This special issue collects a selection of peer-review papers presented at the 8th International Conference INPUT 2014 titled “Smart City: planning for energy, transportation and sustainability of urban systems”, held on 4-6 June in Naples, Italy. The issue includes recent developments on the theme of relationship between innovation and city management and planning.

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Special issue, June 2014
SMART CITY

PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM

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This special issue of TeMA collects the papers presented at the 8th International Conference INPUT 2014 which will take place in Naples from 4th to 6th June. The Conference focuses on one of the central topics within the urban studies debate and combines, in a new perspective, researches concerning the relationship between innovation and management of city changing.

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EIGHTH INTERNATIONAL CONFERENCE INPUT 2014

SMART CITY. PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM

This special issue of TeMA collects the papers presented at the Eighth International Conference INPUT, 2014, titled "Smart City. Planning for energy, transportation and sustainability of the urban system" that takes place in Naples from 4 to 6 of June 2014.

INPUT (Innovation in Urban Planning and Territorial) consists of an informal group/network of academic researchers Italians and foreigners working in several areas related to urban and territorial planning. Starting from the first conference, held in Venice in 1999, INPUT has represented an opportunity to reflect on the use of Information and Communication Technologies (ICTs) as key planning support tools. The theme of the eighth conference focuses on one of the most topical debate of urban studies that combines, in a new perspective, researches concerning the relationship between innovation (technological, methodological, of process etc..) and the management of the changes of the city. The Smart City is also currently the most investigated subject by TeMA that with this number is intended to provide a broad overview of the research activities currently in place in Italy and a number of European countries. Naples, with its tradition of studies in this particular research field, represents the best place to review progress on what is being done and try to identify some structural elements of a planning approach.

Furthermore the conference has represented the ideal space of mind comparison and ideas exchanging about a number of topics like: planning support systems, models to geo-design, qualitative cognitive models and formal ontologies, smart mobility and urban transport, Visualization and spatial perception in urban planning, innovative processes for urban regeneration, smart city and smart citizen, the Smart Energy Master project, urban entropy and evaluation in urban planning, etc..

The conference INPUT Naples 2014 were sent 84 papers, through a computerized procedure using the website www.input2014.it. The papers were subjected to a series of monitoring and control operations. The first fundamental phase saw the submission of the papers to reviewers. To enable a blind procedure the papers have been checked in advance, in order to eliminate any reference to the authors. The review was carried out on a form set up by the local scientific committee. The review forms received were sent to the authors who have adapted the papers, in a more or less extensive way, on the base of the received comments. At this point (third stage), the new version of the paper was subjected to control for to standardize the content to the layout required for the publication within TeMA. In parallel, the Local Scientific Committee, along with the Editorial Board of the magazine, has provided to the technical operation on the site TeMA (insertion of data for the indexing and insertion of pdf version of the papers). In the light of the time's shortness and of the high number of contributions the Local Scientific Committee decided to publish the papers by applying some simplifies compared with the normal procedures used by TeMA. Specifically:

- Each paper was equipped with cover, TeMA Editorial Advisory Board, INPUT Scientific Committee, introductory page of INPUT 2014 and summary;
- Summary and sorting of the papers are in alphabetical order, based on the surname of the first author;
- Each paper is indexed with own DOI codex which can be found in the electronic version on TeMA website (www.tema.unina.it). The codex is not present on the pdf version of the papers.
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ABSTRACT
The European Directive 2001/42/EC (Directive) has introduced the Strategic Environmental Assessment (SEA), a procedure for assessing the effects of certain plans and programs on the environment. The Directive has been transposed in different ways and times within Europe: member states have frequently drawn up guidelines to facilitate SEA implementation, by adopting different approaches. So far a few studies have been performed to analyze SEA guidelines.
In this paper we aim to analyze key elements of SEA guidelines released by seven European countries in order to evaluate the effectiveness of those documents and SEA implementation. We have found that no SEA guidelines satisfy all key elements we have identified. Based on the latter finding, this work is introductory to a further analysis which aims to characterize SEA guidelines and define a proposal of SEA guidelines for landscape planning in the Italian region of Sardinia.

KEYWORDS
Strategic environmental assessment, European Union, Guidance documents
INTRODUCTION

Italy has acknowledged the European Directive 2001/42/EC (Directive) through the legislative decree 152/2006 (Italy 2006), henceforth Environmental Code, which has been subsequently improved by similar legislative decrees in 2008 and 2010 (Italy 2008, 2010).

The degree of SEA implementation within the Italian context has been unequal: good experiences of SEA have been documented mainly in the northern regions of the peninsula (De Montis 2013), but in Southern Italy and, in particular, in Sardinia some difficulties in SEA practice have been documented at the level of municipal spatial planning (De Montis et al. 2013). Therefore, there is the need of documents able to steer SEA practice towards the achievement of homogeneous higher quality level. Many countries have so far adopted such documents under a variety of denominations like guidelines, guidance or manuals (henceforth SEA guidelines). With respect to Italy, SEA guidelines have been drawn up in the context of EU Structural Funds 2000-2006 (Italy 1999) and of the Enplan Project (Enplan Project 2004).

The aim of this paper is to scrutinize the guidelines approved by some European countries in order to evaluate the effectiveness of those documents and SEA implementation. We focus on critical points, in the perspective of the design of specific guidelines on SEA implementation in Sardinia for the sector of spatial planning. The study is not intended to establish a ranking or quality benchmarks. It regards instead the relevance of each guideline with respect to issues reported as relevant in the literature. This work has been carried out in three steps: i) literature review on the classification criteria about the structure of the guidelines; ii) identification and selection of guidelines available on-line; iii) comparison of the contents of the selected guidelines with respect to the classification criteria. The arguments of this paper unfold as follows. Section 2 reports the literature review about SEA guidelines, and introduces the key elements emerging in those documents. In Section 3, we explain our classification methodology. In Section 4, we present the results, which are discussed in Section 5. In Section 6, the final conclusions are presented.

SEA GUIDELINES CRITICAL ISSUES: A LITERATURE REVIEW

Despite a fairly good practice in the adoption of SEA guidelines, so far only a few studies have scrutinized the effectiveness of those documents. Schijf (2011, 487) argues "that there has been little systematic analysis of the guidance that is available". In this section, we discuss some critical issues emerging from SEA implementation in different contexts, and from drawing up SEA guidelines.

The choice of a particular SEA process depends on the context and level of the policy, plan or program (PPP). At the policy level, it may be appropriate to make a low detailed qualitative assessment. With respect to the evaluation of plans or programs, direct environmental effects are involved and an EIA-based procedure may be invoked (Abaza et al. 2004, 93). The availability of SEA guidelines drawn up for specific sectors, organizations, and types of impacts, is useful to promote, or speed up, SEA practice (Thérivel 2004, 208).

Schijf (2011, 491) argues that there are good reasons "for making specific guidance material to a given planning system, a certain planning level or particular type of policy, plan or programme" and there are "also solid reasons for developing sector-specific guidance on SEA". Brown and Thérivel (2000) argue that SEA methodology “have to be shaped according to the PPP formulation and decision-making context” and the “techniques, processes, time frames and administrative requirements for implementing SEA need to be tailored closely to the particular circumstances of the PPP under consideration”. SEA methodologies are related to issues like “the level at which PPP formulation and decision-making occurs” (Brown and Thérivel 2000), and none of them is directly applicable to any socio-political context or strategic action. Balfors and Schmidtbauser (2002) examine the Swedish SEA guidelines for EU Structural Funds, which “aim to increase
the integration of environmental concerns in the programming process by promoting the application of environmental-objective-led SEA”. The guidelines document, developed by the Swedish Environmental Protection Agency, covers different themes ranging from a description of the Structural Fund system to International regulations about sustainable development, from the “SEA as a tool that can provide the programmes with an environmental profile” to “a substantial section on good examples of environmental integration [...]”. Balfors and Schmidtbauer (2002) argue that “to achieve a successful implementation of the guidelines, supporting strategies may be needed” which consist, for example, in educational strategies. Diamantini and Geneletti (2004) analyze implementation of SEA in the Autonomous Province of Trento (APT), Italy, where “guidelines to carry out the environmental report [...] were issued and experimentally applied to several sectoral plans”, emphasizing both the positive aspects and shortcomings affecting the guidelines and their application. To check how the guidelines were applied in practice, the APT’s Mobility Plan was used. According to the authors, a major concern in SEA implementation of a sector plan is the absence of references to a sustainability framework, because that SEA might just be restricted to “a limited subset of environmental issues and indicators, disregarding the synergies and cumulative impacts of concurrent plans”. Sheate et al. (2004) provide an overview on the implementation of the SEA Directive in the UK with respect to three key issues: legal framework, plans and programmes interested, and the provision of support to practice, like guidance. Sheate et al. (2004, 77) list a number of SEA guidance documents in some sectors, and acknowledge that: “[a] key challenge for implementation in practice will be in providing guidance and training appropriate to different sectors, which have their own different traditions, expertise and experience (or not) of strategic forms of assessment”.

Brooke et al. (2004) develop on how SEA effectiveness can be maximized in South West England, where some experience has already been gained in the context of both environmental impact assessment (EIA) at project level and sustainability appraisal of regional and local land-use plans. Brooke et al. (2004, 142) points out that it is need to think in different terms than the project EIA, in order to consider the strategic aspects typically related to plans and programmes, adding that “[i]t is likely that different methods will be useful for different types of plan and this will need consideration in any guidance issued on methods for SEA”.

Other authors have analyzed SEA guidelines in different sectors, in the European and international context. Donnelly et al. (1998) provide a summary on Impact Assessment Guidelines, by including a range of evaluation procedures: EIA, cumulative effects assessment, environmental health impact assessment, risk assessment, social impact assessment, and SEA. Donnelly et al. (1998) overall cite “[...] over 800 bibliographic references and abstracts for more than 90 countries and 45 international development agencies”. Thérivel et al. (2004) discuss guidance documents drawn up in some countries (as England, Iceland, Scotland, and so on) and highlights specific unresolved issues regarding: i) the application to other types of plans and programmes; ii) consultation; iii) and resourcing SEA, given that SEA practice requires considerable financial and human resources and a lack of them can affect the practical application of the recommendations proposed by the guidelines. Fischer (2007, 109) identifies and reviews over 40 guidelines. Finally, Schijf (2011) lists a number of considerations, suggestions and tips, mainly based on practical experience and opinions of SEA professionals involved in drafting of SEA guidelines, to design and draft guidance documents of good quality.

3 CLASSIFYING GUIDELINES: A METHODOLOGY

Our literature review has found few studies about drawing up effective SEA guidelines. We have selected the classification criteria as reported in Table 1.
The first criterion (A) is relevant in guidelines which refer to SEA implementation in given sectors or contexts. Some authors argue this criterion regards SEA guidelines that are too generic and do not take into account the hierarchical (policy, plan, or program) level (Schijf 2011) or sector of SEA implementation (Brooke et al. 2004; Sheate et al. 2004; Thérivel 2004; Schijf 2011). The second criterion (B1) concerns periodic updating of SEA guidelines to adapt to changes over time of the local context and “follow the evolution of planning and SEA experience within a given system” (Schijf 2011). The third criterion (B2) takes into account if real case studies have been included in SEA guidelines, as they “make SEA process more tangible […]” (Schijf 2011), and provide lessons for practice. Another useful criterion (B3) attains the availability of SEA guidelines on the World-Wide-Web such as in the case of, for example, the Hong Kong SEA Manual (Hong Kong 2007; Schijf 2011). Finally, Schijf (2011) considers the length (number of pages) of SEA guidelines, because those guidelines particularly long may be unattractive and tiring to read (see Tab. 3). However, this element may be assessed as too subjective, in our view, given that too brief SEA guidelines may provide poor guidance or it could be inefficiently structured; therefore, we decided to consider it separately with respect to the other key elements.

4 APPLICATION TO A SELECTION OF SEA GUIDELINES

In this section we apply the classification presented in section 3 to the analysis of a sample of SEA guidelines. The arguments unfold in two subsections as follows. We first define and illustrate the sample and indicate some preliminary features of SEA guidelines selected, with respect to implementation level, length of the document, and application of copyright policies. In the second subsection, we report on the classification of the sample.

4.1 DEFINING THE SAMPLE

We selected a number of SEA guidelines in the period between September to December 2013. We have investigated and retrieved SEA guidance documents at the international level, by using Google search engine and keywords in different languages: “linee guida valutazione ambientale strategica [+ Country’s name]”, “strategic environmental assessment guideline [+ Country’s name]”, “strategic environmental assessment guidance [+ Country’s name]”, “guía de evaluación ambiental estratégica [+ Country’s name]”, or other similar combinations.

After a first screening, we have identified 22 guidelines that concerns general SEA issues. We used a selection filter which included documents obeying four criteria: i) issued by a EU member state; ii) accessible on-line for free; iii) written up in English or Italian; iv) approved after the publication of (and coherent to) the SEA Directive. The seven documents meeting these filters have been released by the following countries: Ireland (2004), Italy (Formez 2006), Latvia (2007), Portugal (2012), Scotland (2013), Sweden (2010), and the UK (2005). Some countries, such as Italy and Portugal, have inserted SEA Directive principles in the
national juridical system well after the expected deadline (June 2004). Fig. 1 shows the localization of the countries, whose SEA guidelines were included in the first screening (in light grey) and finally selected (in dark grey). The guidance documents selected are described in Tab. 2.

![Fig. 1 Localization of the countries issuing SEA guidelines included in the first screening (part A) and finally selected (part B)](image)

In most cases, SEA guidelines attain different hierarchical levels, but mostly regard the preparation of plans and programmes. Portugal’s SEA guidelines take into account the policy level. Sweden and the UK have longer (with more pages) guidelines with respect to the other states. Three guidelines (Italy, Latvia, and Portugal) do not report information about copyrights (see Tab. 3).

In the next section, we present the first results of a comparative analysis of the documents selected.
### EU STATE  | DESCRIPTION  | PUBLICATION YEAR | NATIONAL SEA REGULATION  | ADOPTION YEAR  
--- | --- | --- | --- | ---  
Italy  | La Valutazione Ambientale Strategica dei Piani urbanistici e territoriali [Strategic Environmental Assessment of Urban and Regional Plans]  | 2006  | Environmental Code  | 2006  
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  

Tab. 2  SEA guidelines in the juridical context (after Fischer 2007)

### EU STATE  | LEVEL  | LENGTH (N. PAGES)  | COPYRIGHT  
--- | --- | --- | ---  
Ireland  | Plans  | 97  | yes  
Italy  | Plans  | 36  | no  
Latvia  | Plans and programmes  | 68  | no  
Portugal  | Policies, plans and programmes  | 76  | no  
Scotland  | Plans  | 51  | yes  
Sweden  | Plans and programmes  | 142  | yes  
UK  | Plans and programmes  | 110  | yes  

Tab. 3 SEA guidelines: level, length and copyright

### 4.2 RESULTS

The review of SEA guidelines with respect to the general criteria presented in Tab. 1 is now presented in Tab. 4.

Only the Italian SEA guidelines have been designed for a specific sector, i.e. land-use and town planning. In addition, SEA guidelines published by the UK refer to further guidance documents (partly not available online) relating, for example, to transport land use and spatial plans (UK, 2005).
The other SEA guidelines are generic, as they have not been prepared for a specific sector. SEA guidelines are not updated regularly in all cases and the oldest ones date back to ten years ago. Only four SEA guidelines refer explicitly to real case studies, even though their description is not complete; Irish SEA guidelines report references to SEA-type assessment cases. Finally, all guidelines are available on-line in PDF format. Since some guidelines have not been updated for several years, some hyperlinks lead to off-line Web resources.

5 DISCUSSIONS

In this section, we discuss the results obtained in the previous section. Italy has recently incorporated the principles of the European Directive in its legislative system. This has caused some delay in SEA implementation within spatial planning systems, both at provincial and municipal level (De Montis 2013; De Montis et al. 2013). Public bodies at the provincial and municipal level have prepared SEAs without certain regulations. Sometimes Italian Regions, such as Emilia-Romagna and Lombardy, have adopted specific local regulations inspired to the Directive (De Montis 2013).

Both the UK and Swedish guidelines are quite long (bearing more than 100 pages). However, we do not measure the quality of guidelines by length as long documents may get little consideration. Attention should be paid to this aspect of SEA guidelines; in addition, a good idea to draw up SEA guidelines is to consider pre-existing material, paying attention to possible copyright issues (Schijf 2011, 491, 494). In our case study, three guidelines do not explicitly refer to copyright.

In general, SEA guidelines are intended to cover various hierarchical levels (from plans to programs) or sectors (land-use, mobility, and so on). Italian guidelines are specific for spatial planning at the municipal level, but they have the limitation that they are not related to the regulations issued in 2006, 2008, and 2010 about the integration of the SEA Directive in the Italian juridical system.

In general we have observed that Guidelines are not regularly updated. Portugal and Scotland have released SEA guidelines rather recently. Late updating may result in: i) the failure to introduce the contents of new regulations, as in the case of the Italian guidelines, and ii) the plight of links to other resources on-line which now are no longer available. In both the cases, the usefulness and reliability of the guidelines is negatively affected.

SEA guidelines include some case studies in quite a useful way, as they help designers in identifying the most effective solutions. Sometimes real case studies are replaced with theoretical examples that help to select the most adapt actions with respect to a particular stage of the SEA process (see, for example, guidelines of Sweden).
Finally, the publication on the Web of the SEA guidelines is a useful option, since it allows an easy and efficient use of those documents and presents other strengths: direct links to external resources, rapid consultation, easy updating, and SEA guidelines available in PDF format are easily printable, becoming available at any time and place and for any individual.

6 CONCLUSIONS

In this paper we analyze the SEA guidelines designed by some EU member states. We have selected seven SEA guidelines following four criteria: i) issued by a EU State; ii) the last freely accessible on-line; iii) written in English or Italian; and iv) drafted after the publication of the SEA Directive and explicitly referring to it.

The guidelines selected have been analyzed with respect to some classification criteria identified in the SEA literature. No SEA guidelines satisfy all these criteria. In general, we have not found a clear prevalence of a guideline over the others.

This analysis is the starting point of further studies on SEA guidelines aiming at: i) enlarging the sample set of guidelines; ii) reporting on specific spatial planning and land-use SEA guidelines; and iii) calibrating evaluation criteria connected to finer SEA implementation issues.

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Fig. 1: Picture created by Antonio Ledda; source of dataset: the World Borders Dataset provided by Bjorn Sandvik (thematicmapping.org). The dataset is available under the Creative Commons Attribution-Share Alike License (CC BY-SA 3.0).

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