

SEA follow-up

Exploring the concept of strategic environmental assessment follow-up

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This article explores the concept of SEA follow-up, addressing first its complexity at the level of strategic decision-making. To deal with this complexity, a multi-track approach is proposed. This will allow for the use of those methods, moments and information that prove to be useful in a specific case. Some preliminary guidance is given on how to devise an SEA follow-up programme using a stepwise approach. Far from attempting to provide any prescriptive direction about how to carry out SEA follow-up, the article seeks to articulate key concepts and lessons gained from such activities. SEA follow-up is basically about managing the policy and planning implementation processes or, more generally, about managing the implementation of strategic level decisions.

Keywords: SEA, follow-up, policy-making, planning, decision-making, impact assessment, adaptive management

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STRATEGIC ENVIRONMENTAL assessment (SEA) is booming as can be seen in the many (inter)national publications, workshops and conferences on the subject, but follow-up in SEA is not yet fully engaged in these discussions. The issue of what happens to SEA once the related policy, plan or programme¹ is approved and implemented is still limited mainly to the identification of monitoring indicators (Partidário and Fischer, 2004; Arts, 1998).

Who takes responsibility for tracking implementation from environmental and sustainability perspectives, the leading motivators of SEA? How should the results be used? How will the inevitable modifications in planned policies and subsequent actions be tracked during the implementation stages? How do we know whether an observed ‘impact’ may be a consequence of the specific strategic initiative or of the joint effect of multiple actions? How do we know whether additional action is needed and what needs to be done?

These are some of the many questions that can be raised and that make clear both the need for, and the complexity of, SEA follow-up. Consideration of SEA follow-up raises a lot of questions that cannot yet be answered because of lack of experience to date. However, we pose them in this article to alert others to the challenges faced.

Currently a major driver behind the quickly developing SEA field is the European Directive 2001/42/EC (EU, 2001). This includes requirements for follow-up in article 10, with respect to the need to “monitor the significant environmental effects of the implementation of plans and programmes”, and to propose mitigation measures, inviting member states to use existing monitoring systems to avoid duplication.

The China Environmental Impact Assessment Law, which includes SEA requirements, goes a step

further, requiring “tracking assessment and report[ing of] the assessment results to the approval institutions” (Order no 77 of the President of the PRC, 28 October 2003, article 15). More recently, the Hong Kong Environmental Protection Department issued an *SEA Manual* (HKSAR EPD, 2004) requiring the preparation of a strategic follow-up plan, encompassing environmental monitoring, audit and review.

Accordingly, many authors have acknowledged the need for follow-up in SEA (for instance, Sadler and Verheem, 1996; Thérivel and Partidário, 1996; ERM, 1999; Partidário and Clark, 2000, Sheate *et al*, 2001; Fischer, 2002; Noble, 2003; Risse *et al*, 2003). However, only a few deal with such issues as: what SEA follow-up is; how it can be done; or how it has been done in practice (some examples are Arts, 1998; Partidário and Fischer, 2004). Much is still unclear with respect to the way SEA follow-up should be carried out in practice. SEA itself is still a rather new concept that is subject to intense debate about definitions, core concepts, relevant approaches and tools, methods and techniques, thus adding to this lack of clarity.

Most of the examples found in the literature, and in existing SEA reports, assume that the concept of follow-up in SEA is grounded in the same methodology as used in environmental impact assessment (EIA). Recently, there has been an international upsurge in interest in EIA follow-up, resulting in attention being paid to the issue in EIA literature and conferences and in new or revised EIA regulations requiring follow-up implementation (Marshall *et al*, 2005). When developing SEA follow-up, it seems useful to build on this EIA follow-up knowledge base.

However, EIA follow-up, like EIA itself, is strongly based on the ideas of ‘classical’ rational decision-making (see Kornov and Thissen, 2000; Morrison-Saunders and Arts, 2004). Although the rational nature of EIA is also being challenged when thinking about the drivers and contexts within which EIA processes take place (see Bartlett, 1986; Bartlett

and Kurian, 1999; Lawrence, 2000; Owens *et al*, 2004), this rational approach to SEA is even more difficult to understand, as SEA is, by definition, associated with strategic processes and contexts (Kornov and Thissen 2000; Nilsson & Dalkmann 2001).

If being strategic means having a long-term view focusing on key driving factors that structure priorities and consequent efforts, that is certainly different from having *a priori* available full and complete knowledge on existing situations, the keystone in classical rational approaches. This fact, however, should not by itself justify a follow-up section in an SEA report being limited to general considerations of what should be done, plus a monitoring programme supported by indicators. Yet, if this is insufficient and if the above arguments are valid, then how should the concept of SEA follow-up be seen?

This article is intended to contribute to this debate by reviewing SEA follow-up efforts made to date, to clarify the concept, to raise questions to lead thinking, and to address the complexity of strategic follow-up.

Complexity of follow-up at strategic levels

Morrison-Saunders and Arts (2004, page 4) provide a definition of follow-up in relation to EIA and SEA: “the monitoring and evaluation of the impacts of a project or plan (that has been subject to EIA or SEA) for management of, and communication about, the environmental performance of that project or plan”.

Simply put, SEA follow-up is about life after the approval of a policy, plan or programme, when options have been closed. The notion of follow-up as a post-decision stage has always led us to think about ‘what comes after’ that decision. When dealing with projects, follow-up is easily related to project implementation — including activities such as construction and operation — and it involves issues of monitoring, evaluation, management and communication of observed impacts.

However, what if the decision is not on a project

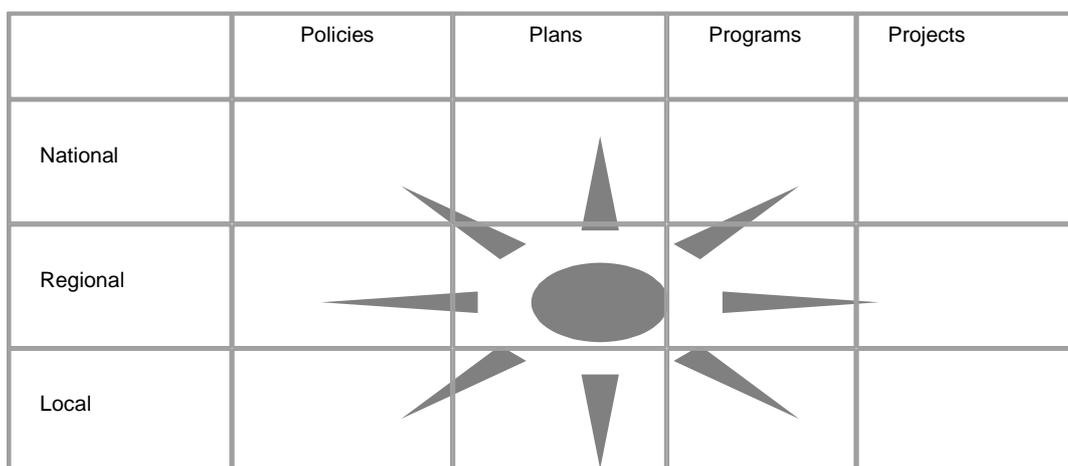


Figure 1. SEA follow-up as a ‘splash’ emanating in all directions

but instead is a policy decision, a planning or a programmatic decision of a strategic nature that is based on desired intentions and/or planned actions, foreseen in a long-term perspective? What comes after that decision? What is the form of implementation that such initiatives will take? Will it be a new policy or the reformulation of an existing policy? Will it be a plan for a certain sector or area? Will it be a programme or a concrete project? Which direction will follow the implementation of the strategic initiative?

In reality, a strategic initiative may potentially cause reactions in all these directions, albeit not necessarily in a linear way, and not always to the same extent. This could be considered as a 'splash effect' (Figure 1). Figure 1 is not to be understood in absolute terms; it is merely an illustration of a strategic decision that, whatever its location in the multi-scaling matrix, will spread effects — splash — in all directions once it is approved or adopted.

At first sight the temptation is to relate this to the concept of tiering from policy, to plan, programme and project levels, which has been discussed intensively within SEA (Thérivel *et al*, 1992; Wood and Djeddour, 1992; Thérivel and Partidário, 1996; Sadler and Verheem, 1996; Fischer, 2002; Wood, 2003). Indeed, the idea of successive assessments of environmental impacts across multiple scales over time helps the concepts of both follow-up and tiering to be understood.

Albeit attractive for theoretical purposes, tiering is mostly presented as a linear trickling down of environmental assessments from policy to project level, which is, however, a complex and rather ambiguous notion hard to observe in real-life day-to-day planning practice (Clark, 2000; Thissen, 2000; Noble, 2001; Hildén *et al*, 2004; Tomlinson and Fry, 2002; Bina, 2003; Arts *et al*, 2005). Likewise, the implicit

assumption of linear, or cyclic, streamlined policy and planning processes does not fit well with the dynamic nature of policy and planning decision-making in real life, especially if it has a strategic nature.

In real life, strategic policy and planning decision-making is multi-directional, unexpected at times and usually subject to constant modifications resulting from its inherent dynamic nature and context. A strategic initiative will establish multiple effects that may require follow-up but not only 'downwards' as the tiering concept seems to suggest (Figure 2).

The consequence of a policy may be another policy, a plan, or a programme, but also the direct development of a project. Box 1 illustrates the multi-scaling and multi-directional splash effect for a policy regarding the increase of public transport in urban transportation, showing how to identify causal links in scoping follow-up and what to investigate in particular contexts. Where to stop and what level of detail is needed in the follow-up process will depend in each case on the extent of the effect, its magnitude and therefore its relevance.

SEA follow-up can be a rather complex exercise as it involves: identification and understanding of the potential routes of effects and their extent; identification and assignment of responsibilities for observed effects; selection of relevant indicators; collection of the relevant detail and information; and evaluation in terms of other strategic, programmatic or project decisions. Another difficulty is the insufficient practical experience to date and therefore insufficient evidence available to support guidance on data needs, methods, institutional frameworks, the usefulness of results, and good practice generally.

Above all, difficulties arise because of the unresolved debate about how SEA links to current policy and planning decision-making systems and because,

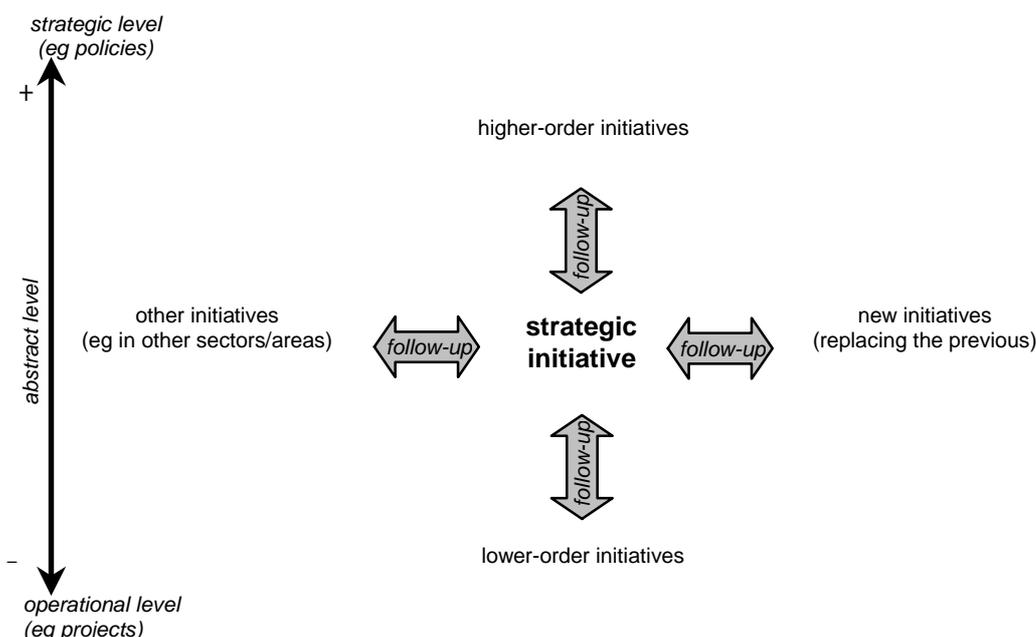


Figure 2. Follow-up directions to a strategic initiative

Difficulties arise because of the unresolved debate about how SEA links to current policy and planning decision-making systems and because, at strategic levels, there is no reason to expect a ‘linear’, rational follow-up to an initiative

at strategic levels, there is no reason to expect a ‘linear’, rational follow-up to an initiative, as discussed previously. Thus, addressing follow-up to SEA becomes quite complex for three main reasons:

- **Splash effect:** Follow-up to SEA does not necessarily mean observing the decision level immediately after. It simply means observing another decision level, whether that is immediately after, before or even the same decision level (Figures 1 and 2). For example, the follow-up to a plan SEA may be traced in the preparation and implementation of a policy, in another plan and/or even in relation to current circumstances.
- **Conformity effect:** Follow-up to SEA must be co-ordinated with the follow-up to the policy, plan or programme *per se*. In other words, the design of SEA follow-up must be consistent with the policy, plan or programme being implemented as approved. If the strategic initiative has been modified, SEA follow-up should be consistent with the modifications. Sometimes such modifications

Box 1. Follow-up on policy to increase urban public transport

The first thought could be to monitor environmental quality, such as air quality, noise levels, or the reduction in carbon emission per passenger (monitoring actual changes). However, the effects within the transport system itself (policy conformance and/or performance) must be understood: effects on the control of use of private cars, on rate of demand for public transport and on the effectiveness of the inter-modal system established for the area affected by that policy, and perhaps to re-address the transport policy in that context.

A transport policy might also have effects on related sectors, such as housing development, industrial development, employment rates, the development of schools, new recreational areas and activities (policy performance – new initiatives). For example, there could be effects on housing policies, through the location of new house development areas or the incentives for urban regeneration in areas with good accessibility by public transport.

In addition, it is necessary to consider the effects on other sectors that are critically dependent on public transport, such as schools, new office development or recreational policies, and analyse the extent to which the new transport policy may determine causal links with ongoing sector-development programmes (other sectors and lower-order initiatives).

may be hard to follow, requiring a rather different approach to that learned with project EIA compliance.

- **Strategic effect:** A policy or a plan may be approved but never fully implemented in practice, which makes a case for follow-up. What are the consequences of failing to implement an adopted policy or plan? This means most probably that another non-explicit policy is being followed, or that another informal planning process is taking place. While in project EIA the absence of implementation of a development project would certainly not trigger any follow-up, in SEA this may in itself be a strategic reason for follow-up.

SEA follow-up in strategic decision-making

The analysis of the complexity of SEA follow-up in the previous section calls for some further elaboration of strategic decision-making and the role of SEA (Partidário, 2005). Various elements of strategic decision-making have to be borne in mind when striving for a useful concept of follow-up in SEA (Arts, 1998; Nitz and Brown, 2001; Partidário, 2003; Partidário and Fischer, 2004). We have synthesised these into seven key aspects.

1. *The position and function* of SEA in the policy-making or planning cycle. The preparation of a policy or plan and respective SEA can be seen as marking the start of a new policy or planning cycle: the former cycle ends and the old policy or plan is revised and replaced. However, it can also be seen as an ongoing process whereby elements of the policy/plan are modified through changing planning policies, with SEA supporting or facilitating the ongoing decision process.

In the latter case, SEA is both looking at the effects of changing policies and at the follow-up of past planning policies. In any case, past decision-making and implementation experiences are relevant. The function of strategic decision-making is to provide direction in a wide range of possible futures by articulating goals, objectives, priorities, constraints and/or standards. In this way, a strategic initiative sets the policy framework for further decision-making (which relates to subsequent decision-making as explained below).

2. *The comprehensive and abstract nature.* Compared to project EIA, strategic policy, plans and SEAs are comprehensive, potentially relating to a large temporal and/or geographical scale, a wide scope of issues and an integrated nature. However, in practice, it will not be possible to be fully comprehensive; instead, priorities need to be established to enable focused analysis and integration to the greatest possible extent. Strategic proposals are usually formulated in abstract terms — for instance, policy for housing and employment locations that limit mobility

demand — and the quality of information is subject to obvious limitations. Analysis must therefore be defined differently from concrete 'end-of-pipe' projects (which involve detailed operational information).

3. *The subsequent decision-making* and its importance. In a strategic context, decisions are made on the following questions: 'why', 'if'/'whether', 'what' or the general 'where', but not on the detailed questions of 'where' and 'how' to implement the planning proposals. Further elaboration is needed to implement the strategic objectives or intentions and respond to those concrete questions. This will often proceed by decision-making on concrete programmes, detailed large-scale plans or projects (usually involving EIA or EIA-based SEA). This subsequent decision-making can be quite informative in SEA follow-up. It will be the implementation of such detailed activities that will generate impacts on the environment that can be measured. It may be relevant to observe such detailed activities in order eventually to enable a linkage back to the initial strategic initiative to be made.
4. *The causal relationships* and the difficulties in establishing the relationships between the strategic initiative and subsequent environmental change that can be measured. As mentioned previously, many decisions have to be taken during a planning process, which is influenced by, or dependent on, many other parties, sectors and interests. Often this involves long time periods in which many other developments may occur. Moreover, multiple projects and events in an area may involve synergistic interactions and result in cumulative and indirect impacts that may become perceptible only after long time periods.

Observable facts cannot therefore be easily correlated to strategic decisions at one single point in time. In short, much is unsettled and uncertain when preparing the strategic initiative and SEA. As a consequence, SEA follow-up has to deal with complex causality issues and look beyond simple goal-means and dose-effect relationships.

5. *The dynamic context* of strategic planning and SEA. Many intermediate developments may occur between finalising the strategic initiative and the SEA, and the occurrence of impacts on the environment and society, including: changes in original intentions and/or proposals; implementation of other developments in the planning area; changes in political or public views; changes in scientific insights; and changes in the relevant policy or regulatory framework.

Such developments may be related but can also be totally independent of the strategic initiative. Therefore, the content of a policy or a plan and the SEA impact information may become outdated and unpredicted; unexpected issues may occur in such a complex and dynamic decision context. Without some form of adaptive

management throughout the planning process, policy/planning implementation failures can be expected (Holling, 1978; Noble, 2000).

6. *Both conformance with, and performance of*, the strategic policy and planning decisions may be relevant in SEA follow-up. Strategic initiatives not only address the biogeophysical reality but also, perhaps more importantly, mainly and directly, the subsequent planning and decision-making context. More than the physical reality, subsequent governance contexts, institutional frameworks for decision-making and alternative development plans or programmes may provide the observable facts that make clear the consequences of strategic decision-making (Barrett and Fudge, 1981; Faludi, 1989).

Thus, the outcome of an SEA will most probably address the development options, their objectives, the desired impacts and pathways to their ends (scenarios). Therefore, SEA follow-up must cross-relate conformance of the final planning results (that is, expected changes in society and the environment) with the performance of the strategic plan in terms of creating conditions for future development.

7. *The decision-making level* at which the SEA has been undertaken. What is the scale, and inherent detail and focus, of SEA: is it a programme, a plan, or a policy? Different levels of decision-making imply a different rationale — the details are different, the products are different and consequently also the meaning of their implementation. This has implications on the way follow-up can be explored. It might be considered especially useful if it not only comprises a summative *ex post* evaluation (appraisal after decision-making) element but also formative *ex ante* evaluation elements (appraisal before (new) decision-making). The latter is especially relevant as, after time, policies, plans and programmes might be replaced by new ones (as discussed previously).

Although these seven elements may hamper SEA follow-up in practice, they also stress its need and usefulness. Seeking biogeophysical, environmental impacts resulting from a strategic decision is clearly not sufficient and is difficult because of complex causal pathways. There is also the need for follow-up to bridge the gap associated with the different scales of various planning tiers. So what should be the driver of SEA follow-up and how should we actually do it? This will be dealt with below (see 'multi-track approach').

Lessons from EIA follow-up

Shared principles between EIA and SEA (for instance, Sadler, 2004) justify a review of experience gained from EIA follow-up. Lessons learned will

enable repeated mistakes to be avoided and also allow the use of a structured way of thinking that might be useful for SEA follow-up (a more extensive discussion can be found in Morrison-Saunders *et al* (2003) and Morrison-Saunders and Arts (2004)). The following are learning points that can be quite useful when thinking through SEA follow-up:

- Important objectives that follow-up might serve are: controlling (checking and taking adjusting action); learning (improving scientific and technical knowledge); informing (improving public awareness and acceptance, and integration with other information).
- Follow-up should not only contain monitoring and evaluation activities but also a component of management (to enable adaptive actions) and communication (informing stakeholders, the general public).
- Use an objective-led approach. Follow-up will be different if its objective is controlling (checking conformance by tracking subsequent decision-making on the initiative) from if the objective is informing through communication (engaging stakeholders, for example, in monitoring subsequent biogeophysical or social-economic effects). In particular, the potential to take adaptive management action will be an important principle in scoping for future planning (SEA follow-up as a means of adaptive planning).
- Screening for the need for, and scoping of the content of, the follow-up programme should start early, preferably in the pre-decision stage of preparing the strategic initiative and SEA. Important issues for both screening and scoping are:
 - uncertainty (about impacts, measures);
 - sensitivity (of the area, society, politics); and
 - risk (of implementation failures).
- Availability of information is a key issue; direct measurement may require long time periods and much effort and therefore may only be possible if sufficient resources are available. However, much information might already be available and evaluative activities might be in place. SEA follow-up can be based on existing data, monitoring activities and reporting systems, such as those related to: national, regional, or even local sustainability strategies and local agenda 21s; permits and environmental management systems; general state-of-the-environment monitoring; regional monitoring programmes; institutional annual reporting; annual business plans; registrations of complaints; knowledge of the public; expert judgements; or even SEA/EIA follow-up reports for other plans/projects.
- Provide for a clear division of roles, tasks and responsibilities among the proponent of the policy, plan or programme, the regulator(s) and other parties/stakeholders (the 'public'). Identification and acknowledgement of responsibilities for

(strategic) impacts will be a critical factor. Here, public pressure relating to certain planning issues may be an efficient driver for follow-up.

- Use a multi-track approach: measurements early in the chain of causality (by monitoring of the initiative: this relates to, for instance, monitoring its performance and/or its direct consequences), and measurements of broad environmental changes (that is, general environmental quality in an area through, for instance, state of the environment monitoring). If important unexpected output is found or environmental changes occur, this may require more detailed monitoring and evaluation of specific issue(s) to determine whether the impacts are actually caused by the initiative. This can be seen as a "mixed scanning" approach (Etzioni, 1967) involving "ongoing scoping" of follow-up issues. The next section elaborates on this in more detail.

A multi-track approach

Because of the complex nature of strategic decision-making and strategic assessment, SEA follow-up cannot rely only on a form of monitoring based on environmental indicators that measure a direct, simple causal relationship between the adopted initiative and environmental changes. Besides, there are other non-environmental changes, related to institutional frameworks, legal contexts, technical capacities or modes of governance that may be much more relevant to track; for instance, the consequences of a strategic initiative rather than any eventual biogeophysical or directly observable environmental change *per se*. The relationships of causality are complex, multiple and mostly indirect. To get closer to the impacts of a strategic initiative, a multi-track approach is needed that takes into account the inherent complexity.

In the 'classical' rational planning approach, evaluation of a plan is usually seen as an appraisal of the effects it causes, or of its effectiveness and efficiency in relation to its intentions (Barrett and

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Fudge, 1981; Faludi, 1989; Arts, 1998). However, this is not easy, since effects evaluation implies the difficult task of establishing causal relationships between an intervention and measured changes. This is very complex and hardly feasible in strategic decision-making. Consequently, other evaluation 'tracks' must also be adopted for useful SEA follow-up (Figure 3).

In essence, follow-up as a form of *ex post* evaluation of the consequences of initiatives may take various basic approaches, including the evaluation of: changes, effects, accountability, legitimacy, effectiveness, efficiency and goal achievement (Weiss, 1972; Cook and Campbell, 1979; Dunn, 1981; Rossi and Freeman, 1989; Arts, 1998). Partidário and Fischer (2004) suggested four types of follow-up in relation to SEA:

- Conformance — checking compliance against objectives, regulatory requirements and applicable standards or criteria;
- Performance — verification of relationships between policy, plan or programme intentions or proposed activities and environmental and sustainability parameters/indicators (benchmarking);
- Uncertainty — observation of uncertain, unpredicted and unexpected effects; and
- Dissemination — dissemination of past experience with previous policy, plan or programme SEA to improve future practice.

SEA follow-up will adhere to one of these forms or, perhaps even better, may be approached through multiple tracks that balance all these different forms of strategic follow-up. We have identified five possible pathways or tracks.

Track 1: Monitoring actual changes

This implies measuring changes on multiple fronts: the state of the environment in a specific area, the socio-economic situation, the social profile, the institutional structure of organisations, and the legislative and regulatory framework for the related sector(s). To this end, existing monitoring and reporting activities may be relevant, such as: general state-of-the-environment monitoring programmes; Agenda 21 monitoring; regional monitoring programmes; and organisations' annual reports.

The strength of this approach is its wide scope, which may help to prevent unpredicted and unexpected issues being overlooked and to deal adequately with uncertainties. This track closely relates to uncertainty follow-up as distinguished by Partidário and Fischer (2004). However, this does not necessarily ensure that a causal relationship can be established for any specific policy/plan. The purpose is to get an insight into the changes in an area, which might be an impetus for action (a signal or warning function). For example, an area-oriented approach enables monitoring of the total impacts in an area and evaluation of the cumulative and synergistic

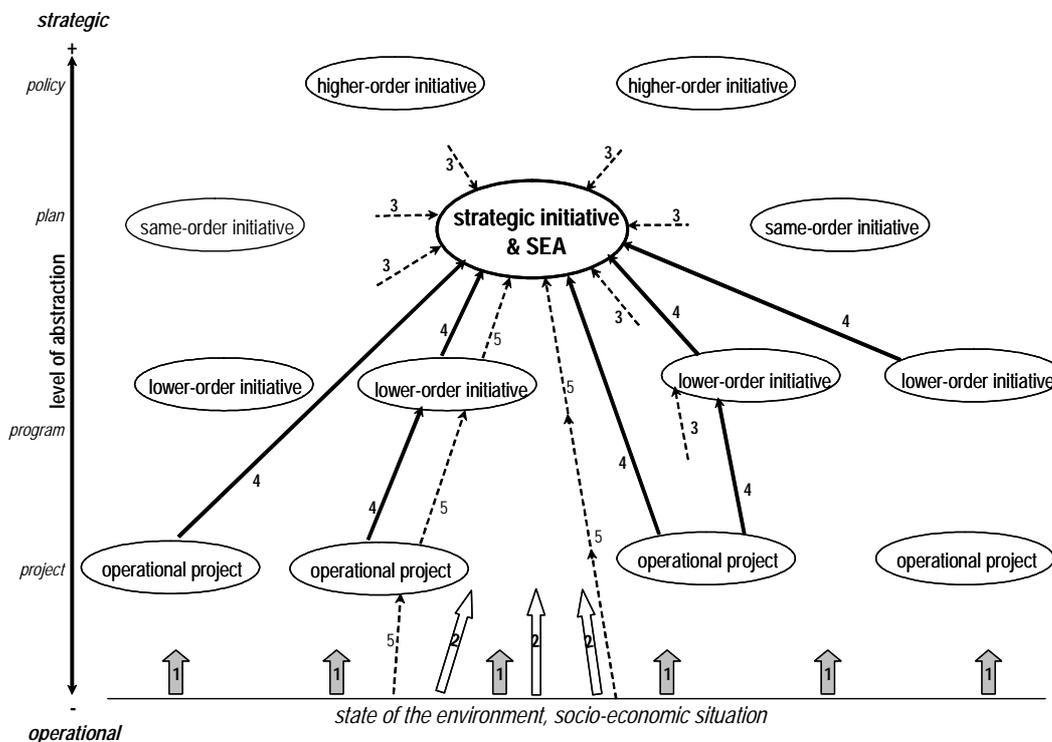


Figure 3. Multi-track approach in SEA follow-up

- Notes:
- 1 = change monitoring
 - 2 = goals-achievement evaluation
 - 3 = performance evaluation
 - 4 = checking conformance of subsequent decision-making
 - 5 = monitoring and evaluation of environmental impacts of a plan on the environment and sustainability

effects. This paves the way for concerted action and more integrated measures on a regional scale (Morrison-Saunders and Arts, 2004).

Track 2: Evaluating achievement of stated objectives

This track focuses more specifically on the strategic initiative, and SEA, than the previous approach. It investigates whether, and to what extent, policy/plan objectives have been achieved, by monitoring indicators of success (in the evaluation literature this is also called “goals-achievement evaluation” (Patton, 1989, Rossi and Freeman, 1989). Results are assessed in terms of their conformance with the original goals and objectives. This approach can be seen as a form of checking conformance between stated objectives and the observable outcomes; it relates directly to conformance follow-up as mentioned previously (Partidário and Fischer, 2004).

Key sources of information include the intended policy or planning goals and objectives, institutional annual reporting, and policy monitoring schemes. An example of the latter is the annual report prepared under the *meten is weten* (measuring is knowing) scheme that was started by the Dutch Ministry of Transport as part of its Second Transport and Traffic Structure Plan (Arts, 1998; Fischer, 2002).

The strength of the approach is that it is rather straightforward. However, a pitfall is that important unexpected changes may be overlooked and it may remain unclear what and how the strategic initiative has contributed to achieving the goals (causality). The results of such a goals- or objectives-achievement approach might be especially useful for communication purposes as well as for reconsidering planning goals and developing new planning initiatives.

Track 3: Evaluation of the performance of the strategic initiative

In this approach, the focus is on the implementation of the strategic initiative and how this affects subsequent planning and decision-making processes, including the various dimensions of the context of policy-making, planning and decision-making. This relates specifically to the evaluation of the performance of the original strategy and the related actions, by monitoring subsequent developments in the political-administrative situation, and also to the success of achieving the intended environmental and sustainability targets; it relates directly to performance follow-up as distinguished by Partidário and Fischer (2004).

This approach involves an appraisal of the use of a strategic initiative, and also the SEA, in subsequent decisions and plan implementation. It acknowledges that policies and plans must be seen as a source of inspiration for subsequent decision-making, in a dynamic, evolving and adaptive policy/planning reality. This track takes into account that plans are not ‘blueprints’ for future worlds and that deviations from the original intended goals are

not necessarily considered policy or planning failures. Rather, it seeks measures of improvement: is the overall situation better than it was before, or is it worse? In addition, it should seek the reasons for this evolving situation, to correct problems and enhance opportunities.

The strengths of this approach are that it provides much insight into how the strategic initiative works and it may provide clues for adaptive management action. Also it may provide useful lessons for other actors in strategic planning and SEA (see dissemination follow-up, mentioned previously). A pitfall is that the approach may require substantial resources if it is not carefully scoped. The nature of this type of evaluation is process-oriented and will usually involve qualitative methods and analysis (Barrett and Fudge, 1981; Faludi, 1989). This might involve approaches such as benchmarking or review of tracking past changes in the planning process in relation to the strategic initiative and its goals and objectives.

Track 4: Checking conformance of subsequent decision-making with the strategic initiative and SEA

This approach adopts a different perspective from the previous track, since it focuses not on the original strategic initiative, but on subsequent decisions. Such controlling will be particularly relevant if clear, hierarchic relations exist between the policy/plan and the subsequent plans, programmes and/or projects implementing it — the policy/plan serves as a framework setting objectives, constraints, scenarios and standards for implementation decisions.

An example of SEA conformance checking can be found in Dutch physical planning where a local land-use plan has to be checked for whether it is in accordance with the regional plan (Arts, 1998). Like Track 2, this approach can be seen as a form of conformance follow-up (Partidário and Fischer, 2004). However, the focus here is not on conformance of the state of the environment but on conformance of subsequent decisions — on tracking consistency in planning and decision-making (see also Noble, 2001).

Although this approach is of little relevance in assessing real observable effects or impacts on the environment, it may be very useful for detecting impacts on governance issues and other more socio-political sustainability issues, based on important deviations from the original policy/plan before undesirable impacts are actually caused. This type of follow-up usually requires little effort and therefore may be used as an efficient ‘early warning device’.

Track 5: Monitoring and evaluation of the actual impacts of a strategic initiative on the environment and sustainability

While focused on monitoring, this track is however different from track 1 because here the purpose is to understand exactly the causal link between an observable fact and the policy/plan. This track resembles

most the 'classic' approach to evaluation of effects. It will usually require careful monitoring of all steps in the causal chain between the strategic initiative and the actual impact (that is, closely reviewing its implementation in a programme, through to project derivation and implementation, and monitoring the consequences on the environmental and socio-economic situation).

To monitor and evaluate such a 'cascade' of actions will often be complex and require much effort in terms of money, capacity, staff resources, time and knowledge. Also, careful registers may be needed to make (historical) track analysis feasible. Therefore this approach may only be possible for very structured, rationalised and controlled decision-making contexts. An example of this is the Dutch Ten-Year Plan on Waste Management where life-cycle analysis proved to be a useful method (Arts, 1998).

Such an approach will be especially relevant if huge risks are involved that have to be controlled and/or if SEA follow-up has a learning objective. Its strength is that the actual effects of the strategic initiative on the environment might be assessed, but it may prove to be possible only for strategic initiatives that unfold almost directly into the operational level. The results of this approach may be very useful for dissemination of knowledge about methods and techniques for environmental assessment (Partidário and Fischer, 2004).

These five tracks may provide ways for dealing with the complexity of follow-up to SEA related to the splash, conformity and strategic effect, as discussed earlier. The monitoring activities of tracks 1 and 5 deal especially with the splash effect. The checking activities of tracks 2 and 4 focus on conformity issues of the strategic initiative with the environmental outcomes and the subsequent decision-making respectively. Track 3 focuses on the strategic effects in the implementation process, or the performance of a strategy in guiding action.

It can be concluded from this discussion that the various tracks for SEA follow-up will differ in their objectives, their demand for information, the effort required, the methods and techniques used and their usefulness for the various follow-up objectives (such as controlling, learning, communication). Track 4 will be especially useful for controlling plan implementation and early warning in the planning process, 5 for learning about real effects, 2 for communication purposes, 1 for reviewing the impact of cumulative actions signalling the need for further investigation and/or adaptive management action, and 3 for understanding the performance of the implementation and formulating adaptive management actions.

These tracks are not mutually exclusive and a mix may be useful, for instance, tracking changes of the plan (track 3 or 4) combined with a periodic check of the quality of the environment and the socio-economic situation in the plan area (track 1).

To enhance the practicality of SEA follow-up, a straightforward approach may be needed, starting with scoping relevant links and then identifying early warning signals that could assist in determining directions for follow-up: these could be zoomed into for greater rigour and in-depth analysis

Correlations need to be carefully tested before conclusions can be reached on the relationship between two observed situations using different tracks. There are, however, relationships among the different suggested tracks that can be enhanced by defining a multiple track follow-up strategy.

To enhance the practicality of SEA follow-up, a straightforward approach may be needed. This could start with scoping relevant links and then trying to identify early warning signals that could assist in identifying directions to follow-up. These could then be zoomed into for greater rigour and in-depth analysis (conforming with Etzioni's (1967) concept of "mixed scanning").

Preliminary guidance for SEA follow-up

Increasingly, SEA approaches are concerned with defining follow-up mechanisms that are based on indicators that apply subsequently. What indicators to use, how to feed that information back into the decision-making process and how effective it can be in affecting subsequent decisions, correcting problems and enhancing strengths are some of the issues that make the development of a programme for SEA follow-up a complex case.

Likewise, the usefulness of, and the opportunity for, a mix of follow-up tracks will vary with the time and geographical scales, and with the inter-sectoral scope of the strategic initiative. SEA is applied to a great variety of decisions about policies, plans and programmes that may concern different sectors, administrative and/or geographical levels.

Which mix of tracks is most useful for SEA follow-up will depend on the nature and meaning of policies, plans and programmes, and their relationship, in each decision context (Figure 2). These different levels of decision-making imply a different rationale: the details are different, the products are different and consequently the meaning of implementation is different. Therefore, the direction and nature of the impacts within a structured system, and thus the SEA follow-up approach, will differ.

It may be advisable to define a multiple-track follow-up strategy in order to cope with the complexity of follow-up at strategic levels. For defining and structuring such a strategy, certain considerations must be taken into account and questions asked. Inevitably, when looking at the results of implementation of a certain policy, or any other type of strategic initiative, the following questions may be raised:

- Was the policy adopted or followed as conceived/described/documented?
- Was the policy modified subsequently?
- Was the objective of the policy fully or partially implemented?
- How was it implemented?
- What current accountability systems are in place to follow the policy up?

In addition, when 'observing' the follow-up of a policy, critical aspects must be taken into account:

- Why are certain 'observable' facts happening? Is it a result of multiple sources, cumulative effects or other possible reasons?
- Who is, or can be made, responsible for the observable facts, assuming these can have detrimental consequences for the society as a whole, or for certain interest groups?
- How should undocumented outcomes be dealt with? Can these be traced back in the policy cycle or in planning?

These questions are also relevant when actually carrying out the SEA follow-up. A review of some good practice cases of SEA follow-up relating to different policy, planning and programmatic cases is provided by Partidário and Fischer (2004). This suggests that a SEA follow-up programme can be structured in three different stages.

First, follow-up in SEA must contemplate the nature of a strategic initiative and its impact (Figure 1):

- the direction(s) of impact of the strategic initiative;
- the timing of impact (immediate, mostly delayed);
- the scale of the initiative and the scale of consequences; and
- the tangibility of the plan and impacts (how concrete, measurable).

This first level analysis will provide clarity on the need for SEA follow-up and its overall nature.

Secondly, the objectives of SEA follow-up must be established. These may relate to:

- Controlling plan implementation and/or checking the changes in the environmental and socio-economic situation and, if viewed necessary, formulating adaptive management actions;

- Learning on substance and/or process of strategic decisions and thinking, and enhancing the process of learning within organisations;
- Providing information for assessing the relevance and potential impacts of certain options on which decision-making is pending; and
- Communication with stakeholders and the general public on plan implementation and sensitive issues.

These different purposes will be more or less relevant to different target groups and the SEA follow-up programme must identify the various stakeholders involved — proponent of the strategic initiative, other planning bodies, regulators and public (Morrison-Saunders and Arts, 2004).

Thirdly, depending on the purposes to be achieved and the target audience, the SEA follow-up programme will move on to identify issues that will be relevant to follow-up and approaches that will respond adequately to needs. We have seen that the multiple tracks, and respective combinations, will determine different approaches to SEA follow-up (Figure 3). For instance, a highly abstract national policy that focuses mainly on decision-making at other planning levels may use performance evaluation (track 3) and/or conformance checking of subsequent decision-making (4) for checking a plan's implementation.

A rather concrete strategic initiative that will unfold almost directly into an operational project and involves huge environmental risks that need to be controlled may employ monitoring and evaluation of actual impacts of the initiative on the environment and sustainability (track 5). A strategic initiative around a highly sensitive issue, which raises much public concern, may adopt an extensive monitoring programme using headline-sensitive indicators to inform the public frequently about the state of affairs (tracks 1 and 2). Whatever the approach to be adopted in SEA follow-up, some monitoring action seems always to be useful:

- tracking key indicators, such as for measuring goal achievement, legal compliance with regulations (for instance, EU air quality standards); and
- identifying specific issues sensitive to change that relate directly to the strategic initiative; these issues may be used as points of control (for instance, relating to logical pathways of implementation).

Before adopting the SEA follow-up programme, it is useful to think through what problems may arise when carrying it out. This relates to such issues as the availability of information, and the roles and stakes of the parties involved. Availability of information is a key issue in SEA follow-up. Various sources may be used (Partidário and Fischer, 2004).

SEA follow-up is complex because of the complicated nature of strategic decision-making: follow-up to SEA is needed and useful to ensure the key objectives of controlling, learning and informing on strategic planning processes

Conclusions

Far from attempting to provide any prescriptive direction about how to carry out follow-up activities at strategic levels of decision-making, this article has articulated key elements and lessons learned from the limited experience available in order to explore the concept of SEA follow-up.

SEA follow-up is complex because of the complicated nature of strategic decision-making. Related to this is the rapid evolution that SEA has been going through in recent years. From an extension of EIA to the levels of policy, planning and programmes, SEA is increasingly accepted as a strategic approach in its own right. It faces the inherent uncertainty imposed on any pre-decision approach, as it deals with vague notions and intentions that further increase its surrounding complexity. For these same reasons, follow-up to SEA is needed and useful to ensure the key objectives of controlling, learning and informing on strategic planning processes.

Because of the different meaning and importance of strategic initiatives in particular decision-making contexts, it is difficult, or even impossible, to standardise approaches to SEA and, consequently, to SEA follow-up. A multi-track approach has been suggested and may be relevant to allow for the use of different methods, timings, purposes and information that prove to be useful and relevant in each case.

A stepwise approach should be followed to prepare an SEA follow-up programme — founded on one or, preferably, multiple tracks — that needs to identify at the outset: the different and most relevant levels that will be engaged in the follow-up approach; the directions and nature of the possible impacts; the objectives of the SEA follow-up; and the indicators and methods that need to be established.

SEA follow-up can be useful as a safeguard for 'handing over the baton' from one decision level to another, by providing feed forward and feedback of impact information. It may help to close the decision-making and planning cycle — useful SEA follow-up will usually include proactive, *ex ante* evaluation elements. However, a distinction should be made between whether the underlying SEA approach is a formative (policy-based approach) or a

summative (EIA-based) approach, since the consequences of undertaking SEA follow-up, its potential results, and the associated degrees of confidence, will be rather different.

Where do we go from here? It is clear that this article only provides some starting points; we have explored the concept of SEA follow-up and identified similarities with, and differences from, EIA follow-up. For further development of SEA follow-up, it will be essential to gain more practical experience. We have to start doing it. First, there is a need for structured attention to follow-up in SEA by preparing follow-up programmes before a strategic initiative is adopted. Secondly, the adequacy of different forms of follow-up needs to be investigated to determine what combinations of tracks are most useful in different situations.

In addition, it is essential that policy, plan and programme implementation are monitored and evaluated as well, irrespective of SEA. This proves to be a huge obstacle in practice, which relates mainly to historic and cultural attitudes in strategic planning — planners being more pre-occupied with 'brilliant futures' and less with the evaluation of past practices and with earthly day-to-day management issues resulting from current policies, plans and programmes.

Learning from past planning outcomes (successes and failures) is essential to find new innovative ways of devising the future in more effective and efficient ways. Key elements here for further development are the collection and analysis of good practice cases indicating how SEA follow-up has added value to planning. This will relate to such issues as how to link strategic initiatives to operational issues, how to feed practical insights back into strategic planning and how to involve the various stakeholders.

Finally, it should be emphasised that SEA follow-up is basically about managing the policy-making and/or planning implementation process. In this way, learning from experience is enhanced and the uncertainty intrinsic in policy-making and planning is dealt with more adequately.

Note

1. In literature on SEA, strategic decision-making is generally related to decisions taken at policy, planning and programme levels (see for instance, Sadler and Verheem, 1996; Partidário, 1999; Partidário and Fischer, 2004; Thérivel, 2004).

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