

Bottlenecks in SEA implementation: towards a proposal of guidelines for Sardinia

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1 Introduction

The European Directive 2001/42/EC (Directive) introduced the Strategic Environmental Assessment (SEA), a procedure for assessing the impacts of plans and programs on the environment, such as spatial and landscape plans. European member states acknowledged the Directive through a series of legislative acts followed by the introduction of SEA guidelines about the implementation of the SEA procedure. Italy acknowledged the Directive through three legislative decrees from 2006 to 2010.

SEA implementation in Italy has not been geographically balanced, with good experiences of SEA documented mainly in the Italian northern regions (De Montis, 2013). In Sardinia SEA implementation has been hindered by a series of obstacles described in a study by De Montis et al. (2014). In this scenario, SEA guidance documents, henceforth SEA guidelines, are useful to address more effective and homogeneous processes.

We aim to analyze some SEA guidelines mainly released in western European countries and evaluate their effectiveness. This work will be useful for the design of specific guidelines regarding the implementation of SEA of spatial plans released in Sardinia.

2 Materials and methods

2.1 Critical issues for effective SEA guidelines

Despite a certain practice across western Europe, so far only a few studies have scrutinized the effectiveness of SEA guidelines (Schijf, 2011). Donnelly et al. (1998) refer to a range of evaluation procedures: Environmental Impact Assessment (EIA), which applies to a series of public and private projects; Cumulative Effects Assessment (CEA), which “is done to ensure the incremental effects resulting from the combined influences of various actions are assessed” (Minister of Public Works and Government Services, Canada, 1999); Environmental Health Impact Assessment (EHIA), a component of EIA which deals with issues linked to human health (Fehr, 1999); Risk Assessment, where emphasis “is on risks to human health from industrial production, use and disposal of hazardous chemicals” (Donnelly et al., 1998); Social Impact Assessment, a process for “assessing or estimating, in advance, the social consequences that are likely to follow from specific policy actions or project development [...]” (Burdge and Vanclay, 1996), and SEA. Théritel et al. (2004) point out specific unresolved issues which “will need to be dealt with in future guidance documents”: i) the drawing up of SEA guidelines for different types of plans and programs with respect to regional and land-use plans; ii) consultation in the scoping stage and while drafting the environmental report; and iii) resourcing SEA, given that considerable financial resources and environmental competences are required in an SEA process and they “will influence how well the

guidance will be implemented in practice” (Thérivel et al., 2004). In table 1, we report critical issues characterizing SEA guidelines.

Table 1 Critical issues of SEA guidelines.

Issues	References	Criticality
Focus on a specific sector	Brooke et al. (2004); Sheate et al. (2004); Thérivel (2004); Schijf (2011)	SEA guidelines are sometimes too generic and do not take into account the hierarchical (policy, plan, or program) level or sector of SEA implementation
Regular updating	Schijf (2011)	This criterion regards SEA guidelines are rarely updated to adapt over time to changes of the local context and “follow the evolution of planning and SEA experience within a given system” (Schijf, 2011)
Inclusion of case studies		Real case studies “make SEA process more tangible [...]” (Schijf, 2011), and provide lessons for practice.

2.2 SEA guidelines selection

We have selected SEA guidelines according to the following conditions: i) approval by a European administration, ii) free accessibility on-line, iii) English or Italian release; and iv) coherence to the SEA Directive. Thus we have studied 13 documents by the following administrations: Ireland, Italy, Latvia, Portugal, Scotland, Sweden, and the United Kingdom; Friuli-Venezia Giulia, Lombardy, Sardinia, Valle d’Aosta, Veneto, and the Autonomous Province of Bolzano. As we aim at constructing a framework for designing SEA guidelines for Sardinia, a region of a European country, we have scrutinized a set of items belonging both to Europe and to Italy drawing key elements from continental and national practice.

In Table 2, we refer these guidelines to the national/local SEA regulation. The Irish document offers general indications on the integration of SEA in the planning process, from pre-review to post-plan stages. It clarifies the SEA stages and proposes an indicative environmental report layout. The Italian guidelines concisely stress SEA role in planning practice and focus on the environmental report design, plan’s alternatives and timing. The document illustrates a planning and assessment process proposed by the Handbook on Environmental Assessment of Regional Development Plans and EU Structural Funds programs of 1998, and sketches an exemplary SEA for municipal land use plans. The Latvian SEA guidelines point out key aspects and best practices in SEA implementation. It also aims to raise awareness among public and private stakeholders (national authorities, interested bodies, and NGOs) on the need to carry out the SEA since the early stages of planning and programming processes.

Table 2 Juridical framework of SEA guidelines selected in this study (after Fischer, 2007).

European body	Description	Publication year	National SEA regulation	Adoption year
Ireland	Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment Guidelines for Regional Authorities and Planning Authorities	2004	Regulations 2004 (Statutory Instrument Number 435 of 2004), and Planning and Development (Strategic Environmental Assessment) Regulations 2004 (Statutory Instrument Number 436 of 2004)	2004
Italy	La Valutazione Ambientale Strategica dei Piani urbanistici e territoriali [Strategic Environmental Assessment of Urban and Regional Plans]	2006	Environmental Code	2006

European body	Description	Publication year	National SEA regulation	Adoption year
Latvia	Guidance to SEA in practice	2007	Environmental Impact Assessment (EIA) Act on 26 February 2004 and 15 September 2005 and by new secondary legislation	2004
Portugal	Strategic Environmental Assessment Better Practice Guide – methodological guidance for strategic thinking in SEA	2012	Decree-Law 232/2007	2007
Scotland	Strategic Environmental Assessment Guidance	2013	Environmental Assessment (Scotland) Act	2005
Sweden	Practical guidelines on strategic environmental assessment of plans and programmes	2010	Environmental Code	2004
The UK	A Practical Guide to the Strategic Environmental Assessment Directive	2005	Environmental Assessment of Plans and Programmes Regulations	2004
Bolzano	Linee guida per la Valutazione ambientale strategica, VAS, nella pianificazione urbanistica dell'Alto Adige	2007	Provincial law 2	2007
Friuli-Venezia Giulia	Linee guida per la formazione del piano del governo del territorio e del rapporto ambientale	2010	Italian Environmental Code	2006-2010
Lombardy	Modello metodologico procedurale e organizzativo della valutazione ambientale di piani e programmi (VAS)	2010	Regional law (RL) No 12	2005
Sardinia	Linee Guida per la Valutazione Ambientale Strategica dei Piani Urbanistici Comunali	2010	Regional Committee Resolution (RCR) No 34/33	2012
Valle d'Aosta	Adeguamento dei PRG al PTP, indicazioni per la valutazione ambientale dei piani regolatori generali comunali	---	RL No 12	2009
Veneto	Annexes to RCR 791	2009	RL 11	2004

The Portuguese SEA guidelines refer to the assessment of plans and programs with a strategic nature, and can support the assessment of policy strategies. The document is inclined to revisiting terms traditionally adopted in environmental assessment discourse: “scoping” is substituted by “critical decision factors”, “planning phases” by “decision windows”, “alternatives” by “strategic options”, and so on. The Scottish SEA guidelines provide a step-by-step guidance to the SEA process and develop on a measure of SEA success, key SEA implementation issues, and operative suggestions (Dos and Don'ts in SEA) for practitioners. The Swedish SEA guidelines refer to: i) SEA glossary and stages; ii) overview of different impact assessment procedures; iii) other SEA guidance documents; and iv) extensive bibliography on SEA. The document focuses on integration strategies: early activation, communication, cooperation and public participation, and early alternative design. The British SEA guidelines focus on the Directive's requirements, the decisions to be taken, and the documentation to be provided in each stage. The document includes a rich reference section and a number of helpful suggestions to integrate SEA with other types of appraisal, such as the Sustainability Appraisal. As for Italian administrations, the Autonomous Province of Bolzano has SEA guidelines developing on the difference between EIA and SEA and on the great advantage of an early SEA implementation at a strategic plan level. The document recommends the use of a table of contents in the preparation of the environmental report. Friuli Venezia Giulia has a guidance document concerning the design of an SEA of the Piano di Governo del Territorio (Regional Government Plan, Italian acronym PGT), the main municipal land use planning instrument. The guidelines focus on sustainability requirements of the transformations proposed by the PGT and recall, inter alia, the following measures: reduction of the consumption of natural resources, use of alternative energy sources, and balancing cities and protected areas. Lombardy has a SEA guidance for each specific plan or program, including the Piano di Governo del Territorio (Regional Government Plan). In each case, the document describes: SEA general regulations and scope, stakeholders involved, consultation, communication, and information

methods; SEA screening, and SEA phases. Sardinia presents guidelines that are specific for SEA implementation of the Piano Urbanistico Comunale (Municipal Urban Plan, PUC) and include a description of SEA stages and in particular of consultation and annexes with practical examples. Valle d'Aosta's SEA guidelines explain and facilitate the understanding of the meaning of RL No 12 on EIA and SEA procedures. The document concerns typically: coordination and simplification, SEA scope, methodologies, screening, drafting of environmental report, participation, and monitoring. Veneto offers a variety of guidance documents concerning SEA implementation of many planning instruments including: regional plans or programs, municipal or inter-municipal land use plans. In each case, guidance documents focus on writing scoping document and environmental report, consultation, adoption procedure, public consultation and participation.

3 Results and discussion

In table 4, we report the result of the preliminary analysis of the SEA guidelines selected, according to the criteria indicated in Table 1.

While the majority of EU states have approved SEA guidelines offering a general overview of key issues, Italian state and local administrations (Bolzano, Lombardy, Sardinia, and Veneto) present specific documents that refer to given sectors of planning and programming (for instance, land-use and town planning). SEA guidelines in force in the UK refer to further guidance documents relating, for example, to transport land use and spatial plans (UK, 2005). Secondly, in all the cases SEA guidelines are not regularly updated and, in addition, the oldest ones date back ten years. SEA guidelines of Lombardy and Sardinia were updated in 2010. With reference to the third column in Table 3, in four cases SEA guidelines show a good attitude to integrate in the discourse real and practical examples.

Table 3 SEA guidelines against classification criteria.

Institution	Specific guidelines	Regularly updated	Case studies included
Ireland			
Italy	v		v
Latvia			v
Portugal			v
Scotland			
Sweden			
UK			v
Region of Friuli-Venezia Giulia			
Region of Lombardy	v		
Region of Sardinia	v		
Region of Valle d'Aosta			
Region of Veneto	v		
Autonomous Province of Bolzano	v		

In the remainder of this section, we report the results of our scrutiny of the specific recommendations proposed in the SEA guidelines selected with reference to typical SEA themes (see Table 4).

Table 4 SEA guidelines: specific recommendations by SEA theme.

SEA themes	Specific recommendations
Screening	Aim; basic criteria and exceptions; clarify what it is used and why it should be done
Scoping	Aim; what information is needed for the draft scoping document; clearly define aims of plan and SEA; define the environmental report's contents
Environmental report	Aim; how to measure the quality; how to handle uncertainties and lack of data; how to identify, describe and

SEA themes	Specific recommendations
	evaluate the effects of the plan; prepare a template of the environmental report
Alternatives	Why define alternatives; how define alternatives; how compare the alternatives with each other; how to select reasonable alternative
Consultation	Aim; who, when and how; how to measure the quality; define a time schedule to determine the moments and places of participation
Monitoring	Aim; who should do it; what needs to be monitored; how should this be done; which indicators should be used
Integration SEA-planning process	The need to integrate SEA within plan process is highlighted
SEA-EIA	Differences between SEA and EIA; how they connect to each other
Checklist	SEA guidelines suggest the adoption of checklists to assess the quality of SEA and its phases

Guidelines generally divide SEA processes into distinct stages and indicate who should be involved (and when). In addition, most of the guidelines insist that SEA should be integrated and carried out as early as possible during the development of plans and programs.

Many SEA guidelines cover the relationship between SEA and EIA and other environmental assessments (see the cases of Italy, Portugal, Scotland, and the UK). In the case of Latvia, Portugal, Sweden, and the UK, SEA guidelines suggest the adoption of checklists to assess the quality of SEA and its phases. Checklists focused on participation are extremely useful, as they remind SEA managers who (and when) is to be involved.

4 Conclusion

In this study we analyzed international publications which discuss about SEA guidance documents (SEA guidelines) and the contents of some SEA guidelines released in Western Europe. We found some topics that should characterize the SEA guidelines, which include, inter alia, a description of the objectives of the various stages of the SEA process, advices on how define a clear time schedule for public participation, suggestions about what indicators should be used to monitor the effects of the plan on the environment, guidance about how define reasonable alternatives, and so on. The use of checklists is recommended to evaluate the quality of SEA process. This is not enough. SEA guidelines should be: tailored for a specific type of plan or program, and for a specific sector or context, to be more effective; easy to understand and use; regularly updated to changes in the context of application through time; provided of practical examples and real case studies of good SEA practices.

We are now working on the elaboration of the results presented in the perspective of supporting the regional administration of Sardinia in the design of guidelines and regional law on SEA integration in the planning process.

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5 References

- Brooke, C., James, E., Jones, R., Thérivel, R. (2004). Implementing the strategic environmental assessment (SEA) Directive in the South West of England. *European Environment*, 14 (3), 138-152.
- Brown, A. L., Thérivel, R. (2000). Principles to guide the development of strategic environmental assessment methodology. *Impact Assessment and Project Appraisal*, 18 (3), 183-189.
- Burdge, R. J., Vanclay F. (1996). Social Impact Assessment: a contribution to the state of the art series. *Impact Assessment*, 14 (1), 59-86.
- De Montis, A. (2013). Implementing Strategic Environmental Assessment of spatial planning tools: A study on the Italian provinces. *Environmental Impact Assessment Review*, 41, 53-63.
- De Montis, A., Ledda, A., Caschili, S., Ganciu, A., Barra, M. (2014). SEA effectiveness for landscape and master planning: An investigation in Sardinia. *Environmental Impact Assessment Review*, 47, 1-13.
- Donnelly, A., Dalal-Clayton, B., Hughes, R. (1998). *A Directory of Impact Assessment Guidelines*. (2nd ed.). London: International Institute for Environment and Development.
- Fehr, R. (1999). Environmental Health Impact Assessment, Evaluation of a Ten-Step Model. *Epidemiology Resources Inc*, 10 (5), 618-625.
- Fischer, T. B. (2007). *Theory and practice of strategic environmental assessment: towards a more systematic approach*. London: Earthscan.
- Fischer T. B. (2010). Reviewing the quality of strategic environmental assessment reports for English spatial plan core strategies. *Environmental Impact Assessment Review*, 30 (1), 62-69.
- Gauthier, M., Simard, L., Waau, J. P. (2011). Public participation in strategic environmental assessment (SEA): critical review and the Quebec (Canada) approach. *Environmental Impact Assessment Review*, 31 (1), 48-60.
- Hanusch, M., Glasson, J. (2008). Much ado about SEA/SA monitoring: the performance of English regional spatial strategies, and some German comparisons. *Environmental Impact Assessment Review*, 28 (8), 601-617.
- Minister of Public Works and Government Services, Canada (1999). *Cumulative Effects Assessment Practitioners Guide*. Canadian Environmental Assessment Agency, ISBN: 0-660-17709-9.
- Nelson, P. SEA and spatial planning. In B. Sadler, J. Dusik, T. B. Fischer, M. R. Partidário, R. Verheem, R. Aschemann (Eds.), *Handbook of Strategic Environmental Assessment* (pp. 310–334). London: Earthscan.
- Noble, B. F., Gunn, J., Martin, J. (2012). Survey of current methods and guidance for strategic environmental assessment. *Impact Assessment and Project Appraisal*, 30 (3), 139-147.
- Schijf, B. (2011). Developing SEA Guidance. In B. Sadler, J. Dusik, T. B. Fischer, M. R. Partidário, R. Verheem, R. Aschemann (Eds.), *Handbook of Strategic Environmental Assessment* (pp. 487-500). London: Earthscan.
- Sheate, W. R., Byron, H. J., Smith, S. P. (2004). Implementing the SEA Directive: sectoral challenges and opportunities for the UK and EU. *European Environment*, 14 (2), 73-93.
- Thérivel, R. (2004). *Strategic Environmental Assessment in Action*. London: Earthscan.
- Thérivel, R., Caratti, P., Partidário, M. R., Theodórsdóttir, Á. H., Tyldesley, D. (2004). Writing strategic environmental assessment guidance. *Impact Assessment and Project Appraisal*, 22 (4), 259-270.