Implementing sustainability through strategic environmental assessment: indications from the experience of the Autonomous Province of Trento, Italy

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Abstract

Three different approaches to Strategic Environmental Assessment (SEA) can be identified in current practices. The first one considers SEA as a mere extension of Environmental Impact Assessment to policies, programmes, and plans (PPP). The second approach assigns to SEA the task of incorporating environmental concerns 

during 
the drawing up of PPP. Finally, the third approach places the procedure of SEA in the context of the emerging policies aimed at promoting sustainability. This contribution addresses this last approach by describing the on-going experience of the Autonomous Province of Trento, in northern Italy. Firstly, the paper addresses the process through which the local government has built-up a strategy for sustainable development. Afterwards, it presents the way in which this strategy is being used as a reference to assess strategic choices, such as the writing and approval of PPP. This assessment required the selection, the measurement and the forecast of a set of suitable criteria and indicators referred to both environmental and socio-economic issues. The effectiveness of the approach is discussed by illustrating three fields of application: urban planning, water-resource management, and mining-activity regulation. A general conclusion is that SEA can offer a relevant contribution in the “path toward sustainability”, especially where the public administration has to play a key role in orienting environmental decision making, due to the ineffectiveness of public-participation mechanisms.
1 Introduction: approaches to SEA

In our opinion, three different approaches to Strategic Environmental Assessment (SEA) can be identified in current practices. The first one considers SEA as an extension of Environmental Impact Assessment to policies, programmes, and plans (PPP). This means that SEA is carried out only after PPP have been designed, in order to test their environmental consequences. This approach has been envisaged by part of the earliest literature on SEA [1, 2, 3, 4].

The second approach assigns to SEA the task of incorporating environmental concerns during the drawing up of PPP. Therefore, SEA is fully integrated into the making of every PPP. This approach has been supported by the European Union [5, 6], and it is provided for by the “SEA Directive” (Directive 2001/42/EC), according to which the environmental assessment “is an important tool for integrating environmental considerations into the preparations and adoption of certain plans and programmes”. Article 3 of the SEA Directive requires the environmental assessment to be carried out during the preparation of PPP and before its adoption.

Finally, the third approach places the procedure of SEA in the context of the emerging policies aimed at promoting sustainability. That is, SEA is seen as one of the fundamental tools to orient all human activities toward a sustainable development. In this approach, the main role of SEA is to shape the most critical environmental issues, and to explicitly face them by setting quality targets, as well as paths to achieve them. From an operational standpoint, this implies the use of a wealth of indicators that have been proposed in the literature. Such indicators have been scarcely applied so far due to the lack of a “strategy” (or “value system”) that could orient the drawing of plans and programmes. From this perspective, SEA is very similar to some approaches informally adopted in land-use planning until recently [7].

2 SEA in a sustainability perspective

A strategic evaluation is only feasible having a strategy at disposal, able to support the evaluation procedure by means of a holistic and long-term vision, to which transformation processes can be referred. Within the strategic environmental assessment procedure, introduced by the Directive 2001/42/EC to assess the effects of certain plans and programmes on the environment, this strategy is quite unequivocal and is given by the principle of sustainability.

This is the meaning of the reference to art. 6 of the Treaty, to the Fifth Environment Action Programme (“Towards sustainability”), and to the Convention on Biological Diversity. Reference which becomes an explicit indication by saying that the objective of the Directive is “to provide for a high level of protection of the environment and to contribute to the integration of
environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.”

Moreover, the list of issues to be considered in evaluating the environmental effects of plans and programmes (included in Annex I), support the reference to the sustainability of development, by emphasising the biodiversity and the climatic factors. As a matter of fact, the progressive reduction of biodiversity and the climate change, are included among the three main environmental emergencies indicated by the Rio de Janeiro Conference in 1992 [8]. These emergencies raise a wholly new attention to issues like the greenhouse gas emissions and the loss of the ecosystems functionality; issues that before have been often neglected by the same environmental assessment practices of impacts of private and public projects.

Analogously, the reference to the principle of efficiency in the use of renewable and not renewable resources, included in Art. 174 of the Treaty, rouses an entirely new attention to the way in which vital resources, such as water, are used through different human practices. These resources have been often neglected, may be for the only reason of being public.

The reference to the sustainability of the development gives to the evaluation practices, and particularly to the assessment of the effects of certain plans and programmes on the environment, a completely new task. That is, to concur to drive choices, which involve spatial organization, use of resources and environmental quality, towards sustainability. In other words, the evaluation procedure, which used to be a merely corrective (re-active) practice to adjust or mitigate project choices, becomes also a pro-active practice to promote sustainable development.

This raises some issues, such as how to overcome a common vision of SEA as a mere extension of EIA to plans and programmes. This vision has been strengthened and legitimated by emphasizing, opportunistically, the fact that strategic evaluation allows to consider impacts previously ignored by EIA [1, 2, 3, 4], such as:

- Impacts caused by the cumulating actions not subjected to environmental impact assessment procedures;
- Impacts caused by processes started by an action which does not involve, by itself, any significant modification of the environment;
- Cumulative impacts of many actions, each one of them does not involve, by itself, any significant modification of the environment.

Even considering the added value of this approach vis-à-vis traditional evaluation practices, it is matter of recognizing its limits, considering the goal of undertaking plans and programmes assuming the point of view of sustainability.

A second and more complex issue concerns the necessity to support the practices of SEA by more detailed tools than the ones provided by a vague reference to the sustainability principle. In other words, the European Directive on the assessment of the effects of certain plans and programmes on the environment limits itself, as far as sustainability of the development is
concerned, to proclaiming principles, just strengthened by a reference to the issues which have to be considered in the drawing up of the Environmental report [5, 6]. Not accidentally in the same Directive it is perceived the necessity of providing to the evaluation procedures “a more consistent framework in which to operate by the inclusion of the relevant environmental information into decision making.”

However, due to the fact that sustainability criteria often face processes that cannot be relegated to national contexts, it is not clear how the reference framework could be build without a common effort between European Institutions, Member States, and Regions. Such an effort must identify, together with a reasoned list of transboundary issues, also a set of key indicators, capable to represent the most problematical processes, as well as to provide their dimension and to measure the efficiency of the actions.

Finally, a third issue concerns the receptivity of the contexts in which the SEA Directive should be accepted and should operate. This is addressed in the remaining of the paper by referring to the Italian case.

3 Critical interactions between SEA and sustainability choices

The receptivity of individual contexts refers to the state of initiatives linked to sustainable development started by those administrations that are involved in evaluating the effects of certain plans and programmes on the environment. The sustainability paths that started by European Countries appear quite heterogeneous in terms of both the operational measures implemented by the different governments, and the advancement state of current experiences. In any case, more than to national contexts, attention should be given to regions. This is because in many countries the regional administrations are the ones that define their own objectives and paths of development. Furthermore, most frequently, regions represent the authorities that receive European funds for development.

In Italy, regional initiatives linked to sustainable development do not appear homogeneous. It has to be pointed out that sustainability paths started in Italy later than in other European countries. At the beginning, such paths are represented by Local Agenda 21 (LA21). These LA21s were promoted by subjects that operate within some local public administrations, which immediately assumed a guiding role, stimulating imitative behaviours, and providing for a diffusion of sustainability practices in the whole country. In any case, currently, LA21s do not appear equally distributed, as far as regions are concerned [9, 10, 11].

Regional administrations started-up only afterwards, showing two different behaviours. On the one hand, some of them have promoted initiatives for the sustainability of the development, which aim at involving in some way regional politics as a whole. On the other hand, the majority of regions have limited their initiatives linked to sustainable development to the use of the European structural funds. However, it has to be said that for many regions, and in
particular for the southern ones, the policies of investment linked to European structural funds coincide tout-court with the development policies.

Regional initiatives linked to sustainable development, due to for their relatively recent history, are carried out in absence of reference frameworks right for the purpose of making explicit, throughout the resort to technical and scientific information, the environmental sustainability degree of the local development, and consequently the problems to which pay more attention. As a result, the evaluation of plans and programmes, even if linked to structural funds, is based above all on financial and economical indicators. The prevalence of economic dimension in evaluation practices is confirmed also by the structure of Evaluation Unit of the Ministry of Treasury, which supports Ministry, regions and local administration in evaluating public policies, including structural funds. Thirty members, in large majority economists, make up this Unit.

It has to be added that in many administrations, not only at regional level, planning is still seen as a practice aimed at solving a specific set of problems, in absence of any consideration to the interactions among these problems. As a result, plans and programmes are subjected to a sectoral vision, and they scarcely interact between themselves. Furthermore, in many cases plans and programmes that refer to different topics (e.g., transportation network and landscape planning), end up by contrasting each other. This reveals, besides the lack of a common strategy, a scarce mutual interest.

Concluding, in many cases the programming and planning activities occur in absence of a unitary strategy tout-court. Consequently, for some administrations, facing all at once a complex task like building a regional strategy for sustainable development involves not only political capacities, but also a new cooperation among institutional levels [12]. In this context, appear particularly relevant those experiences that, going somehow against the main stream, can be considered emblematic in a perspective of a change, which is not only behavioural but also cultural. Among them it has to be mentioned the experience undertaken in Trentino.

4 The experience of the Autonomous Province of Trento

The Autonomous Province of Trento (PAT) is located in northern Italy and lay on the southern side of the Alps. A special autonomy Statute gives the PAT a number of competencies in a wide range of sectors, including environmental matters. Owing to this autonomy, the PAT boasts important achievement in territorial planning, such as:

- The first territorial plan drawn up at regional level in Italy,
- The first environmentally-oriented territorial plan drawn up at a regional level in Italy,
- The first Italian law on EIA (August 1988).

Furthermore, in the last years the PAT has taken two important steps in the attempt to link SEA and sustainable development.
First of all, in summer 2000 the Provincial Council approved an Act on sustainable development [13]. Subsequently, in 2001 the Council adopted the Project for sustainable development, which was drawn by the Department of Civil and Environmental Engineering of the University of Trento, in cooperation with the Provincial Agency for Environmental Protection [14, 15, 16]. These two events are strictly linked in that the Act referred the identification of suitable sustainability objectives and indicators to the Project. Furthermore, the Act explicitly considered the procedure of SEA as a fundamental tool to implement local sustainable development. This is remarkable because, first time in Italy, sustainability indicators are to play a role in a relevant institutional procedure, such as SEA. How this is going to take place in practice will be defined by the Provincial legislation on SEA, which has not been promulgated yet.

The first step taken by the PAT in this direction consisted in drafting specific guidelines to carry out the environmental report, which represents the main document to be generated during the SEA procedure. According to Article 5 of the SEA Directive, the environmental report must identify, describe and evaluate the likely effects on the environment of implementing the plan or programme. The PAT issued a set of guidelines for different sectoral plans, such as the Water Management Plan, the Waste Management Plan, the Mobility Plan, and the Mining Activity Plan. The aim of such guidelines is to support the integration of environmental concerns into the drawing of these sectoral plans, so as to start “practising” within sight of the structured SEA to be introduced by law.

The guidelines state from the very beginning that the Project for sustainable development represents the main reference for carrying out the environmental report. In particular, the indicators to be used during the assessment should be selected among those proposed and explored in the Project. These indicators follow in part the framework resulting from the Project, and in part the Pressure-State-Response (PSR) framework [17], which is now widely applied.

After having defined the set of indicators, the guidelines recommend to study existing data and measurements of such indicators (e.g., time series), so as to set specific targets to be met within the time frame of the plan. Furthermore, the consideration of past and current values of the indicators is to support a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis, which must be carried out in terms of achievement of sustainability objectives. That is, strengths, weaknesses, opportunities and threats are to be referred to the contribution of the plan toward the promotion of sustainable development.

Another interesting element contained in the guidelines is the evaluation of the objectives of the plan. The guidelines suggest to set objectives (e.g., for the Water Management Plan an objective could be the maintenance of the minimum instream flow requirements), and to assess the degree of achievement of such objectives by means of the following criteria:

- Coherence within the planning hierarchic levels;
- Co-operation between development authorities and environmental authorities, so as to explicit the trade-off that took place between environmental capital and socio-economic capital;
- Coherence between the plan and the indications provided by International Organizations and the EU (e.g., proposal and conventions on environmental protection);
- Coherence with the following key-principles of sustainability: systemic approach, long-term appraisal, social equity, efficient use of resources, and ecological sustainability.

Furthermore, the guidelines recommend to assess and compare alternative strategies, i.e., alternative plan or programmes. Such alternatives must be analysed with respect to their contribution to the promotion of sustainable development, taking into account also the uncertainty factors that characterise their different aspects.

Concluding, although the guidelines for the environmental report are still quite generic, they show the willingness of the PAT to place the SEA procedure in the framework of sustainability policies and to experience it in sectoral planning, paving the way to the proposal of an effective SEA legislation.

5 A final note: the EIA-SEA tiered system

New evaluation frameworks aimed at integrating SEA with sustainability objectives should not leave out the procedure of EIA. SEA is not meant to replace EIA, rather to complement it. This allows a suitable consideration of environmental impacts at every level of the planning process: from general policies down to single projects (Figure 1). Consequently, EIA and SEA need to be coordinated with each other within a tiered system: each level of the planning process is to generate an environmental assessment that will be taken into account by each subsequent level [18]. The implementation of such a tiered system is still in its infancy. It is felt that for making it fully operational two aspects have to be improved. On the one hand, it is necessary to test sound methodologies to perform SEA and to integrate it with sustainability objectives, as described previously in the paper. On the other hand, EIA has to adapt to this new framework of tools for environmental assessment [19], as discussed next.

EIA is to enhance its role as fundamental assessment procedure at a project level, by dealing with those issues that are too detailed to be tackled by SEA. On the other hand, the presence of SEA is to lighten the burden of EIA, making some of its typical analyses redundant. Being strategic decisions handled by SEA studies, EIA shall not discuss them anymore. Let us consider an example: the construction of a highway for improving the mobility within a region. In the pre-SEA era, an EIS concerning such a project, in principle, had also to justify the choice of the road as preferred solution to the problem. In the presence of SEA, this task is to be completed by, say, a strategic infrastructure plan of the region, which is also to identify possible alternative corridors to host the
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project. Consequently, EIA can focus on the evaluation of such alternatives and the selection of the most suitable one.

Future EIA is to improve the treatment of project-level key issues, such as the evaluation of different alternatives and the proposal of mitigation measures. The adequate assessment of different project alternatives, in particular, represented one of the main limitations of past EIA practice [20, 21]. This limitation can be overcome by the coupled EIA-SEA system because only similar alternatives are to be compared and evaluated during EIA (e.g., a set of road alignments). As a matter of fact, the selection among radically different alternatives (e.g., highway, railway or traffic operation measures?) is to be made earlier by SEA. Focusing on alternatives with similar characteristics simplifies the analysis (e.g., similar types of data need to be collected). Consequently, EIA can dwell on improving the reliability of such analyses and on generating more comprehensive comparisons of alternatives and frameworks for decision.

Concluding, the establishment of SEA should not shade the role of EIA, but rather should be used as a chance to improve EIA’s effectiveness in solving important project-level issues.

Figure 1: Relationship between sustainability indicators, SEA and EIA.

References


