

SEA AND SIA - TWO PARTICIPATIVE ASSESSMENT TOOLS FOR SUSTAINABILITY

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1 Introduction

To start with, I will first answer the basic questions:

- What is SEA (Strategic Environmental Assessment)?
- What is SIA (Sustainability Impact Assessment¹)?
- What are their common features and their differences?

Then I will go on highlighting the development of SEA and SIA especially in Austria, including a short description and evaluation of some Austrian case studies.

In the third part of my paper I will try to give some answers how to tackle one of the main threats of SIA, namely that environmental aspects are traded-off against "stronger" socio-economic issues.

Finally I will come to some personal conclusions and recommendations for further development and application of SIA.

2 SEA and SIA - definitions, common features and differences

For SEA at least 10 definitions are to be found in literature. In this context I will stick to the definition given by Sheate, W. et al. (2001)²:

"SEA is a systematic, decision aiding procedure for evaluating the likely significant environmental effects of options throughout the policy, plan or programme development process, beginning at the earliest opportunity, including a written report and the involvement of the public throughout the process."

Following the definitions of DETR (2000³), Verheem, R. (2002⁴) and Clive, G. (2002⁵) SIA may be defined as systematic and iterative process for the ex-ante assessment of the likely economic, social and environmental impacts of policies, plans, programmes and strategic projects, which is undertaken during the preparation of them and where the stakeholders concerned participate pro-actively. The main aim is to improve the performance of the strategies by enhancing positive effects, mitigating negative ones and avoiding that negative impacts are transferred to future generations.

However, as some countries use a more holistic definition of the environment, including the bio-physical, the social and the economic environment (e.g. Sweden, where SEA encompasses all the three aspects), the definitions are not always so sharp as it seems.

¹ SIA is also known as integrated impact assessment, sustainability assessment or sustainability appraisal.

² Sheate, W. et al. (2001): SEA and Integration of the Environment into Strategic Decision-Making, Volume 1 (Main Report), London.

³ Department of Environment, Transport and the Resource (DETR) (2000): Good Practice Guide on Sustainability Appraisal of Regional Planning Guidance, <http://www.planning.odpm.gov.uk/gpgsarp/index.htm>; 2.4.03;

⁴ Verheem, R. (2002): Recommendations for Sustainability Appraisal in the Netherlands; paper submitted at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.

⁵ Clive, G. (2002): Applications of Sustainability Evaluation at the National and International Strategic Policy Level; paper submitted at the EASY-ECO Evaluation of Sustainability EuroConference 23-25 May, Vienna.

Coming to the common features of SEA and SIA:

Both are

- decision aiding instruments, helping the decision makers to take more sustainable decisions
- participative processes, involving the public concerned or interested during the preparation of the strategies⁶
- integrated into the development process of the strategies, in order to optimise the solution interactively during its preparation
- processes consisting of certain elements, not only scientific studies or written reports.

But there are also differences between SEA and SIA, concerning their focus, their legal status, their level of application and also their threats. The following tables gives an overview.

Table 1: Differences between SEA and SIA

SEA - Strategic Environmental Assessment	SIA - Sustainability Impact Assessment
Focus ⁷	
Seeks to raise the profile of environmental considerations in decision-making concerning policies, plans and programmes	Aims to support the decision-making process with respect to all three aspects of sustainable development (environmental, social and economic issues), remains equal weighted with respect to the interests at stake
Legal status in Austria	
Legal basis at the level of the European Community (SEA Directive ⁸) for certain plans and programmes at the member state level, the directive has to be implemented by the member states until July 21, 2004 at latest	No legal requirements ⁹
Level of application	
For plans and programmes with likely significant impacts on the environment (requirement of SEA Directive) Also for policies with environmental impacts Never used for single projects	No restrictions in the level of application Mostly used for policies, plans and programmes and for large scale projects of a strategic nature
Threats	
May be regarded as incomplete if social and economic effects are not addressed at all More difficult to develop equal weighted planning solutions if only environmental aspects are taken into consideration	Weaker environmental arguments might be traded-off against stronger socio-economic issues, which may "capture" the appraisal as dominant forces

⁶ In this article the terminus "strategies" includes policies, legislation, plans, programmes and large scale strategic projects.

⁷ s. Smith, S. P. / Sheate, W. R. (2001): Sustainability appraisal of English regional plans: incorporating the requirements of the EU Strategic Environmental Assessment Directive, in: Impact Assessment and Project Appraisal, volume 19, number 4, December 2001, pages 263-276.

⁸ Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment

⁹ The Austrian Federal Ministry for Agriculture and Forestry, Environment and Water Management is carrying out a study providing an overview about the status quo of SIA in Europe and in some other countries worldwide. Possibilities of how to use SIA at the level of policy and legislation in Austria will also be examined.

3 Development of SEA and SIA in Austria

The real starting point of the development of all impact assessment tools in Austria was the Austrian EIA law, which entered into force in 1994. Since then up to March 2003, about 72 EIAs for projects were carried out. Soon the experiences proved that EIA at the project level, the last planning level, could not avoid negative impacts of decisions taken at higher, more strategic planning levels.

In 1997, shortly after the release of the draft of the SEA Directive by the European Commission, the first SEA pilot projects were launched. Up to now there are 7 SEAs in Austria:

- three in land-use planning, both at the local and at the regional level:
 - SEA of the land-use plan Weiz (a town in Styria) - finished
 - SEA of the regional development programme of Tennengau (a region in Salzburg) - finished
 - SEA of the regional development plan along the Danube in Lower Austria - finished
- two in the waste management sector
 - SEA of the Viennese waste management plan - finished
 - SEA of the waste management plan of Salzburg - running
- one in the transport sector
 - SEA of the Danube corridor - finished
- one, integrating transport and land-use issues
 - SEA of urban and traffic development of the North-East of Vienna - nearly finished

The "younger" SEAs, namely the SEA of the Viennese waste management plan, the SEA of urban and traffic development of the North-East of Vienna and the SEA of the waste management plan of Salzburg start to consider social and economic effects complementing the environmental assessment. There are indicators for all of the three issues and in the end a verbal interpretation tries to give the integrating overview. Though the focus of these SEAs lies on achieving environmental goals and on the assessment of environmental impacts, they can be regarded as the first starting point of the development of SIA in Austria. It is clear that it needs further methodological development, especially concerning sustainability indicators, but the first approaches raise hope that these challenges can be tackled.

Assessing the effectiveness of the Austrian SEAs it can be stated that in general these "younger" ones seem to be more effective in integrating environmental aspects into the final plan or programme¹⁰.

Reasons for their effectiveness can be:

- the complete **integration of the planning process and the SEA process** to one common procedure, which allows continuous interaction between planning and assessment and due to this the iterative optimisation of the planning solution; This integration of planning and SEA can be regarded as a starting point to tackle one of the main challenges of all assessment procedures, namely that the results of the assessment are really taken into account in the final planning decision.
- the **pro-active participation of interest groups** during the whole process
Thus, in Vienna the model of **SEA Round Table** was developed. This means that an SEA team consisting of members of the authorities (planning authority, environmental authority), representatives of the interest groups concerned (environmental NGOs, chambers, politicians) and external planning experts are carrying out the SEA together from start to finish. They are all together responsible for the SEA results and the proposed planning solution as the main outcome of the common process. This

¹⁰ Arbter, K. (2002): Strategische Umweltprüfung (SUP) in der österreichischen Planungspraxis – SEA in the Austrian planning practice; dissertation at the Institute of Open-Space Design and Landscape Management of the University of Agricultural Sciences, Vienna.

setting allows the public representatives to influence the outcome more effectively. Public concerns can be genuinely taken into account. This in turn can create public acceptance of the planning solution. Furthermore the SEA Round Table promotes that the plan/programme is enriched by the diversity of inputs and the solution is checked from different view points. The participants can develop a solution on the basis of consensus, which has a much better chance of being implemented without discord and delay.

- the equal weighted **consideration of environmental, social and economic impacts** within the impact assessment, which allows to develop a comprehensive and long-term planning solution.

This shifting from SEA to more comprehensive SIA seems to take part all over the world, for example also

- in the UK, where SEA methodologies have tended to develop into Sustainability Appraisal (SA) methods. SA is now required of each development plan (s. Carroll, B., 2002¹¹),
- in the Netherlands, where assessment methods have gradually evolved from environmental impact analysis towards sustainability analysis covering ecological, social, economic and institutional dimensions (s. Langeweg, F., 2002¹²) and
- in Canada, where SEA also tends to shift to the more comprehensive SIA (s. Follen, G. and Thoms, R., 2002¹³).

At the International Association for Impact Assessment (IAIA) Annual Conference from 15-22 June 2002 in The Hague it was stated that "sustainability assessment is widely regarded as the next generation of SEA" (s. Fuller, K., 2002¹⁴).

Reasons for this development can be:

- the need to face the **inter-dependency of effects** in carrying out the assessment, since environmental effects often can not be assessed properly neglecting the interconnection with social and economic aspects, especially at higher strategic levels where causal chain analyses are used to clarify the likely effects of strategies on the environment
- the more pro-active **participation of interest groups** in the assessment process, requiring the participation of representatives of social, economic and environmental issues; The participation of environmental NGOs in environment related planning decisions is one of the main achievements of SEA. However, it is regarded as incomplete and not representing all social interests, if only representatives of environmental interests are participating within SEA.
- the recognition, that **good decisions** in the long term must incorporate each of the three aspects of sustainability and - last-but-not-least -
- world-wide political initiatives to elaborate **sustainability strategies**, which often stress the requirement of appropriate assessment tools for environmental, social and economic consequences of actions.

¹¹ Carroll, B. (2002): Sustainability Threshold Assessment: A Technique to inform Development Planning; paper submitted at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.

¹² Langeweg, F. (2002): Moving from environmental analysis to sustainability analysis; from project to strategic level; paper submitted at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.

¹³ Follen, G. / Thoms, R. (2002): SEA and Sustainable Development at Environment Canada; paper submitted at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.

¹⁴ Fuller, K. (2002): Summarising Paper of the Workshop Nr. 9 - Sustainability Impact Assessment at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.

It can be assumed, that SIA will gain more importance in the future also in Austria. As positive this development might be, there are also challenges which have to be tackled, above all the threat that "weaker" environmental arguments are traded-off against "stronger" socio-economic issues. But SIA will only be effective in promoting long-term and high quality strategies, if environmental issues are not overshadowed by economic and social considerations. The key success factor is to keep SIA equal weighted.

4 How to make SIA equal weighted

In developing SIA, the challenge is that environmental aspects are really taken into account equally like social and economic aspects. There are two starting points to promote equal weighting of all three aspects within SIA, namely the design of the **SIA-process** and the **contents of the assessment** itself.

4.1 Design of SIA-processes

Four key factors related to the assessment process can promote that environmental affairs gain the same importance like social and economic issues. These are the

- pro-active participation of the interest groups concerned,
- transparency within the whole process,
- justification of trade-offs and
- up-grading of monitoring.

4.1.1 Pro-active participation of the interest groups concerned

"Sustainable development can hardly be achieved without stakeholder involvement in the impact assessment process." (IAIA, 2002¹⁵). This statement of the International Association of Impact Assessment underlines clearly the importance of stakeholder participation in preparing sustainable strategies. But the crucial point is, how stakeholder participation is carried out. Access to information and the right of consultations are guaranteed by the SEA-Directive, at least after the draft of the plan/programme and the environmental report have been prepared. But these basic forms of participation often don't go far enough and they take place late in the assessment process.

What determines the success of participation is the degree of influence that stakeholders may have on the results of the assessment and, thus on the final decision making. Co-operative and mediative forms of involvement during the whole assessment process, as the before mentioned Round Table SEA of Vienna, seem to be more adequate. They foster broad co-operation and efficient reconciliation of environmental, social and economic interests in face-to-face negotiations. These pro-active forms of participation can support that all stakeholders bring in their interests effectively and that their concerns are not only heard but also taken into account equal weighted. Also the mutual understanding of different points of views can be promoted in round table assessment procedures. This however, requires that the adequate framework is ensured for all participants, especially for members of environmental NGOs or public initiatives, who might also need financial or other support for their honorary contributions.

As SEA and SIA both are decision aiding instruments, explicitly not replacing political decision-making, these participative assessment tools do not really cause a shift of power. They only open up the discussion before the political decision is taken and they make the planning process more democratic and transparent. They enable a common negotiation and

¹⁵ International Association for Impact Assessment (IAIA, 2002): The Linkages Between Impact Assessment and the Sustainable Development Agenda, and Recommendations for Actions - Statements and Policy Briefing for the World Summit on Sustainable Development, Fargo.

learning processes, which may lead to more consensual planning solutions considering environmental, social and economic aspects equal weighted. Thus the strategies gain greater acceptance and single measures can be implemented more efficiently, even if they are unpopular.

Also when stakeholders participate effectively, the participation of the broader public should not be neglected. They should at least be informed during the whole assessment process and there should be a well established link between the stakeholders involved and the public, whom they are representing. The public should have continuous access to their representatives in order to exchange information and opinions.

4.1.2 Transparency within the whole process

The second success factor for equal weighted SIA is transparency, both concerning the process itself and the contents of the assessment. For the process, the share of tasks and the influence of the participants must be clear. For the assessment, transparency in dealing with environmental, social and economic issues is necessary at all stages to keep SIA equal weighted: At the stage of defining the goals of the strategy it must be made clear wherefrom the goals are coming (e.g. from sustainability strategies) and how binding they are (political decisions, international binding agreements, scientific recommendations). If there exist conflicts amongst them, which is likely when environmental, social and economic goals are considered, these conflicts have to be made transparent either. At the stage of defining the alternatives to be assessed it must be clear, why certain alternatives are assessed and others not. It must be clearly explained, why a specific assessment method is chosen. The final conclusions and recommendations as result of the process also must be transparently argued. All assumptions and lack of data must be documented. The aim is to make all results and their values transparent for the public and policy level, so to say for everyone, who didn't take part in the SIA process. Thus, transparency fosters public and political confidence in the outcomes of SIA and this in turn, strengthens the influence of the assessment results on decision-making and sustainable decisions.

4.1.3 Justification of trade-offs

One of the main requirements that keeps SIA equal weighted is that any trade-offs of environmental, social and economic issues are explained properly. As trade-offs primarily are a political task, depending on political values, they should be ideally avoided in the SIA process itself. But in practice it is not always possible to carry out the SIA without any trade-offs and weighting between the environment, social and economic issues. It is hard to avoid any weighting, if recommendations for the one or other strategy is result of the assessment process. If trade-offs can not be avoided, they will at least have to be made explicit and transparent. If they are hidden and discovered afterwards, the whole results of the SIA can lose acceptance. But also at the stage when the political decision on the preferred strategy is taken and trade-offs are obviously made, they should be justified to gain acceptance.

4.1.4 Up-grading of monitoring

To keep SIA equal weighted, also the role of monitoring has to be strengthened. In many cases strategies consist of a complete package of measures, which includes measures to promote further economic development, measures to enhance the social standard of life and measures to protect the environment as our basis of life. Usually the implementation of economic measures is supported by strong lobbies, making profit from enhancement. Social measures which improve our living standard also partly develop in their proper dynamics. But environmental measures lack of strong lobbies or proper dynamics. Therefore their implementation has to be strengthened by consequent monitoring. Monitoring provisions shall make sure that all proposed measures are implemented with the same energy and success.

Thus, monitoring should not only focus on the effects of the implementation of the strategy, but also on the implementation of the proposed measures itself. It should also ensure that there are no further trade-offs when implementing the strategy, which would threaten the balance between environmental, social and economic issues.

4.2 Contents of the assessment

Beside the assessment process, also the content of the assessment can promote that SIA is carried out equal weighted. There are three process stages where all three aspects of sustainable development should be taken into account balanced in order to avoid undermining environmental aspects. These stages are:

- defining the goals and objectives
- defining the alternatives to be assessed
- defining the assessment method

4.2.1 Defining the goals and objectives

At this stage it has to be assured that the goals for all three aspects of sustainability are taken into consideration equally weighted. A strong link to sustainability strategies, where appropriate goals and objectives are already documented, is crucial. The status of goals, e.g. if they are binding or not, must be taken into account. At this stage probably the first conflicts amongst environmental, social and economic objectives will occur. These should be reconciled by participation of all relevant stakeholders as far as possible. Any trade-offs taking part at this early process stage have to be made explicit. If conflicts remain, they have to be documented clearly.

4.2.2 Defining the alternatives to be assessed

Also at the stage of defining the alternatives to be assessed attention has to be put on equal weighting. That means, that environmental, social and economic measures have to be considered equally within the alternatives. One approach to give them equal weight is to first design "key alternatives" as extreme options favouring one of the three sustainability aspects and to assess them. Second, the measures of these "key alternatives" could be mixed to "optimised alternatives" on the basis of the results of the first assessment. The "optimised alternatives" should try to meet the stated environmental, social and economic goals equally.

4.2.3 Defining the assessment method

The assessment method is another challenge of SIA in practise because the ultimate sustainability indicators have not been found yet. In most approaches social, environmental and economic effects are assessed separately via indicators. A verbal interpretation can then provide the necessary integrating overview. The development from SEA to SIA will also cause a development of new assessment methods. As in SIA the description of inter-dependence effects between environmental, social and economic issues becomes more important than the separate measurement of individual effects, more integrated assessment methods have to be developed. These should be able to document interconnections between the three aspects and to address cumulative and indirect impacts either. One of the possible methods are causal chain analyses. Thus, also the appropriate assessment method can foster the equal weighted consideration of environmental, social and economic effects.

5 Conclusions and recommendations

As stated before, SEA will probably develop to a more comprehensive SIA in future. If environmental, social and economic issues are taken into account equally in the assessment and development process, it is likely to reach more sustainable long-term strategies. But also

risks have to be faced concerning this development, especially that environmental issues again are traded-off against "stronger" socio-economic arguments.

Personally I think, that the success of SIA can be promoted by

- the obligation of carrying out SIAs at least at levels where no other assessments tool are foreseen (e.g. at the level of legislation and policies, which is not covered by the SEA Directive)
- the obligation that SIA's results are efficiently taken into account when the decision is taken; if decisions-makers can not follow the recommendations of SIA, they should at least give transparent reasons for their deviating decisions
- the establishment of broad awareness of sustainable development at public and policy level

To conclude with, I will now give some personal recommendations for the further development of SIA:

- **Give appropriate attention to the SIA process design and process management**
A well developed process design and a professional process management is half of the success of SIA. Thus, two key factors are crucial: First, the integration of the strategy development and the assessment process to one interacting process with a clear and logical order of SIA steps. Second, the pro-active and continuous participation of all relevant stakeholders during the whole process. It has to be well decided, who is participating, at which stages participation will take part, which degree of influence will be offered and which rights and duties have to be accepted by the participating persons. Broadly acceptable and high quality strategies are supported by co-operative and mediative participation models, which let stakeholders influence the SIA results pro-actively and which foster the reconciliation of environmental, social and economic interests.
- **Don't hesitate with SIA until the ultimate sustainability indicators are available**
For the first approaches also sectoral indicators for environmental, social and economic issues will do it, in connection with causal chain analyses and a comprehensive verbal interpretation considering the interconnections of the various effects. The lack of perfect sustainability indicators should not be the reason for delay in the development of SIA. As the development of SEA in Austria shows, it is always worth starting with experiments, knowing and accepting that they yet are not perfect. But this is better than waiting for the ultimate assessment method to be found, for this could take long and many strategic decisions are taken meanwhile – also without the profound information of SIA.
- **Promote further experience exchange**
As SIA is developing in many countries in parallel, we all could profit from experience exchange, both at the level of scientific developments and at the level of case studies from practice. Conferences like the EASY ECO Conference contribute very much to further experience exchange – therefore many thanks to the organisers of the conference and to Ursula Platzer from the Austrian Federal Ministry for Agriculture and Forestry, Environment and Water Management, who provided substantial input to this article!

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References:

- ARBTER, K. (2002): Strategische Umweltprüfung (SUP) in der österreichischen Planungspraxis; dissertation at the Institute of Open-Space Design and Landscape Management of the University of Agricultural Sciences, Vienna.
- Carroll, B. (2002): Sustainability Threshold Assessment: A Technique to inform Development Planning; paper submitted at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.
- CLIVE, G. (2002): Applications of Sustainability Evaluation at the National and International Strategic Policy Level; paper submitted at the EASY-ECO Evaluation of Sustainability EuroConference 23-25 May, Vienna.
- DEPARTMENT OF ENVIRONMENT, TRANSPORT AND THE RESOURCE (DETR) (2000): Good Practice Guide on Sustainability Appraisal of Regional Planning Guidance, <http://www.planning.odpm.gov.uk/gpgsarp/index.htm>; 2.4.03;
- FOLLEN, G. / THOMS, R. (2002): SEA and Sustainable Development at Environment Canada; paper submitted at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.
- FULLER, K. (2002): Summarising Paper of the Workshop Nr. 9 - Sustainability Impact Assessment at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.
- INTERNATIONAL ASSOCIATION FOR IMPACT ASSESSMENT (IAIA, 2002): The Linkages Between Impact Assessment and the Sustainable Development Agenda, and Recommendations for Actions - Statements and Policy Briefing for the World Summit on Sustainable Development, Fargo.
- LANGEWEG, F. (2002): Moving from environmental analysis to sustainability analysis; from project to strategic level; paper submitted at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.
- SHEATE, W. et al. (2001): SEA and Integration of the Environment into Strategic Decision-Making, Volume 1 (Main Report), London.
- SMITH, S. P. / SHEATE, W. R. (2001): Sustainability appraisal of English regional plans: incorporating the requirements of the EU Strategic Environmental Assessment Directive, in: Impact Assessment and Project Appraisal, volume 19, number 4, December 2001, pages 263-276.
- VERHEEM, R. (2002): Recommendations for Sustainability Appraisal in the Netherlands; paper submitted at the International Association for Impact Assessment Annual Conference 15-22 June 2002, The Hague.