the soils and the advantages that occur (under market conditions) at the time of the beginning of the process of transformation. Such transformations therefore have a strong component of momentary advantage, which is hardly attributable to a strategic approach and on which apply the SEA is very complex. Fig. 2 shows the planning models in Europe, an update produced in the context of the Speedy project scientific research, of reading proposed by Munoz Gielen & Tasan-Kok (Munoz Gielen and Tasan-Kok, 2010) and reinterpreted by Janin Rivolin (2016). As can be seen, for example we included Italy among those models defined as 'prior binding zoning' (conformative model), where the zoning design and attribution of its functions become a constraint put directly in the plan. In this group, unlike the other two (performative and neo-

performative model), the strategies are very weak, have no degree of mandatory, and are often poured into the Plan only partially due to the interests associated with the proprietary regimes. You will see in the next sections that one of the Project results shows that the strategic level is the best one to apply SEA (Fig. 2).

All countries involved in the Speedy Project have a SEA law. However, while in Italy Directive 42/2001/EC has been transposed into a national law (Legislative Decree 03/04/2006, No. 152 'Environmental Code') and in a series of regional regulations or laws, for other countries the Directive has only been transposed into a national law. This approach, in Italy has determined that the authority who makes the SEA is the same that having the responsibility/duty to adopt the Plan/Programme. Consequently, the duty to undertake SEA for a Plan/Programme is distributed through a wide variety of authorities (all those responsible for the Plan/Programme), creating confusion.

The Comparative Analysis highlights a lack of technical training (OECD, 2012) and public administration on the SEA theme leading to inadequate and incorrect application of its procedures and the need for guidance documents. The procedures are integrated in the planning process, except in Italy and Croatia, where these are be parallel, and consist of 5 steps: Screening, Scoping, Environmental Report, Decision and monitoring, with minor variations between countries. Within these steps, is very critical the themes of the knowledge, data and information necessary for their implementation, in particular for cross-border SEA and partner countries in the East Adriatic Coast where are used data from specific research or studies (partly in Italy). Instead, in terms of indicators for assessment, only Serbia and the Molise Region (IT) have established a basic set by laws and regulations. Other partners do not address this issue.

Regarding the public involved in the SEA consultation, all partners claim that they have adopted a case-by-case approach, making this phase *orientable*. Similar behavior occurs for the monitoring phase, for which there are many differences between countries in terms of effectiveness. At least four of the consulted partners have formalized a set of indicators through guidelines/legislation. For other countries, monitoring indicators are not prescribed in advance but are decided on a case-by-case basis and monitoring is a neglected stage because it is not really organized (Italy).

In all partner countries of the Project, both at national and local level, there is still a significant non-involvement to the SEA obligations, or there is still not enough communication between the figures involved in the assessment process, technical and competent authorities, creating a barrier in obtaining the necessary data (Vicente and Partidário, 2006).

Section 5 deals with these issues and highlights critical issues, and in particular the problem areas.

4. The Shared Knowledge Platform

The platform model was identified under WP4 'Building up of shared working model', with the aim of creating a digital sharing tool dedicated to SEA (EU-ERDF, 2012; Hanzl, 2007). In particular, a questionnaire was submitted to the partners in a first sub-phase to clarify the platform's objectives. In a second sub-phase, a scientific research and evaluation on existing digital platforms was set up, summarized in a report through which the basic technical specifications of our Shared Knowledge Platform (SKP) have been identified. These technical specifications were shared with the partners, the last stage that allowed to manage the project of the platform prototype needed to implement the WP5 'Building up of Shared Knowledge Platform'.

4.1. Structure and implementation of the SKP

The SKP intends to share and transfer (communicate) the knowledge, strategies and criticalities identified in the transnational SEA procedures (Bonvoisin, 2011) and to provide the information to the various partners by disseminating their experience, in order to find

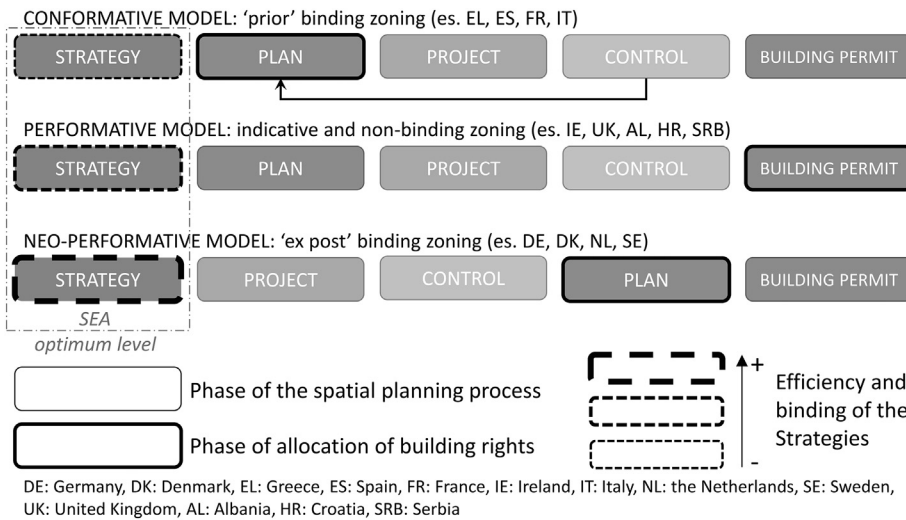


Fig. 2. Planning model in Europe (elaboration on Munoz Gielen & Tasan-Kok scheme as well as reinterpreted by Janin Rivolin).

shared solutions but also to represent an instrument of facilitation of assessment accessible at European level (Sheate and Partidário, 2010).

One of the key elements of the platform (Fig. 3) is the construction of a community with the aim of encouraging the training, the exchange of experiences and criticalities and possible paths to overcome them. The sections provided in the SKP are:

- 'Platform Resources' dedicated to collecting and describing useful documents for the SEA, structured into the 'Laws and Regulations', 'Guidelines', 'Assessment Tools', 'Good Practices', 'Useful Links'.
- 'Document Archive', which allows for complete file archiving and analytical search of files.
- 'Forum', a tool for on-line discussions on SEA.
- 'E-learning', on-line training courses on SEA theory, practices and methodologies.
- 'Videoconference', Open source tool dedicated to information sharing in videoconferencing.

All sections of the SKP have been implemented by materials and discussions provided by Project partners. In particular, the Forum section has been fundamental, allowing partners to exchange views in real time on the various issues considered crucial to achieving the goals set

by European regulations regarding the SEA and its integration with other assessment procedures. It has allowed also to implement discussion on the contents of the resources of the other sections of the platform, in order to supply useful suggestions, to improve specific topics, to advice documents to load in the platform, to discuss about practice and methodologies to face the SEA.

Another section that represented a key point of the platform is training, conducted through the e-learning module. This module has been developed in three key moments: the design of the didactic model, the realization of the Multimedia Learning Object and the distribution of didactic content through the implementation of the appropriate e-learning platform. The initial phase of the work focused on studying an e-learning didactic model (Jha-Thakur et al., 2009; IAI, 2005) able to adapt to specific needs such as presentation of case studies, synchronous events, a tool for the creation of a specific international practice community on SEA issues and the environmental policies of the various countries involved. The proposed didactic model is characterized by flexibility which allows for any changes in the course of work, derived from specific requests and need that has been agreed time to time with the various teachers and partners of the Project.

The implementation of the SKP is the activity of WP6 'Use and implementation of Shared Knowledge Platform', which aimed at

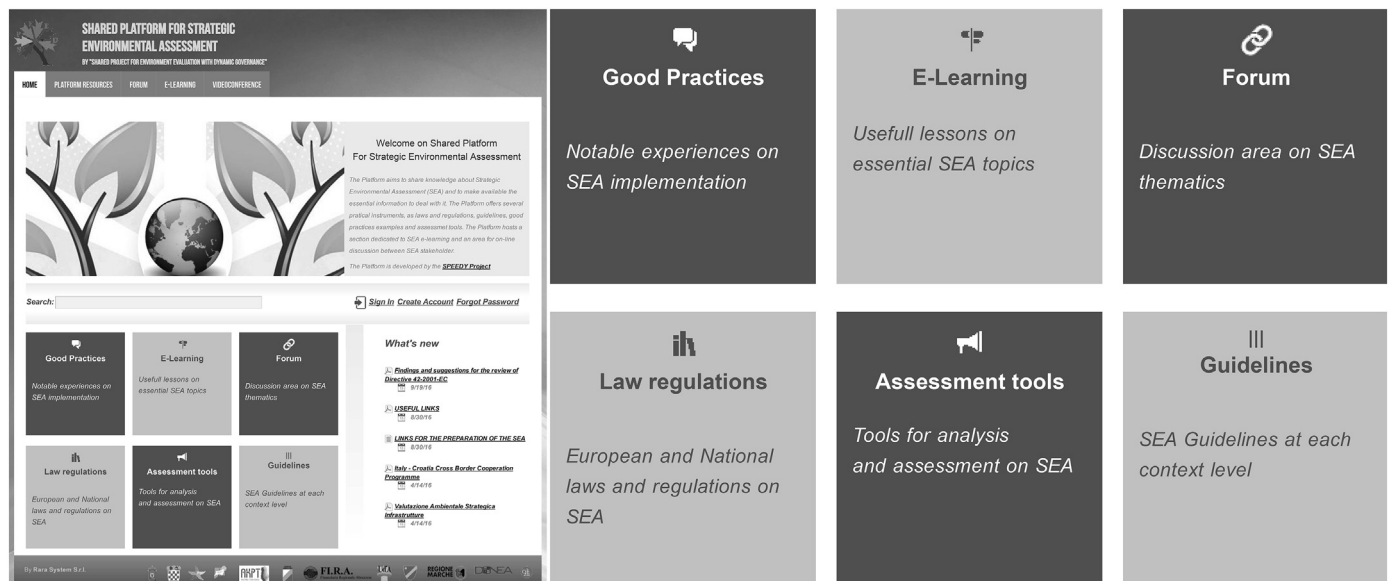


Fig. 3. Shared Knowledge Platform home page (<http://www.speedyproject.eu/>).

activating and implementing the various work sharing tools provided in WP5. In particular, WP6 activity involved the activation and compilation of platform sections, forum reports, e-learning activities on key SEA topics (IAIA, 2005) and platform testing on a cross-border consultation under a SEA procedure on a transnational programme.

5. The experimentation phase

The Speedy Project has essentially organized the research on the effectiveness of SEA in a cross-border context on two levels. The first is the collection of data and information, based on the ‘Comparative Dynamic Analysis’, on the implementation of the SKP with the activation of the thematic forums, e-learning and collection of laws, regulations and good practices of the various partners (OECD-DAC, 2006), on the analysis of the most frequently addressed topics in the national and European case-law. This first group of activities has identified a number of key points (notes, need for in-depth and critical aspects of the application of the Directive) organized according to the following 7 Criteria: a) Screening criteria, b) Quali-quantitative assessment methodologies, c) Environmental Report, d) Participation, e) Environmental Monitoring – Follow up, f) Planning system & application of the SEA Directive, g) Development/review of procedures and continuing education. The Key points, organized in this way, have been the starting point for the structuring of suggestions for amendments to Directive SEA 42/2001/EC, in turn structured according to the following general topics that can be considered the *problem areas* and that also concern the review of the SEA principles:

- Internal inconsistencies to the SEA Directive articles (for example, concepts that should be better defined or too hermetic, e.g. ‘use of small areas at a local level’ and ‘minor modification to a plans and programmes’ – art. 3 c. 3 Directive 2001/42/EC (Fogleman, 2017)).
- Effects of the SEA Directive on direct and interacting components (real impact of the Directive on the quality of the environment, on the quality of the plans/programmes and alternatives (Fogleman, 2017; Elvin, 2017), the effectiveness of the participation (Drazkiewicz et al., 2015; OECD, 2012; Coenen et al., 1998), the effectiveness of monitoring, on interacting Directives – EIA (Abaza et al., 2004; Lee and Walsh, 1992), Habitat - AA, etc.).
- External effects of the SEA Directive (the theme concerns the critical issues that emerge from the application of the Directive but whose solution consists in a modification or other proposed Directive or Regulation. e.g. professional training and experts, preparation of guidelines, participation (Partidario, 2012; Layzer, 2002)).
- Methods and evaluation techniques (knowledge systems, evaluation techniques, indicators and their effective efficacy and scalability, participatory techniques).
- Integration of the assessment process with planning and programming (Fabietti, 2008; Fabietti and Carbonara, 2005; Kørnøv and Thissen, 2000).

5.1. Main questions on the application of the SEA Directive

The activities of the Speedy Project, we have already seen, have allowed us to identify many Key Points organized in 7 Criteria (see Section 5). It is essentially about notations, synthetic descriptions of critical levels, or the need for in-depth study of certain themes.

Some of these Key Points have already emerged as part of WP3 (Comparative Dynamic Analysis), others emerged from SKP experimentation and in particular in the thematic forums. Fig. 4 represents a summary of principal Key Points structured on the basis of problem areas identified, taking into account the differences between the institutional and administrative models of the countries involved as well as the differences between the different programming/planning models adopted. It is emphasized that the table is very concise and that for a closer look, you can consult the relevant SKP documentation of the

Project.

In terms of the SEA principles, it's very important the issue concerns the meaning of *Strategic* put in relation with the type of planning/programming on which to apply the SEA (OECD, 2012). In particular, the main key point regards the value of the word *Strategic* in the acronym SEA refers to a ‘strategic level’ and ‘strategic choices’ of planning/programming (for other opinion: Partidario, 2015; Bidstrup and Hansen, 2014; Noble, 2000). In some countries, such as Italy, which does not have the level of strategic planning in its national and regional systems (some Regions have the strategic/structural level), SEA is also applied to operational level plans, even though very small (e.g. for the modification of a single zoning). This determines that the SEA is also applied to Plans/Programmes that do not have a strategic nature but have an operational nature (Partidario, 2015), applying the assessment several times to the same subject in accordance with a general strategy. Regarding the programmes this problem does not exist, in fact they have almost always strategic content.

In a two-level planning system (strategic/structural, spatial/operational), SEA's application becomes successful when two contemporary conditions occur: 1) the spatial/operational Plan complies with the strategic/structural Plan and 2) SEA is applied only to the strategic/structural level. It is necessary, in fact, that planning thinks in terms of level compliance. From the project emerges that the application of the SEA at the two levels, if implemented in terms of compliance and consistency of the strategies, becomes a success factor of the Directive as it introduces in the planning the exercises of consistency between general objectives and specific actions. This means that, if screening phase of spatial/operational Plan demonstrates compliance/consistency with strategies, the SEA of the spatial/operational Plan is not required. However, this is only an ideal procedure that is not applied, SEAs are simply repeated.

The ‘DECISION II/9 - STRATEGIC ENVIRONMENTAL ASSESSMENT’ taken at the ‘Meeting of the Parties to the Convention on Environmental Impact Assessment in a Transboundary Context, Second meeting, (Sofia, 26-27 February 2001)’ refers ‘R paragraph 10 of the Oslo Ministerial Declaration in which the Ministers recognized that a systematic analysis of the environmental impact of proposed policies, plans and programmes was enabled by the application of EIA principles and recommended that the principles of EIA in a transboundary context should also be applied to the strategic level, and to this end invited Parties and non-Parties to introduce those principles into their national systems’ (UNECE, 2001).

5.2. Suggestions for improving the effectiveness of the SEA

The previous paragraphs have highlighted key points about the application of the SEA Directive. The activities of Speedy, mainly based on sharing information and using SKP in a cross-border context, have proposed systematization of these key points and, in the final part, the delimitation of some problem areas. In particular, some aspects have emerged which need to be addressed (the Project sets out its priorities), for which some general proposals that directly concern the Directive but also indirect issues are outlined. These proposals can be summarized in the following list:

- The realization of a glossary with the main terminology introduced following its application (what means *Strategic*, *Screening*, *Scoping*, etc.), updating and deepening existing ones (Partidario, 2012; TSG, 2013).
- Clarify the relationship between the various assessment tools (SEA, EIA and AA) and related Directives (Abaza et al., 2004; Brown and Théritel, 2000; Lee and Walsh, 1992), with the aim of simplification. In particular, the Directive should address the issue of duplications (of strategies, assessments and knowledge) in terms of integration, requiring integrated processes of assessment and design/planning/programming. This means fully integrating the design

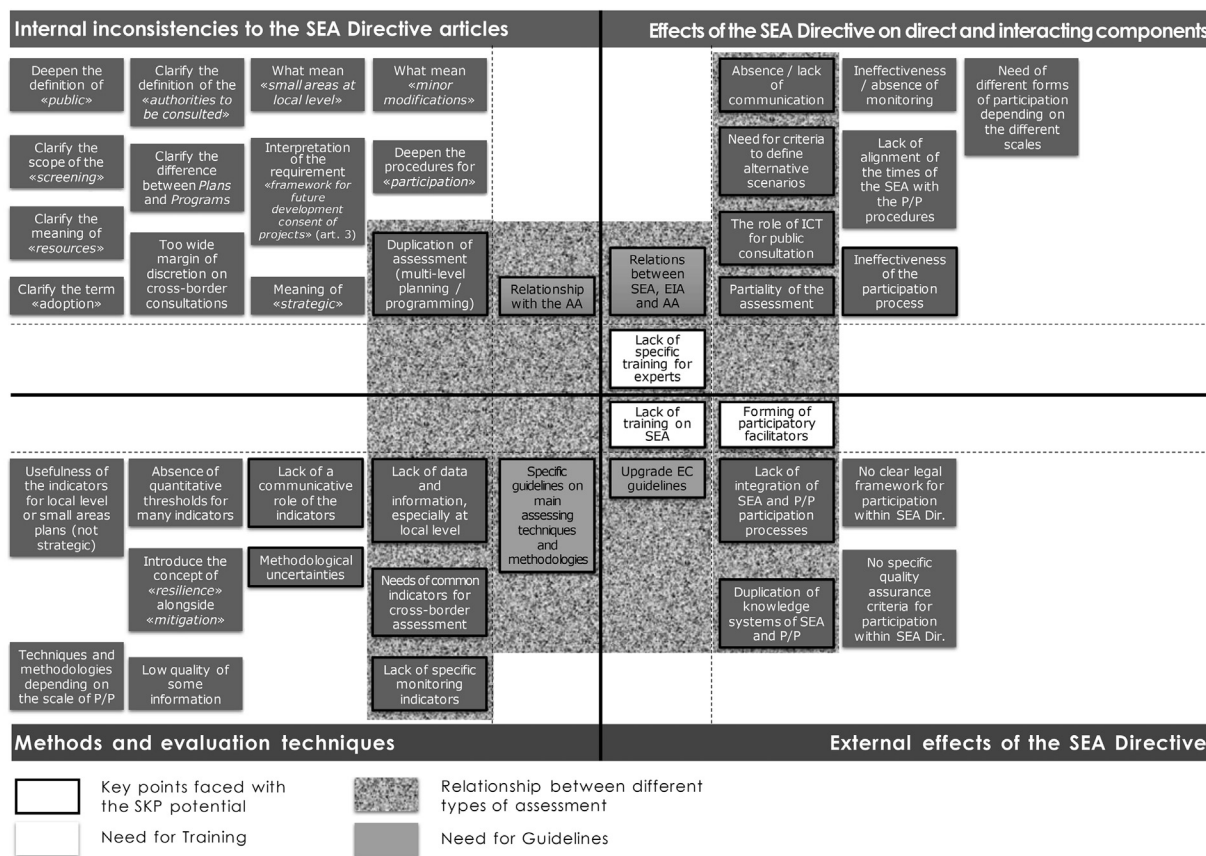


Fig. 4. Key points and problem areas emerged from the experimentation of the Speedy Project.

with the plan and, for example, simplifying the EIA in an area already under SEA, as functions and quantities are already established in the spatial/operational/regulatory plan.

- Deepen and specify the scope of the Directive in terms of town and country planning. If the reference model of the SEA is strategic planning, it makes no sense to apply the assessment to the *regulative* and *operative* planning. We believe that the optimal level of planning in which to apply the SEA is the strategic/structural one (for different scientific position see: Fogleman, 2017; Partidario, 2015; Bidstrup and Hansen, 2014; OECD, 2012; Noble, 2000). Spatial/operational planning developed in accordance with strategic/structural planning, and in keeping with its directives, should be raised by the application of the SEA (in fact, the application of the screening phase to a spatial/operational Plan (typically at the municipal level), if it proves that it is compiled in line with the indications of strategic/structural planning should already lead to a non-applicability assessment of the SEA).
- The application of the SEA is essentially translated into the definition and determination of indicators (Donnelly et al., 2007; Kurtz et al., 2001; Dale and Beyeler, 2001; Therivel, 2010; Therivel, 1996a), often not coherent each other, which are not based on reliable and verifiable data, often not quantifiable, and in particular that were not related to the threshold recognized by the scientific community. On this issue, which concerns the application of the SEA, it is therefore necessary to deepen, through guidelines or manuals, which will also take care of the main techniques and evaluation practices.
- Address the issue of information and knowledge resources (Di Ludovico, 2017; Weinberger, 2011; Di Ludovico, 2011; Val, 2011) and those who produce it (information holders), with particular reference to the procedures, validation and certification of data (e.g. the Inspire Directive). This is particularly important in a cross-

border context, but also in order not to duplicate knowledge systems.

- Clarify and deepen the theme of Plan or Programme reasonable alternative (Elvin, 2017; Therivel, 1996b). In countries where planning is a *regulative* and *operative*, the alternative take on a decidedly secondary role, unlike what happens with the *strategic* model.
- Evaluate the opportunity to define the professional profiles, assessment experts, with a specific education (Partidario and Wilson, 2011; Jha-Thakur et al., 2009; IAIA, 2005).
- Alongside these aspects, it is also necessary to evaluate the role that may have digital platforms such as the ‘Shared Platform for Strategic Environmental Assessment’ in the Assessment (not only SEA but also EIA and AA). They could address several critical issues of the application of Directive 2001/42/EC mentioned. In particular, the use of a Platform such as SKP, through tools developed to facilitate the Assessment processes, Participation and Planning/Programming, would allow:
- A direct and constant comparison between the different public entities holders of Assessment process (not only SEA but also EIA and AA), with the aim of simplifying and integrating different processes.
- Avoid duplication of assessment processes for Member States that have multi-level planning systems (strategic/structural – spatial/operational). Avoid duplication of planning and assessment knowledge, as the SKP is a data and information repository and therefore a sharing tool.
- An exchange of experiences to update (continuously) national and regional laws on environmental assessment, overcoming critical issues encountered.
- A dynamic and continuous professional training through e-learning lessons (also dynamically updatable).
- Sharing of documents and procedures.

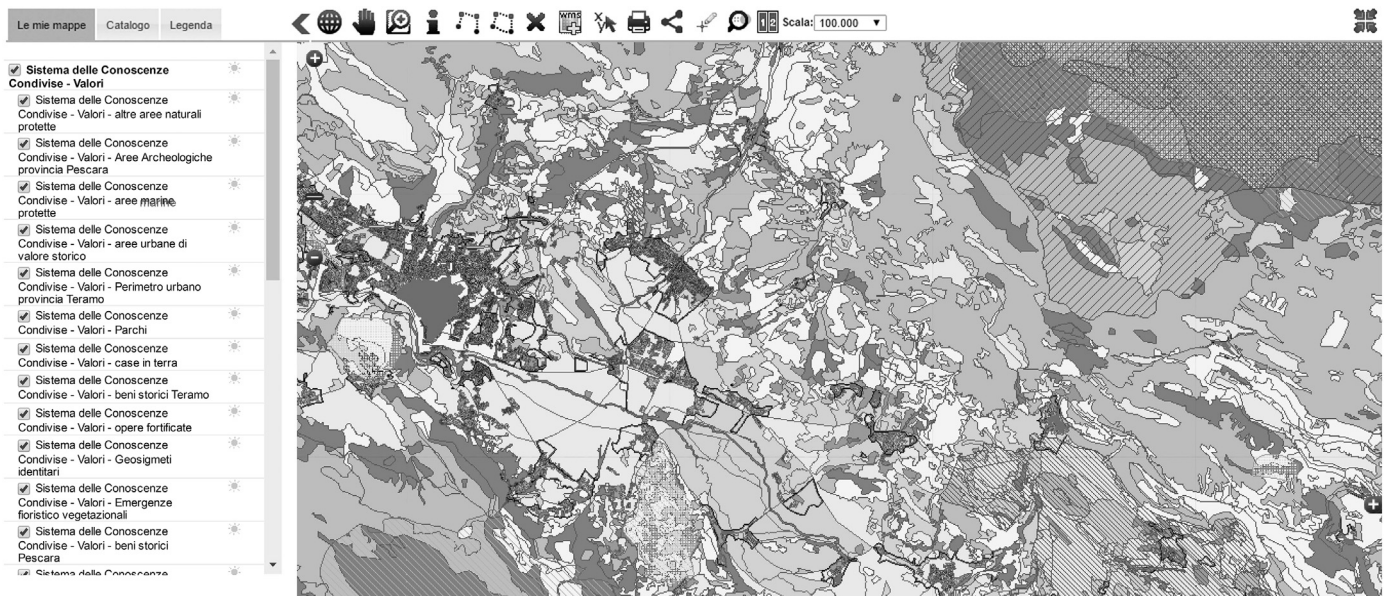


Fig. 5. The 'Values Charter' - CLeP (from: 'Sistema delle Conoscenze Condivise', <http://geoportale.regione.abruzzo.it/Cartanet/viewer>), Aterno Valley, L'Aquila (It).

- The construction of shared, geographical, demographic, statistical, geo-referenced etc. knowledge, constantly updatable, measurable and certifiable.
- Setting up of a European network on environmental assessment.

These conclusions are also confirmed by the document 'Study concerning the preparation of the report on the application and effectiveness of the SEA Directive (Directive 2001/42/EC)' (EC, 2016). The study published by the European Commission in June 2016, which updates in part that of 2009 (EC-ENV, 2009), has faced the application and effectiveness of the SEA Directive through a questionnaire consisting of 10 questions organized on the basis to 5 criteria: Effectiveness, Efficiency, Relevance, Coherence and EU added value. The questions cover topics other than those addressed by Speedy Project, and substantially related (1) the effective influence of the SEA on the Plans and Programmes, (2) the main factors that contributed to achieving the aims of the SEA, (3) if its application is economically viable, (4) its cost and its benefits, (5) if it is able to pursue sustainable development, (6) the consistency of the SEA Directive with the other, and in particular those of the EIA and AA, (7) the interaction of the directive with sectoral policies, (8) potential overlaps that hindered the implementation of the SEA, (9) if the SEA Directive supports the internal market to the EU, (10) the added value of the EU and what would be the situation without the SEA. Among these questions, the first is certainly interesting. Its responses reveal that the SEA mainly affects the identification and evaluation of alternatives, mitigation measures and monitoring measures; many Member States have stressed, however, that have been tracked changes to the Plans or Programmes only in specific cases and the responses have highlighted the lack of public opinion impact, characters certainly related to the specific planning models (but also institutional), and the different interpretation of the Directive.

5.3. Possible evolutions of the SKP Platform

The platform developed by the Speedy Project aims to facilitate cross-border cooperation but also to facilitate multi-level governance (Newig and Fritsch, 2008), to share information and data for assessment (Val, 2011), to structure environments and facilitation tools of the SEA (Di Ludovico, 2017; Weinberger, 2011). At the end of the Project, some lines are emerged about a possible evolution of SKP, mainly related to the construction of Knowledge Systems (socioeconomic/statistical and geographic). Very important have been the use and

implementation of Forums and e-learning, very useful for the development of a community on the SEA theme and on the exchange of experience and experimentation, and for the development of specific training activities of the Public bodies and professional. In particular it has been necessary to integrate most possible these three aspects, namely (1) the collection and processing of statistical and geographic data, (2) the communication and participation, and (3) the formation. To these three aspects should be added to a fourth, no secondary importance, (4) the Plan/Programme governance that introduces co-operation and co-programming/co-planning actions. In the digital network overview there is no complete example of such a digital structure, to which the SKP is the closest one. There are, however, some good practices, mostly American, which can be taken for example for its design and implementation.

One of the most interesting tools, focusing on the citizen and its participation (Newig and Fritsch, 2009) is mySidewalk (<http://app.mysidewalk.com/>), a web tool that allows anyone to view and share the data, also of geographically type. Specifically, the tool allows access to numerous datasets, in the form of interactive charts, tables and maps; upload, share and view their data; communicate online with citizens. Other tools of this kind are, for example, MetroQuest (<http://metroquest.com/>), a platform that has the ability to show and compare scenarios through maps, tables and graphics, images and text, and Open Town Hall that focuses mainly on the component of 'citizen engagement', engineered by Peak Democracy (<http://www.peakdemocracy.co/>). Another interesting tool is UrbanSim (<http://www.urbansim.com/>), an integrated platform for sharing data, designing plans and alternative scenarios, simulating impacts over time, and visualizing 3D results.

An interesting experience of building a shared knowledge system (on the topic of knowledge brokerage see: Sheate and Partidário, 2010) has been tested in the framework of the new Landscape Plan of the Abruzzo Region (IT). This is a WebGIS published in the Geoportal of the Region ('Sistema delle Conoscenze Condivise' in: <http://geoportale.regione.abruzzo.it/Cartanet>), derived from some knowledge sharing processes, now limited to public bodies and to some environmental associations, structured on the so-called Map of Places and Landscapes (CLeP) (Di Ludovico, 2017, 2011; Di Ludovico and Properzi, 2005) elaborated under the Landscape Plan. CLeP is a collection of geographic information organized on the basis of the following components: (1) Values (Fig. 5), (2) Risks, (3) Degradation/Abandon/Fractures, (4) Constraints, (5) Territorial and urban armour (soils reserved for the

services and facilities).

On the geographic information seems to respond to the needs emerged in the Speedy Project the GIS CommunityViz application (<http://placeways.com/index.html>), which includes attributes, indicators, and equations that allow users to examine how different factors and variables of data interact with each other. Another GIS application of the same type is Index (<http://crit.com/>), one of the most popular planning tools in the Usa. It is an integrated suite of tools designed to support the entire community planning process and its development.

The evolution of the SKP to which we think, combines the functions of all these tools and techniques in an intuitive environment, able to make explicit and transparent the process of building the Plan/Programme (but also Urban design).

6. Results and discussions

The main achievement of the Speedy Project has been to highlight the assonance and dissonance between models, practices and regulations on the SEA of the countries involved (Italy and the countries of the east coast of the Adriatic) and the application of the relative Directive in a cross-border context, through a series of tools always developed by the Project.

What has emerged in an evident way is that the Directive 42/2001/EC is characterized by a *static* approach to the environmental assessment of Plans and Programmes and this is why it is made up of general and very broad principles. This amplitude has become a stiffness of the regulatory transposition systems of some countries, particularly those such as Italy, which relate to a regulatory and *landed* and non-strategic planning model. With the objective, therefore, of a *flexible* and *dynamic* application of the Directive (OECD, 2012), which is lost in local legislative *corpus* (and in the discretionary power of Member States (Risse et al., 2003)) comes first the need to specify what would be the optimal level of urban and territorial planning to which the SEA should be applied, a level which is considered to be the *strategic* rather than the *landed*. Since there are no regulations on this at European level, this specification naturally has a major impact on the town planning legislation of individual Member States.

A result of a certain interest in the *flexibility* track, which is not always synonymous of *simple* (Farmer, 2007), and *dynamism*, involves the systematization of the assessment experiences developed in partner countries engaged in the project. This is the first step towards the creation of a network of institutional actors committed to the territory govern and in the reduction of the impacts due to man's territorial transformation. In other words, one of Speedy's most prominent products has been the building a process of sharing between the partners involved, implemented through different rules. The outcome of this process represents the first step in building a sort of 'Assessment manual in becoming', a collection of critical experiences and evaluations that will provide support to those who will apply in the Strategic Environmental Assessment. The accumulation of experience and, above all, of solutions to emerging problems may allow to realize a self-learning process, surely more effective than a 'good practice manual' defined once for all and fixed in time, unable to change.

In this sense, the SKP experience and the significance attributed to knowledge and above all the continuous training developed in the e-learning section are particularly useful. In fact, experiences, solutions developed by different subjects, data and information derived from the *good practices* and *forum* sections of the platform can converge into the *e-learning* section. This modality of continuous training obviously has a problem: the process now outlined has the potential to exist only if the platform is managed by institutional bodies (EU, MS, Regions, etc.) that are capable of engaging personnel able of managing the process. It is not possible to implement the SKP, particularly in the evolutions described in this article, and to carry out the continuous training process, in the absence of an institutional *direction* that cures both the

disciplinary, administrative and relational aspects.

Another result of great interest, in our view produced by research, is the finding of some criticalities (not many in truth) in the assessment process and the lack of a *common language* among the various partners regarding words introduced in the European Directive and in national transposing legislation.

As already mentioned in other parts of this article, one of the main problems identified by the Speedy Project partners has been the difficulty in defining what to put to assessment: the Italian partners, for example, expressed some concern about the application of a Strategic Environmental Assessment to small urban planning tools, often of private initiative. Think, for example, of the *Parcelling Plans* which often concern very small parcel and of which, however, it is difficult to assess the strategic impact.

The problem of selecting the list of Plan/Programme to be assessed has immediately become apparent in the research process and the proposed solutions have been manifold. Among the many, that which derive from *best practices* has appeared the most shared: do not define a list a priori, but derive it from the shared experiences on the platform, updating the *rules* of selection continuously.

An outcome of the research (but would be more appropriate to define it as a topic of discussion) concerned the role of public institutions (mainly identified at regional level) in the construction of the information assets necessary for the development of a Strategic Environmental Assessment. Even in this case, the SKP can play a decisive role by linking statistical and territorial information holders. However, it seems clear the burden of the collection of information, reason often of a superficial processing of the SEA. It is presumably necessary to deepen the reflection on assessment processes where multicriteria techniques, although a good alternative to the lack of quantitative information, do not always appear to be adequate in the representation and measurement of the effects of interventions as well as in the comparison of alternatives for choice of the best solution. This is another topic of discussion dealt with by research, which refers to a decision-making context in which the audience of actors in the game appears variable and linked to the advantage derived from momentary equilibria: often, in urban planning, the consent of the actors (with planning relevance) can significantly change in front of new space configurations. Of course, an official solution is always possible by the public decision-maker, whose contractual capacity, however, does not always win. A reflection that leads to questioning on the planning level useful for alternative formation (structural/strategic planning) (Fogleman, 2017; Elvin, 2017).

Other topics of discussion concerned the nature and interpretation of an environment strategy in urban or suburban context: what types of assessment can be used in consolidated urban areas? Is it also possible to consider the aspects of the compact urban settlement? Interestingly, the reflections and initiatives proposed by the Center for active design of New York (<https://centerforactivedesign.org/about/>), which provide an enlarged point of view on the theme of public health and environmental protection.

A last point of discussion highlighted the role of techniques in the assessment process. It is partly said of the role of multicriteria analysis, but more generally it is necessary to define the techniques appropriate to the different problems faced. From the research has emerged the need to define an updateable set of techniques to be used in relation to the problems faced and the availability of information. Even in this case SKP and sharing of experiences can be a valid decision support.

7. Conclusions

In conclusion, the Speedy Project has highlighted the criticality of the implementation of Directive 2001/42/EC mainly related to the differences in the transposition and planning/programming models of the partners involved, as well as to the lack of information and physical or virtual sites in which to carry out the assessment (and the planning/

programming process), to make it a continuous and light practice.

Two aspects emerge at this point. The first concerns the cooperation arrangements of institutional actors that realize Plans and Programmes assessment. This aspect is extremely important because it involves integrated problems such as standardizing planning models to which apply Environmental Assessment and the exchange of best practices useful to refine the implementation procedures. A second aspect concerns the formulation of a centralized framework (laws, regulations, but above all knowledge), which implies the preparation of an updated Directive on the issues emerging from this research to ensure a clear reference framework for Member States and their territorial articulations in standardizing of the SEA Procedures.

With Speedy's 'Operational Guidelines' we have tried to identify the problematic steps of SEA Directive 42/2001/EC, associating these steps with some proposals with different levels of priority. These proposals may also refer indirectly to the SEA, e.g. regulations, guidelines and other Directives related to parallel and integrative topics (EIA, AA, Inspire, etc.).

Acknowledgments

Donato Di Ludovico wrote the Sections 1, 3.1, 4, 5.1, 5.2, 5.3, Valter Fabietti wrote the abstract, Sections 2, 3 (intro), 5 (intro), 6 and 7.

The partnership of the Speedy project comprises 10 beneficiaries and 2 associated institutions that correspond to 5 Adriatic countries: Albania, Serbia, Croatia, Italy and Greece. Specifically the partnership of the beneficiaries is composed of: Abruzzo Region (Italy) as lead beneficiary (scientific coord.: Donato Di Ludovico), Marche Region (Italy), Molise Region (Italy), 'G. D'Annunzio' University (Italy; scientific coord.: Valter Fabietti), Fi.R.A. spa (Italy), Municipality of Rakovica (Serbia), Dubrovnik Neretva County Regional Development Agency DUNEA (Croatia), Centre for Research and Development CRD (Albania), National Territorial Planning Agency NTPA (Albania), Region of Ionian Islands/Regional Unit Of Corfu (Greece), Ministry of environment (Italy) as public body associated, Ministry of environment (Serbia) as public body associated.

The technical staff of the lead partner, at the time of writing the 'Operational Guidelines', consisted of: Laura D'Antonio, Luca De Luca, Cinzia Di Giacinto, Luca Iagnemma, Chiara Micocchi, Francesca Laschiazza, Alessandra Nuvolone.

References

- Abaza, H., Bisset, R., Sadler, B., 2004. Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach. UNEP, Geneva (CH).
- Bidstrup, M., Hansen, A.M., 2014. The paradox of strategic environmental assessment. *Environ. Impact Assess. Rev.* 47, 29–35.
- Bina, O., 2007. A critical review of the dominant lines of argumentation on the need for strategic environmental assessment. *Environ. Impact Assess. Rev.* 27 (7), 585–606.
- Bonvoisin, N., 2011. Transboundary issues in SEA. In: Sadler, B. (Ed.), *Handbook of Strategic Environmental Assessment*. Earthscan, London-Washington.
- Brown, A.L., Théritel, R., 2000. Principles to guide the development of strategic environmental assessment methodology. *Impact Assess. Project Appraisal* 18 (3), 183–189.
- Busca, A., Fabietti, V., Di Rico, B., 2005. La valutazione ambientale strategica del PTCP della Provincia di Chieti. *Urbanistica Dossier*, n. 79.
- Chaker, A., El-Fadl, K., Chamas, L., Hatjian, B., 2006. A review of strategic environmental assessment in 12 selected countries. *Environ. Impact Assess. Rev.* 26 (1), 15–56.
- Coenen, F.H.J.M., Huiteima, D., O' Toole, L.J.J. (Eds.), 1998. *Participation and the Quality of Environmental Decision Making*. Springer Science + Business Media, Dordrecht, New York.
- Dale, V.H., Beyeler, S.C., 2001. Challenges in the development and use of ecological indicators. *Ecol. Indic.* 1 (1), 3–10.
- Di Ludovico, D., 2011. Valutazione e Quadri Conoscitivi. In: Properzi, P. (Ed.), *Rapporto dal Territorio 2010*. INU Edizioni, Rome.
- Di Ludovico, D., 2017. Il progetto urbanistico. Prove di innovazione per il futuro della città. Aracne publisher, Rome.
- Di Ludovico, D., Properzi, P., 2005. Valutazioni e Conoscenze, Razionalità parziali e prassi condivise. In: *Proceedings of the XXVI Annual Scientific Conference*. AISRE, Naples October 17–19.
- Donnelly, A., Jones, M., O'Mahony, T., Byrne, G., 2007. Selecting environmental indicator for use in strategic environmental assessment. *Environ. Impact Assess. Rev.* 27 (2), 161–175.
- Drazkiewicz A., Challies E., Newig J. (2015), Public participation and local environmental planning: testing factors influencing decision quality and implementation in four case studies from Germany, *Land Use Policy*, n. 46, p. 211–222.
- EC, 2014. Communication From the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Concerning the European Union Strategy for the Adriatic and Ionian Region, Action Plan. <http://www.adriatic-ionician.eu/component/edocman/34-action-plan-eusair-pdf> (last access 01.06.2017).
- EC, 2016. Study Concerning the Preparation of the Report on the Application and Effectiveness of the SEA Directive (Directive 2001/42/EC). Final Study. http://ec.europa.eu/environment/eia/pdf/study_SEA_directive.pdf (last access 01.06.2017).
- EC-ENV, 2009. Study Concerning the Report on the Application and Effectiveness of the SEA Directive (2001/42/EC), Final Report, April 2009. European Commission, DG ENV. <http://ec.europa.eu/environment/eia/pdf/study0309.pdf> (last access 01.06.2017).
- Elvin, Q.C.D., 2017. The role of alternatives in the SEA directive. In: Jones QC, G., Scotford, E. (Eds.), *The Strategic Environmental Assessment Directive. A Plan for Success?* Hart Publishing, Oxford-Portland, Oregon.
- EU-ERDF, 2012. e-Participation Best Practice Manual, European Union. http://eparticipation.eu/wp-content/uploads/2012/10/eCitizeni_manuaal_A4_ENGLISH-1.pdf (last access 01.06.2017).
- Fabietti V. (2005), La Vas del PTCP di Chieti, in: *Esperienze italiane di valutazione ambientale di piani e programmi (Vas)*, Fidanza A. eds., *Urbanistica Dossier* n. 88, pag. 15–18.
- Fabietti, V., 2008. Linee guida regionali per la VAS: questioni aperte e possibili percorsi attuativi. In: De Pascali, P. (Ed.), *Indagini ed esperienze sulla governance ambientale nella pianificazione territoriale*. Franco Angeli, Milano, pp. 156–174.
- Fabietti, V., Carbonara, S., 2005. Verso la definizione di un protocollo per la VAS del PTCP di Vicenza. In: *Documento preliminare di PTCP*, Provincia di Vicenza.
- Farmer, A., 2007. Simplifying EU Environmental Policy, *Policy Department Economic and Scientific Policy*. European Parliament's Committee on the Environment, Public Health and Food Safety.
- Fischer, T.B., 2002. Strategic Environmental Assessment performance criteria - the same requirements for every assessment? *J. Environ. Assess. Policy Manag.* 4 (1), 83–99.
- Fischer, T.B., 2003. Strategic environmental assessment in post-modern times. *Environ. Impact Assess. Rev.* 23 (2), 155–170.
- Fogleman, V., 2017. Plan and programmes under the Sea Directive. In: Jones, Q.C.G., Scotford, E. (Eds.), *The Strategic Environmental Assessment Directive. A Plan for Success?* Hart Publishing, Oxford-Portland, Oregon.
- Fundingsland Tetlow, M., Hanusch, M., 2012. Strategic environmental assessment: the state of the art. *Impact Assess. Project Appraisal*. 30 (1), 15–24.
- Hanzl M. (2007), Information technology as a tool for public participation in urban planning: a review of experiments and potentials, *Des. Stud.*, n. 28, p. 289–307.
- IAIA, 2005. Distance learning and e-learning in SEA, position paper. In: *International Experience and Perspectives in SEA*, 26–30 September 2005, Prague (Czech Republic). International Association for Impact Assessment. <http://www.iaia.org/pdf/ConferenceDocuments/SEA-Prague/E6%20Distance%20learning.doc> (last access 01.06.2017).
- Janin Rivolin, U., 2016. Governo del territorio e pianificazione spaziale in Europa. De Agostini Scuola, Novara.
- Jha-Thakur, U., Gazzola, P., Peel, D., Fischer, T.B., Kidd, S., 2009. Effectiveness of strategic environmental assessment - the significance of learning. *Impact Assess. Project Appraisal*. 27 (2), 133–144.
- João, E., McLauchlan, A., 2014. Would you do SEA if you didn't have to? - reflections on acceptance or rejection of the SEA process. *Impact Assess. Project Appraisal*. 32 (2), 87–97.
- Jones, Q.C.G., Scotford, E. (Eds.), 2017. *The Strategic Environmental Assessment Directive. A Plan for Success?* Hart Publishing, Oxford-Portland, Oregon.
- Kørnov, L., Thissen, W.A.H., 2000. Rationality in decision- and policymaking: implications for strategic environmental assessment. *Impact Assess. Project Appraisal*. 18 (3), 191–200.
- Kurtz, J.C., Jackson, L.E., Fisher, W.S., 2001. Strategies for evaluating indicators based on guidelines from the Environmental Protection Agency's Office of Research and Development. *Ecol. Indic.* 1, 49–60.
- Layzer, J.A., 2002. Citizen participation and government choice in local environmental controversies. *Policy Stud. J.* 30 (2), 193–207.
- Lee, N., Walsh, F., 1992. Strategic environmental assessment: an overview. *Project Appraisal*. 7 (3), 126–136.
- Lobos, V., Partidário, M.R., 2014. Theory versus practice in Strategic Environmental Assessment (SEA). *Environ. Impact Assess. Rev.* 48, 34–46.
- Munoz Gielen, D., Tasan-Kok, T., 2010. Flexibility in planning and the consequences for public-value capturing in UK, Spain and the Netherlands. *Eur. Plan. Stud.* 18 (7), 1097–1131.
- Nelson, P., 2011. SEA and spatial planning. In: Sadler, B. (Ed.), *Handbook of Strategic Environmental Assessment*. Earthscan, London-Washington.
- Newig, J., Fritsch, O., 2008. Environmental Governance: Participatory, Multi-level - and Effective? (UFZ Diskussionspapiere, no. 15/2008).
- Newig, J., Fritsch, O., 2009. More input - better output: does citizen involvement improve environmental governance? In: Ingolfur, B. (Ed.), *In Search of Legitimacy: Policy Making in Europe and the Challenge of Complexity*. Barbara Budrich Publishers, Leverkusen (Germany), pp. 205–224.
- Noble, B.F., 2000. Strategic environmental assessment. What is it? & what makes it strategic? *J. Environ. Assess. Policy Manag.* 2 (2), 203–224.
- OECD, 2012. *Strategic Environmental Assessment in Development Practice, A Review of Recent Experience*. OECD Publishing.

- OECD-DAC, 2006. Applying Strategic Environmental Assessment, Good Practice Guidance for Development Co-operation. OECD Publishing. <https://www.oecd.org/environment/environment-development/37353858.pdf> (last access 01.06.2017).
- Partidario, M.R., 1996. Strategic Environmental Assessment: key issues emerging from recent practice. *Environ. Impact Assess. Rev.* 16 (1), 31–55.
- Partidario, M.R., 2012. Strategic environmental assessment. Better practice guide. In: *Methodological Guidance for Strategic Thinking in SEA*. Portuguese Environment Agency and Redes Energéticas Nacionais (REN). http://ec.europa.eu/environment/eia/pdf/2012%20SEA_Guidance_Portugal.pdf (last access 01.06.2017).
- Partidario, M.R., 2015. A strategic advocacy role in SEA for sustainability. *J. Environ. Assess. Policy Manag.* 17 (1), 1550015/1–8.
- Partidario, M.R., Clark, R. (Eds.), 2000. *Perspectives on Strategic Environmental Assessment*. Lewis Publisher, Boca Raton-London-New York-Washington.
- Partidario, M.R., Therivel, R., 1996. Key issues in SEA in practice. In: Therivel, R., Partidario, M.R. (Eds.), *The Practice of Strategic Environmental Assessment*. Earthscan, London.
- Partidario, M.R., Wilson, L., 2011. Professional and institutional capacity-building for SEA. In: Sadler, B. (Ed.), *Handbook of Strategic Environmental Assessment*. Earthscan, London-Washington.
- Persson, A., Nilsson, M., 2007. Towards a framework for sea follow-up: theoretical issues and lessons from policy evaluation. *J. Environ. Assess. Policy Manag.* 9 (4), 473–496.
- RegAbr, 2016. Operational Guidelines on Findings and Suggestions for the Review of Directive 42/2001/EC. <http://www.speedyproject.eu/documents/10179/0/Findings+and+suggestions+for+the+review+of+Directive+42-2001-EC/6f78134b-75c1-4505-820c-0d905db6c3b1?version=1.0> (last access 21.09.2016).
- Retief, F., Jones, C., Jay, S., 2008. The emperor's new clothes — reflections on strategic environmental assessment (SEA) practice in South Africa. *Environ. Impact Assess. Rev.* 28 (7), 504–514.
- Risse, N. (Ed.), 2003. Implementing the European SEA Directive: the Member States' margin of discretion. *Environ. Impact Assess. Rev.* 23 (4), 453–470.
- Sheate, W.R., Partidario, M.R., 2010. Strategic approaches and assessment techniques—potential for knowledge brokerage towards sustainability. *Environ. Impact Assess. Rev.* 30 (4), 278–288.
- Stoeglehner, G., Wegerer, G., 2006. The SEA-directive and the SEA-protocol adopted in spatial planning – similarities and differences. *Environ. Impact Assess. Rev.* 26 (6), 586–599.
- Therivel, R., 1996a. Establishing environmental indicators. In: Therivel, R., Partidario, M.R. (Eds.), *The Practice of Strategic Environmental Assessment*. Earthscan, London.
- Therivel, R., 1996b. Identifying alternative PPPs. In: Therivel, R., Partidario, M.R. (Eds.), *The Practice of Strategic Environmental Assessment*. Earthscan, London.
- Therivel, R., 2010. *Strategic Environmental Assessment in Action*, Second ed. Earthscan, London.
- TSG, 2013. *Strategic Environmental Assessment Guidance*, The Scottish Government. <https://beta.gov.scot/publications/strategic-environmental-assessment-guidance/documents/00432344.pdf> (last access 01.06.2017).
- UNECE, 2001. Decision II/9. Strategic Environmental Assessment, Meeting of the Parties to the Espoo Convention, 2nd Session, 26–27 February 2001. <http://www.unece.org/fileadmin/DAM/env/documents/2001/eia/mp.eia.2001.9.e.pdf> (last access 01.06.2017).
- Val, Gent P., 2011. SEA knowledge and its use in information sharing, training and learning. In: Sadler, B. (Ed.), *Handbook of Strategic Environmental Assessment*. Earthscan, London-Washington.
- Vicente, G., Partidario, M.R., 2006. SEA – enhancing communication for better environmental decisions. *Environ. Impact Assess. Rev.* 26 (8), 696–706.
- Weiland, U., 2010. Strategic environmental assessment in Germany – practice and open questions. *Environ. Impact Assess. Rev.* 30 (3), 211–217.
- Weinberger, D., 2011. *Too Big to Know: Rethinking Knowledge Now that the Facts aren't the Facts, Experts Are Everywhere, and the Smartest Person in the Room*. Basic Books, New York.
- Donato Di Ludovico**, PhD, researcher of Urban and territorial planning and design, Urban design professor at the University of L'Aquila (Engineering). He carries out research activities within the new forms of Urban planning and design, knowledge and assessment systems (SEA), spatial planning and strategic planning. With regard to the Urban design, two research lines are being developed related to the impact of new technologies on public space and environmental safety. He is currently secretary of INU Abruzzo-Molise; director of Urban Laboratory for the Reconstruction of L'Aquila (LAURAq- INU/ANCSA); scientific responsible of AnTeA Laboratory (Territorial and Environmental Analysis) at the University of Aquila.
- Valter Fabietti**, full professor of Urban and territorial planning and design, 'D'Annunzio' University of Chieti-Pescara (It). Architect and urban planner experienced in the construction of urban development plans, feasibility studies, marketing planning and analysis and evaluation of intervention programmes, with particular reference to environmental risk areas (EIA, SEA, Seismic Hazard) and tourism development. He worked as M & V programmes for EU financing. It has been a consultant to government agencies (Superior Council of public works, Ministry of Infrastructure and Transport, Ministry of the Environment and the Protection of the Territory and the Sea, Presidency of the Council of Ministers, Regions, Municipalities). He is past president of INU Abruzzo-Molise. He was editor of 'Urbanistica' Italian journal.