

Review

Integration of strategic environmental assessment into regional planning

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Strategic Environmental Assessment (SEA) is a well-accepted environmental assessment and decision support tool. Also, SEA represents one of the main requirements of sustainable development, it allows the integration of economic, social and environmental considerations when planning or guiding future development. It has not been fully realized; understanding and addressing cumulative environmental effects at broader regional scales as prerequisite to ensuring the sustainable development of the environment. Therefore, this paper focuses on reviewing the Strategic Environmental Assessment and its integration to the regional plan. So, it is appropriate time to explore the relevance and give emphasis of SEA to the regional planning both national and international level. The research methodology involved a comprehensive and systematic review of existing literature. More specifically, existing processes of SEA applied to policies, plans, and programmes in different countries were reviewed. SEA can play a significant role in enhancing the integration of environmental considerations into policy and planning processes because it is directed at strategic decision making. The integration of environmental concerns within regional planning aims to reduce the possibility of any dislocation between environmental, economic and spatial processes. Any regional environmental development plan should give attention to regional economic considerations so that all proposed environmental projects will be economically sound. In Denmark for instance a regional plan determines the framework for the development of a region with regard to urban development, the overall structure of retail trade, the overall transport structure, protection of land and natural resources, recreation and tourism and the location of large installations and enterprises. From the review made in general and the case reviewed in particular important lessons are drawn for developing countries like Ethiopia that have greater demand to apply SEA into the policy, plans and programme.

Keywords: Strategic Environmental Assessment, Plan, Policy, Programme, Development

INTRODUCTION

Strategic environmental assessment (SEA) has emerged in the last decade as a term for tools which aim to integrate environmental considerations into proposed policies, plans and programmes (Dalal-Clayton and Sadler 1999). SEA is an instrument to enable integration of environmental and sustainable development issues into early stages of development policy and plans. It helps to design and assess preferred strategic options and validate final outcomes. It is also a distinctive tool in relation to other tools such as project environmental impact assessment (EIA), cumulative impact assessment, policy analysis or planning (Partidario, et. al. 2008). Moreover, the SEA looks at a range of possible

alternatives in a way that is systematic and ensures full integration of relevant issues in the total environment including biophysical, economic, social, and political considerations (Partidario 1996, and Glasson and Gosling 2001).

The main rationale for applying SEA is to create a better environment through informed and sustainable decision making and recognition of the deficiencies of the EIA, which mainly focus on project (Glasson and Gosling 2001). SEA helps to ensure that many of the environmental issues of global importance are considered in policies, plans and programmes at different administrative levels (i.e. national, regional, local). The

other important rationale for applying SEA is the expectation that if socioeconomic and environmental effects are properly considered on top of the decision making hierarchy in a publicly accountable fashion, there should be less friction and fewer problems at decision making levels further down the decision making hierarchy (OECD 2012). In order to live up to this expectation, a clearly defined decision making hierarchy needs to be in place (Fischer, 2002, and Fischer 2007). Generally, SEA of policies, plans and programmes is strengthening project EIA; advancing the sustainability agenda; and addressing cumulative and large-scale effects (Dalal-Clayton and Sadler 1999).

SEA is widely accepted in many countries as a tool to integrate environmental consideration into a decision-making process from the environment's viewpoint and sustainable development (Therivel 2004). It is generally understood as a process for assessing the environmental impacts caused by a proposed policy, plan and programme. It allows for assessing cumulative impacts of projects and is considered as a tool to improve the efficiency of environmental assessment (EA), as it could reduce the number and complexity of project EIAs (Runhaar and Driessen 2007). An increasing number of countries and international organizations, such as the Netherlands, EU, and World Bank (WB), have introduced SEA systems (Sadler 2003). SEA covers wide range of PPPs, for example, energy, transportation, industrial development; and spatial plans, resource management strategies and regional planning.

As to Gavanelli, et al (2010) regional planning is the science of efficient placement of land use activities and infrastructures for the sustainable growth of a region. It usually takes place at both the national and regional levels. From the national perspective, Regional Planning is concerned with optimizing the use of national space in the development process. From the regional perspective, Regional Planning is concerned with using regional resources in a way that maximizes the benefits to the economy and population of the region (Gabriel and Laugesen 2000). The integration of environmental concerns within regional planning aims to reduce the possibility of any dislocation between environmental, economic and spatial processes (Roberts 1994).

Regional strategic environmental assessment is about informing the development of strategic initiatives, policies, plans or programmes for a region, and thereby facilitating an opportunity for more informed and efficient downstream project based environmental impact assessment and regional environmental management initiatives. Emphasis is on ensuring the sustainability of a region and a desired level of environmental quality, both biophysical and socioeconomic, rather than solely on impact mitigation (CCME 2009 and Chaker et al. 2004).

Statement of the Problem

SEA is a well-accepted environmental assessment and decision support tool (Partidario 2000). It is widely recognized as a promising tool to take account of the environmental effects of policy, plans and programmes (UNEP 2004). Developments in legislation and guidance are taking place across some countries, for example, in Australia, the United Kingdom, Canada, Denmark, Finland, France, Hong-Kong, Japan, Norway, The Netherlands, and South Africa, which is an evident sign of its wide acceptance (Partidario, 2000). Moreover, formal provision for SEA has been made by a number of countries, mainly in Europe and North America. The arrangements and procedures for SEA are relatively diverse, although some degree of standardization likely will take place when the European Directive on SEA comes into force in 2004 (UNEP 2004 and Chaker et al. 2004).

According to UNEP (2004), developing countries shows greater demands for information for SEA. The increasing demand for SEAs is most likely due to the increasing burden of project-level EIAs in the developing countries. There is a growing realization that conducting SEA earlier in the decision-making process will address some of the policy issues that can delay the EIA process later, at the project level. In keeping with the rationale for EIAs, governments are viewing SEAs as instruments that can assist in demonstrating the value of environmental assets (OECD 2012).

Literature shows as there is growth of interest in Strategic Environmental Assessment (SEA) in both developed and developing countries due to the growing awareness of the limitation of the traditional project based EIA and the need to integrate environmental considerations into development planning in order to promote sustainable development (Sadler 2003, Chaker et al. 2004, ECA 2005 and UNEP 2004). Moreover, areas subject to SEA cover wide range of PPPs, including sector-specific policy, plans and programmes, spatial and land use plans, regional development programmes, natural resource management strategies, legislative and regulatory bills, investment and lending activities, international aid and development assistance, structural adjustment funds and operations, macro-economic policy and budgets and fiscal plans (UNEP, 2002).

Of the area subjects to SEA, most attention is given to proposed actions in specific sectors that are known or likely to have significant environmental effects, for example, energy, transportation and industrial development; and spatial plans, regional development programmes and resource management strategies (Sadler 2003). In addition, SEA is seen as a requirement of sustainable development, it allows the integration of economic, social and environmental considerations when planning or guiding future development (Brown and

Therivel 2000) and it has the potential to make the

world a greener and more liveable place (Therivel 2004).

Strategic environmental assessment (SEA) has been slow to evolve and it's value-added to regional environmental planning and decision-making (CCME 2009 and World Bank 2002). It has not been fully realized; understanding and addressing cumulative environmental effects at broader regional scales as prerequisite to ensuring the sustainable development of the environment. But the cumulative effects assessment has occurred at a rudimentary level and largely within the constraints of project level environmental impact assessment. So, it is appropriate time to explore the relevance and give emphasis of SEA to the regional planning both domestically and internationally (CCME 2009). Therefore, the focus of this paper is to review about Strategic Environmental Assessment and its integration to the regional plan.

Objective of the Study

The main objective of the study is to review the role of strategic environmental assessment to regional planning. The specific objectives of the study are:

- To review the strategic environmental assessment;
- To assess the application of SEA in regional planning; and
- To summarize case study on best practice of integration of SEA into regional spatial planning.

METHODOLOGY

The research methodology involved a comprehensive and systematic review of existing literature. More specifically, existing processes of SEA applied to policies, plans, and programmes in different countries were reviewed. In addition to that the integration of SEA into regional plan and experience of county that uses it to plan the region were assessed.

Strategic Environmental Assessment

Evolution of SEA

Environmental assessment requirements were formulated firstly based on the National Environmental Policy Act (NEPA) in 1969 in the USA (Fischer 2002, and Marsden and Mulder 2005). Forms of SEA have been in place since EIA was first introduced in 1969 and, arguably, for an even longer time in land and resource planning practice. In late 1970s and 1980s SEA was an extension of EIA to include wider area and regional assessments, and landscape level or synoptic methodologies for cumulative effects assessment.

Nonetheless, during the 1990s, SEA was introduced as a separate process from EIA in a number of countries (Marsden and Mulder 2005).

From the mid -1980s the European Commission made several attempts to adopt regulations on SEA. In 1989, a consultation process with national EIA-experts was started, which led to an official directive proposal in 1996. After many rounds of revisions, this directive was agreed on in 2001 and finally entered into force in 2004 (Fischer 2004). The directive is referred to as "Directive on environmental assessments of certain plans and programmes". The directive requests the competent authorities to elaborate an environmental statement and to perform consultations with the environmental authorities and the general public. However, the directive only addresses plans and programmes whereas SEAs in principle can be applied also to policy levels, and as such might overlap with Impact Assessments (European Commission 2001).

According to UNEP (2004) and Dalal-Clayton and Sadler (2005) though SEA is at a relatively early stage, the process of development and take-up has been rapid in the past few years and further changes are pending. The path of SEA development can be broadly divided into three phases. The first phase of development extends from 1970 to 1989 when certain legal and policy precedents for SEA were established under EIA frameworks. In this stage SEA was limited in its role and scope, and other than the USA, however, the role and scope of SEA was limited and restricted to a few countries, such as Canada, the Netherlands, and Australia, and to particular elements, called the *Formative Stage*. The next phase of development of SEA system was from 1990 to 2000, named the *Formalization Stage* when provision for SEA was made by an increasing number of countries, including transitional countries of Central and Eastern Europe and newly Independent States (NIS). This process also became increasingly diversified in relation to EIA arrangements. Finally, in the last phase, *Extension stage* (2001-onward) when SEA is on the threshold of widespread adoption and further consolidation as a result of international legal and policy developments. These include the European Directive on SEA, which come into force in 2004 in member states and the SEA Protocol to the UNECE Convention on Transboundary EIA. Together, these frameworks possibly triple the number of developed and transitional countries, including newly industrialized countries that make provision for SEA over the next decade (Sadler 2001 and Chaker et al. 2004).

Concepts and Definition of Strategic Environmental Assessment

Strategic environmental assessment (SEA) is a decision making support instrument for the formulation of

sustainable spatial and sector policies, plans and programmes, aiming to ensure an appropriate consideration of the environment. SEA is the 'big brother' of environmental impact assessment (EIA) for projects, which has been applied to a large extent in many countries worldwide (Fischer 2002). Furthermore, SEA is a useful policy tool that integrates environmental and social concerns at policy, plan and programme levels (World Bank 2008). It is defined as the systematic and comprehensive process of evaluating the environmental effects of policy, plan or programme and its alternative (CIDA 2004). It is good at anticipating and addressing cumulative impacts over time and space, and in identifying alternatives. The institutionalization of SEA to complement EIA within an overall sustainable development framework is crucial to ensuring that environment and social well being are adequately safeguarded (ECA 2005).

There is no single approach to SEA that can be applied to all cases and no internationally accepted definition of SEA. More importantly, the decision making context at the strategic level is very different at national versus regional level, at policy versus plan/programme level, in developed versus developing countries, in countries with a tradition of public participation versus countries that do not have such tradition. SEA should be arranged reflecting differences in each situation of proposed policy, plan and programme (Sadler 2003, and Dalal-Clayton and Sadler 2005). Furthermore Partidario (2007) defines SEA as an impact assessment tool that is strategic in nature and has the objective of facilitating environmental integration and the assessment of the opportunities and risks of strategic actions in a sustainable development framework. The strategic actions are strongly linked to the formulation of policies, and they are developed in a context of planning and programming procedures. But the most widely quoted is the interpretation offered by Sadler and Verheem (1996) cited in ECA (2005): "*SEA is a systematic process for evaluating the environmental consequences of proposed policy, plan or programme initiatives in order to ensure they are fully included and appropriately addressed at the earliest appropriate stage of decision-making on par with economic and social considerations*".

Differences and Similarities between SEA and EIA

As to Macintosh (2010) SEA targets policies, plans and programmes so as to influence 'higher-level' decision-making processes and capture the cumulative impacts of multiple actions that can have adverse environmental, social and economic effects. Wood and Dejedour (1992), Partidario (2007), Lee and Walsh (1992), Macintosh (2010) and UNEP (2004) identified main differences between SEA and EIA (See Figure). These are:

- The precision with which spatial implications can be defined differs. Projects are usually precisely located while the geographical impacts of policies, plans and programmes, except for land-use plans, are often much less clearly defined;
- The detail relating to physical development differs. There is often an absence of detail about specific physical developments proposed within policies, plans and, to a lesser extent, programme;
- The lead-time differs; a project is generally carried out within a shorter time span than a policy, plan or programme which makes its impacts less complex to assess;
- The decision making procedures and the organisations involved differ. A project generally has both an initiator and a competent authority which determines whether it proceeds or not. It generally concerns only one sector of activity and therefore there is often only one initiator so that co-ordination is not a major issue. On the other hand, policies, plans and programmes are often formulated and sanctioned by the same body but they involve several organizations, sectors and legislative frameworks in their preparation.

Yet SEA and EIA also have many similarities and a common foundation. SEA has developed largely as a response to the levels and types of decision-making not covered by EIA. In doing so, SEA has derived, adapted and implemented EIA arrangements, procedure and methodology, particularly at the plan and programme level. Other process models have also been adapted, particularly at the policy level where integrative appraisal and environmental "tests" compress the basic steps followed in EIA, such as screening and reporting (UNEP 2004, and Lee and Walsh 1992). (Figure 1)

Theory of Strategic Environmental Assessment

SEA is an analytical tool to link possible positive or negative environmental issues to higher level decision-making. SEA is, in many ways, similar to environmental assessment for projects. Like typical environmental assessments, the process of conducting as SEA involves answering a series of questions during the development of a policy, plan or programme proposal. In addressing these questions, any potential negative impacts of the proposal can be identified and mitigated. At the same time, potential positive impacts can be enhanced. The benefits of SEA are advances of the sustainability agenda; strengthens policy, improvement in plan and programme decision making process; allowing for consideration of cumulative and synergistic effects; and facilitating the implementation of more environmentally sustainable projects (CIDA 2004).

A number of aspects are responsible for the positive benefits arising from SEA application. These include a systematic consideration of the environment and a better

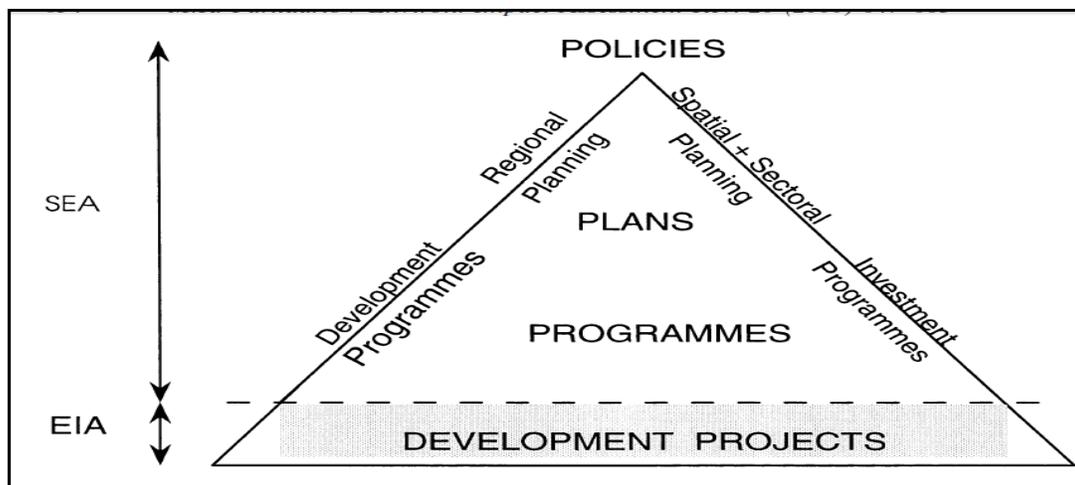


Figure 1. Expected amplitude of SEA intervention (Adapted from Partidario, 2000:654)

and wider consideration of effects and alternatives in strategic decision making. Furthermore, they include an increase of the efficiency of tiered decision making in complementing project EIA. Public participation in SEA provides a crucial political view of people's ways of understanding problems connected with policy, plan and programme making and can rationalize the decision process. It can make the whole planning process more efficient and reliable, improving the possibility of reaching formal agreement (World Bank 2002, Therivel 2004, and Dalal-Clayton and Sadler 2005). SEA also includes the consideration of the quality of life of future generations. A structured and systematic approach to SEA should therefore be applied (Fischer 2002).

The stage in the decision making hierarchy has an impact on the planners's role which likely to play in SEA. Based on the tasks that are to be addressed in a particular decision making situation, the planner will deal with different degrees of knowledge and conflict. In policy situations, planners will most likely find themselves as policy mediators who should support a wide debate on overall objectives and values. Plans have a strong spatial dimension with a focus on land suitability and SEA is likely to focus on spatial alternatives. In programme situations, finally, potential priority projects or priority project sites are identified. In this context, SEA will be fully integrated, using either multi-criteria analysis (MCA) or cost-benefit analysis (CBA) (Fischer 2002).

SEA can play a significant role in enhancing the integration of environmental considerations into policy and planning processes because it is directed at strategic decision making. SEA can generally help decision makers by first of all achieving environmentally sound and sustainable development and additionally by strengthening policy, plan and programme-making processes; saving time and money by avoiding costly mistakes; and improving good governance and building public trust and confidence in decision making (Marsden

and Mulder 2005). However, the SEA analysis depends on whether the policy, plan or programme proposal's goals and objectives are broad or specific, and whether direct linkages to environmental issues can be identified (CIDA 2004).

On the other hand there are barriers that can be seen as the limitation on the application of SEA. Glasson and Gosling (2001) identifies interrelated and mutually reinforcing barrier. These are:

- Insufficient political will – low priority is given to environmental concerns, public participation and integrated decision making;
- Lack of clear objectives – absent or incomplete direction given to incorporating environmental goals into sectoral policies, plans and programmes;
- Narrow definition of issues – prevailing emphasis on economic growth and failure to consider strategic environmental implications;
- Compartmentalized organizational structures - consideration of environmental matters is curtailed by the sectoral division of political powers and agency responsibility;
- Absence of accountability – economic agencies are not held responsible for the environmental implications of their actions;
- Lack of incentive – policy makers and advisers are seldom rewarded for anticipating and avoiding environmental problems; taking these into account usually generates additional pressures;
- Exigencies of decision making – political stresses dictate a fast response to events in which there is too little time to review and weigh economic consequences, let alone environmental ones – and
- Bureaucratic prerogatives – environmental requirements encroach on the 'turf and territory' of other sectors zealously guarded by officials, especially at the policy level.

As Therivel (2004), Fischer (2007), Dalal-Clayton and

Sadler (2005), UNEP (2004), and Mulder (2012) confirmed, to put SEA into practice, a number of stages needs to be followed. The first stage is the establishment of the context for the SEA, including the screening (whether a SEA is required or necessary) and baseline data gathering. The second stage addresses implementation. This includes a range of activities, such as deciding on the scope of the SEA (in dialogue with stakeholders); collecting baseline data (if not done in the first stage); identifying or developing (policy) alternatives; assessing the effects of the plan, programme or policy; identifying how to enhance opportunities and mitigate impacts; quality assurance; and reporting. The third stage includes consultation on the draft plan, programme or policy and the drafting of a report to inform and influence decision making. This includes the formulation of recommendations (in dialogue with stakeholders). The fourth and final stage focuses on monitoring and evaluating the implementation of the plan and evaluation of the SEA.

Furthermore, Elling (2000) attested the following principles that are used to integrate the planning with the SEA. These are:

- a) Integrated assessment in planning process (and integration of assessment documentation, see e.);
- b) Use of scoping processes to define the scope of the plan and of the environmental assessment;
- c) Identification of environmental criteria which are compatible with the scope of environmental assessment;
- d) Assessments of planning objectives, strategies and guidelines;
- e) Integrated statements on guidelines, including their environmental effects and likely alternatives;
- f) Qualitative methods explicating both positive and negative effects, and conflicting guidelines;
- g) Summing up assessments for each planning section and the plan in total; and
- h) Public participation

In accordance to the context they apply the integrat SEA, the above steps and the principles that SEA requires, different part of the world apply it for policy, plans and programme. For instance, the European Union (EU) considers SEA as an important tool for environmental protection and sustainable development and released Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment' (European Commission 2001). The main elements of SEA in EU practice are the environmental report; consultations with the public, environmental authorities and significantly affected member states; consideration of the SEA results in the decision about the adoption of the plan or programme; an explanatory statement of the decision from an environmental perspective; and monitoring (Stoeglehner, et. al. 2009).

Furthermore, in other parts of the world, a small number of countries have SEA processes or elements (e.g. Brazil, Chile, and South Africa) and China passed a

new EIA law that includes provision for SEA of plans and programmes. Also, a greater emphasis being given to sector and regional assessment by the World Bank that promises to introduce SEA processes and elements more widely. So far, borrowing countries have made limited use of these instruments and also there are regional differences in their application. Other multilateral financial and international assistance agencies use SEA-type instruments and requirements (e.g. Asia Development Bank, European Commission) to promote environmentally sound development (UNEP 2004, Dalal-Clayton and Sadler 2005, and Fischer 2007). According to ECA (2005) among African countries, Ethiopia and Kenya has a legal framework for SEA in place. Ethiopia's EIA Proclamation of 2002 provides for the assessment of policies, strategies, programmes, laws and international agreements, while part IV of Kenya's Environmental (Impact Assessment and Audit) Regulations of 2003, provides for SEA.

Coverage, Aim and Principles of Strategic Environmental Assessment

Any extension of an EIA system to higher tier actions should probably apply to the significant environmental impacts of policies, plans and programmes relating to the various sectoral activities, especially: agriculture, forestry, fishing; extractive industry; energy industry; manufacturing industry; transport; non-transport infrastructure; housing; the environment; and recreation and tourism. It should also relate to policies, plans and programmes concerning research and development in general. These policies, plans and programmes must be for reasons of practicality, restricted to those prepared by or for public or private bodies or require approval by a public body (Gavanelli 2010, Chaker et al. 2004, Wood and Dejeddour 1992).

Nevertheless, current SEA systems are mainly focused on plan and programme level, rather than policy. No country appears to provide a comprehensive scope of SEA coverage, namely, across all levels of proposed strategic action (Sadler 2003 and Sadler 1998). Dalal-Clayton and Sadler (1999) also confirmed that there have been fewer applications of SEA at the "higher" level of policies - particularly the national-level policies. This is due to barriers constraining the environmental assessment of policy include lack of clear objectives, insufficient political will, the narrow definition of issues, the existing organizational structure, absence of accountability, bureaucratic politics, lack of information and absence of incentives (Glasson and Gosling 2001). Furthermore, the prerogative of politicians and senior bureaucrats who resist the integration of SEA at this level has little experience (Dalal-Clayton and Sadler 1999). Therefore, different approach has to be seen to integrate SEA in

to the higher level of policy to broaden its coverage.

The aim of SEA is to integrate the environmental issues in decision making to protect the environment and promote sustainability (Therivel 2004, Fischer, 2002, and Fischer 2007). In addition, Sadler and Brooke, 1998 summarized the aim of SEA into two main categories:

- Promote environmentally and socially sustainable development (ESSD) by:
 - anticipating and preventing adverse effects at source;
 - considering and identifying best practicable environmental options; and
 - ensuring that policies and plans are consistent with ESSD goals and safeguards.
- Strengthen and streamline project EIA by:
 - Environmental “clearance” of policy and planning issues that are addressed either ineffectively or not at all by EIA (need, justification and major alternatives);
 - Early warning of cumulative effects from programmatic or other, spatially related actions; and
 - Pre-examination of potentially significant effects of specific proposals, thereby reducing the time and effort necessary for EIA.

According to Sadler (1998), UNEP (2004) and Dalal-Clayton and Sadler (1999), even though no single model or best approach to SEA exists, there is general measure of agreement on a number of underlying principles for the operation of all types of SEA processes. These guiding principles for design and implementation of SEA process are:

- Fit-for-purpose — the SEA process should be customized to the context and characteristics of policy and plan making;
- Objectives-led — the SEA process should be undertaken with reference to environmental goals and priorities;
- Sustainability-driven — the SEA process should identify how development options and proposals contribute to environmentally and socially sustainable development;
- Comprehensive scope — the SEA process should cover all levels and types of decision-making likely to have significant environmental effects;
- Decision-centred — the SEA process should provide sound information in a form appropriate to the level of decision-making (e.g., statement of implications, issues and/or impacts);
- Integrative — the SEA process should include consideration of social, health and other effects as necessary;
- Participative — the SEA process should provide an opportunity for public involvement, which is appropriate to the level and issues of decision-making; and
- Cost-effective — the SEA process should achieve its purpose in a timely and expeditious manner, including, as practicable setting a context for project EIA.

Integration of Strategic Environmental Assessment into Regional Planning

The integration of environmental concerns within regional planning aims to reduce the possibility of any dislocation between environmental, economic and spatial processes (Roberts 1994). Regional planning deals with the efficient placement of land use activities, infrastructure, and settlement growth across a larger area of land than an individual city or town. Integrated regional economic-environmental development plans are not simply a compilation of separate economic and environmental plans. They should show the linkages between the economic development, resource use and the production of residuals and impacts on environmental quality and communities (Gabriel and Laugesen 2000).

Any regional environmental development plan should give attention to regional economic considerations so that all proposed environmental projects will be economically sound. Regional Planning potentially allows linkages between sectoral national planning and project planning and between physical and socio-economic and spatial linkages through which project impacts are expressed. Regional Planning also allows the identification of the institutional arrangements necessary to ensure beneficial integration of projects into the economy of a sub-national area. An understanding of Regional Planning is essential for defining the role that Environmental Land Use Planning can play in the regional development (Gabriel and Laugesen 2000).

Therefore, Regional Strategic Environmental Assessment (R-SEA) is a process designed to systematically assess the potential environmental effects, including cumulative effects, of alternative strategic initiatives, plans, or programmes for a region. In doing so, R-SEA can support the preparation of a preferred regional development strategy and environmental management framework, and inform subsequent project-based environmental assessment and decision processes (CCME 2009 and Noble and Harriman 2008).

Hoppenstedt (2003) explained the State of implementation of SEA, a case of regional plan in Germany. The case clearly stated the regional planning as general spatial planning mainly adopts statements of the higher planning levels and of other planning sectors. Thus, there is no question that regional plans will be a subject to the SEA. The Directive 2001/42/EC of the European Parliament and of the Council on the assessment of certain plans and programmes (following SEA Directive) entered into force on 21 June 2001, being published in the official journal of the EC (European Commission 2001). The SEA Directive has to be implemented into national law within three years, to wit by 21 June 2004 at the latest. Art 3 (2) SEA directive stipulates that plans and programmes “...which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water

management, telecommunications, tourism, town and country planning or land use and which set the framework for future development consent of projects”.

Moreover, Smith and Sheate (2001), the adoption of EU Directive 2001/42/EC on strategic environmental assessment (the ‘SEA Directive’) presented the UK Government and regional bodies in England with a dilemma. Namely, current government guidance requires Regional Planning Guidance (RPG) and Regional Economic Strategies (RESs) to undergo a sustainability appraisal. In Canada, there is now a collective understanding that EA must go beyond the evaluation of site-specific, direct and indirect project impacts to include issues of broader regional, cumulative and higher-tiered policy, plan, and programme (PPP) development significance. In principle, R-SEA is based on reconceptualization of the relationship between the assessments of cumulative environmental effects. It is a process designed to “systematically assess the potential environmental effects, including cumulative effects, of alternative strategic initiatives, PPPs for a particular region” (Gunn and Noble 2009, and Noble and Harriman 2008).

Criteria to Apply Regional Strategic Environmental Assessment

CCME (2009) and Noble and Harriman (2008) proposed set of screening criteria that Regional Strategic Environmental Assessment (R-SEA) should be triggered. The followings are circumstances under which R-SEA can be applied:

- i. A strategic decision is to be made in order to establish a framework and conditions for future development, land and resource use, or management actions in a region;
- ii. There is a proposal to develop a regional plan or strategy concerning resource use, resource allocation, conservation or development;
- iii. There is an application for development in a previously undeveloped region and for which no current regional plan or strategy exists;
- iv. There is an application for development in an already developed region, for which no current regional plan or strategy exists, and that development has the potential to instigate or significantly influence regional cumulative effects processes;
- v. There is a noticed decline in the key natural resources or ecological integrity of a region;
- vi. There is a need to coordinate disparate regional resources, programmes, data, management objectives, strategic initiatives in relation to a common regional issue;
- vii. Regional decisions are to be made concerning resource use, development, or land access that is multi-jurisdictional or multi-sectoral in nature; and

viii. The Public demands that R_SEA should be carried out.

Based on the above criteria, examples of the types of initiatives to which R-SEA might apply include the development of PPPs, and associated strategic initiatives have been suggested by CCME (2009) and Noble and Harriman (2008). These are marine and coastal zone planning, integrated land use planning, urban planning, conservation and protected areas planning, watershed management, and regional energy strategies and initiatives.

Process to Conduct a Regional Strategic Environmental Assessment

As an assessment process, R-SEA adopts task such as scoping; identification and evaluation of alternatives; identification of a preferred option; mitigation; reporting; and monitoring, all in a consistent and systematic form, ensuring open and accountable decision making, and contributing to the improved quality of subsequent decisions (Partidario 2000 and CCME 2009). The output of R-SEA does not represent the decision, but rather the results of a systematic evaluation of options in such a manner that a strategic direction can be identified, and informed regional PPPs and project development decisions can be made (West Region 2011, CCME 2009, and Noble and Harriman 2008).

The process to conduct R-SEA presented in Figure 2 consists of three interrelated components. These components are summarized by Noble and Harriman (2008) as follows:

- a pre-assessment phase, focused on developing a reference framework for the assessment, scoping the environmental baseline, identifying cumulative baseline change, and delineating key trends and cumulative effects stressors of concern;
- an impact assessment phase, often technical in nature, that serves to identify and assess the cumulative environmental effects and associated impacts of alternative options and leads to identification and selection of a preferred option; and
- a post-assessment phase, focused on moving R-SEA output forward to PPP implementation and following-up on the results.

Case summary of SEA into Regional Spatial Planning in Denmark

Denmark covers 43 093 km², it has 275 municipalities and 14 counties (“amt” in Danish) (Studschoit 2000 and Elling 2000). According to the Danish Planning Act, every county has to prepare a regional land use plan. The Regional land use plan gives the frame for the future town development, over all transport structure,

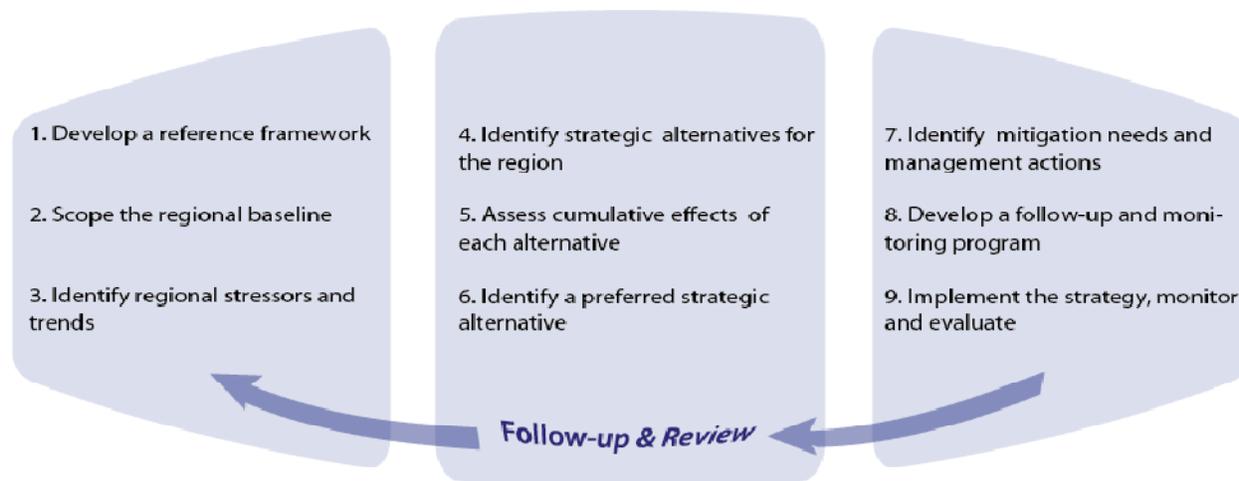


Figure 2. Process to conduct R-SEA (Source: Noble and Harriman 2008: 23)

preservation of land and natural resources, recreation, tourism and the location of major establishments and activities. The planning horizon is 12 years and the plan is revised every four years. Regional plans have legal implications for land use planning at the municipal level (Studsholt 2000). Therefore, for the study the application of SEA into regional planning of Northern Jutland County in Denmark is selected as the best experience.

Overview of Regional Planning in Denmark

According to Elling (2000), a regional plan determines the framework for the development of a region with regard to urban development, the overall structure of retail trade, the overall transport structure, protection of land and natural resources, recreation and tourism and the location of large installations and enterprises. Moreover, regional plans have legal implications for land use planning at the municipal level. Based on an overall assessment of development in the region, the regional plan will include guidelines for these developments. Regional plans are adopted by the County Councils, and have to be revised every four years, but can be amended at any time, for instance, to accommodate major development projects (Studsholt 2000).

In the county, regional planning implements common national interests and it establishes the main guidelines for land use and infrastructure outside the urban zones in each region. The Ministry of the Environment and Energy of Denmark advises the counties to revise regional plans which take place every four years. Before the revision of a regional plan, the County Council has to publish two reports. The Planning Report has to contain an assessment of the development in the region and the previous planning as well as the anticipated changes in the forthcoming plan. The Debate Report must notify the major issues in the forthcoming planning and solicit

ideas, proposals, and so on in preparation for the planning work (Elling 2000 and Studsholt 2000).

There are steps that help to prepare regional plan of Denmark (Noble and Harriman 2008). Figure 3 shows the first step of the regional planning. Solicitation for ideas initiates the first public hearing period, for two to four weeks decided by the County Council. Information received from the general public is incorporated into the drafting of the forthcoming plan. After the County Council has adopted the draft plan it is then made publicly available for comments. A second public hearing is set for a minimum period of eight weeks after the draft plan is submitted for public review. Proposals or objections from the second hearing must be taken into account by the County Council and incorporated in a final regional plan for adoption by the County Council if no objections from national, regional or municipal agencies are raised (Elling 2000). Wood and Dejedour (1992) assert that one of the advantages of SEA is to facilitate the consultations between authorities and to enhance public involvement in evaluation of environmental aspects of policy, plans and programme formulation, which is reflected in Denmark regional plan procedure.

Trial runs and Consequences for Integration SEA into Regional Planning

As to Elling (2000), before further steps were decided some trial runs were carried out in order to gain more experience in assessing the guidelines in the Northern Jutland Regional Plan 1993 and how the guidelines interacted in an environmental dimension. The trial runs included methods, crosschecks, and ways to reduce the number of relevant guidelines to be assessed (See Box 1). Therefore, this helps the country to avoid costly mistakes, improve good governance and build public trusts and confidence in decision making.

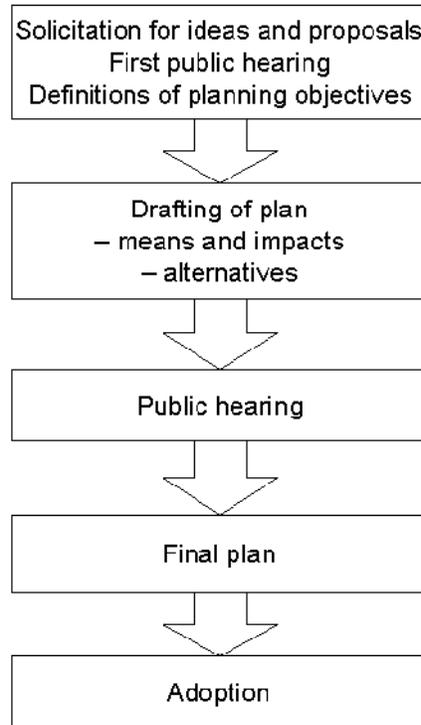


Figure 3. Regional planning procedure in Denmark

Box 1. Trial runs on Northern Jutland Regional Plan 1993

An assessment of every single guideline in the Regional Plan 1993, to decide whether it can be assessed as impacting the environment positively, negatively or neutrally; and to decide on some manageable techniques for doing it. On each guideline a systematic crosscheck is done to identify potential areas of environmental conflict in the plan, to which special attention should be paid in the plan revision.

A qualitative crosscheck of planning areas to identify those in between which objectives and guidelines counteract in environmental terms, and to which special attention should be paid in the plan revision. In contrast to the systematic crosscheck, the qualitative crosscheck was defined on the basis of an assessment of potential conflicts between the objectives of the planning areas. The guidelines are divided into planning guidelines and priority guidelines. Of these only priority guidelines should be assessed. Planning guidelines were defined as solely involving definitions or requirements for the subsequent planning actions that did not include any form of weighing or prorating interests with consequences for the environment.

(Source: Elling 2000)

After the trial was run the findings were summarized as follows (Elling 2000):

- An effective assessment of guidelines is in a number of cases highly dependent on clear-cut objectives and strategies in the plan;
- Subjectivity in the assessment of guidelines differs with the individual methods or techniques; this can militate in favour of using different assessment techniques and of summarising for each individual guideline, and/or of summarizing guideline assessments, for instance, for each planning area;
- In the case of a number of guidelines, it is difficult

to deduce an unambiguously positive or negative effect and often both positive and negative effects are involved; however, most guidelines can be assessed and considered as either contributing towards, or working against, sustainability;

- A number of guidelines can be pinpointed working against each other in environmental terms; this can indicate special problem areas to which attention ought to be paid in the plan revision process;
- The attempt to distinguish between planning guidelines and priority guidelines proved to be difficult to maintain, and likewise some planning guidelines could

nevertheless have a significant impact on the environment;

- Methods of assessment should be qualitative and thereby facilitate the summing up of both positive and negative impacts without hiding contradictory effects, for instance, short statements on which environmental criterion is affected and how;
- The trial runs pointed to an integrated assessment because vital knowledge on environmental impact, that could affect the drafting of the plan, appeared during the assessment process, although the results of the assessment of every single guideline could be slender;
- An integrated assessment can promote assessment effects on the drafting of the plan, while on the other hand it can reduce the transparency of decisions taken and priorities; this effect can be compensated by the inclusion of given priorities in the statements for each guideline, including alternative drafting and their environmental impact; and
- An integrated assessment makes more demands on the submission to the public and decision-makers, for instance, more comprehensive information: and at the same time, it increases the value of public participation to the final result.

These findings also called attention to some consequences for the integration of an environmental assessment, such as the use of scoping processes to define the scope of the plan and the environmental assessment, and the use of environmental criteria. Furthermore, the use of qualitative methods could: make explicit both positive and negative effects; make explicit conflicting guidelines in environmental terms; facilitate submission of results and the summing up of assessment results in planning sections and for the plan in total; and facilitate public participation.

Moreover, an integration of the environmental assessment should be able to satisfy commonly recognized and fundamental principles for SEA, namely documentation, procedure, significance, alternatives and public participation. Documentation of the environmental effects could be integrated in the planning document. Integration of the assessment in the planning procedure would satisfy the principle of a fixed and previously known procedure. The principle of significance could be satisfied by the use of environmental criteria and inputs coming from the public participation. Besides this, criteria for significance will not be needed at the regional planning level, as they would be equivalent to environmental criteria. Alternatives could be included in the statement for drawing up every single guideline, its environmental effects and likely alternatives. As already outlined, the provision for the regional planning procedure requires public participation in two separate stages. Therefore, Elling uses the principles for the integration of SEA in to the regional planning process of Denmark (Elling 2000).

Model for Integration SEA into Regional Planning in Northern Jutland Council

By comparing these principles with the legal provision for carrying out regional planning in Denmark and planning practice in Northern Jutland Council, it appeared that not only they could be integrated in the existing planning process, but they would also be strengthened further by doing so. By including the applied environmental criteria for the assessment of the existing plan in the Debate Report and encouraging the public to comment on their application in the assessment integrated into the forthcoming plan, the public would be involved in the scoping of the plan and of the environment assessment. Moreover, involvement of the public in the scoping of the environmental assessment and in the second public hearing of the draft plan, including a draft environmental assessment, would strengthen the idea of applying qualitative methods in the assessment to facilitate public participation (Elling 2000).

A brief outline for integrating SEA in the regional planning procedure together with some basic details about the environmental assessment is presented. This procedure is a model for the integration of SEA in the regional plan revision process (Elling 2000). It is also asserted by Therivel (2004), Fischer (2007), Dalal-Clayton and Sadler (2005), UNEP (2004), and Mulder (2012). According to Elling (2000) the procedure includes five separate phases, each including several steps (see Figure 4). These are:

Phase I is a scoping of the existing plan, how far it includes environmental protection, as well as an identification of environmental criteria to be used in phase II and as draft environmental criteria in phase III.

Phase II is an environmental assessment of the existing plan, and its findings will contribute to the identification of a scope for the new draft plan.

Phase III starts with a solicitation for ideas and proposals for the scope of the new draft plan and for environmental criteria (first public hearing). Further steps are the definition of planning objectives, strategies and guidelines for the new draft plan, and an environmental assessment of each of these

In Phase IV the new draft plan, including the statement of the environmental assessment is published and submitted for the second public hearing.

In Phase V, the final new plan is defined and adopted on the bases of the findings from the second public hearing. The crucial steps in the planning revision are taken in Phase III. Figure 5 outlines the single steps. On the basis of an assessment of the existing regional plan, the scope of the new draft plan is established by carrying out the Planning Report (including the results from the assessment of the existing plan) and the Debate Report (including the draft environmental criteria, to comment on). After the first public hearing the drafting of objectives and strategies and an assessment of their

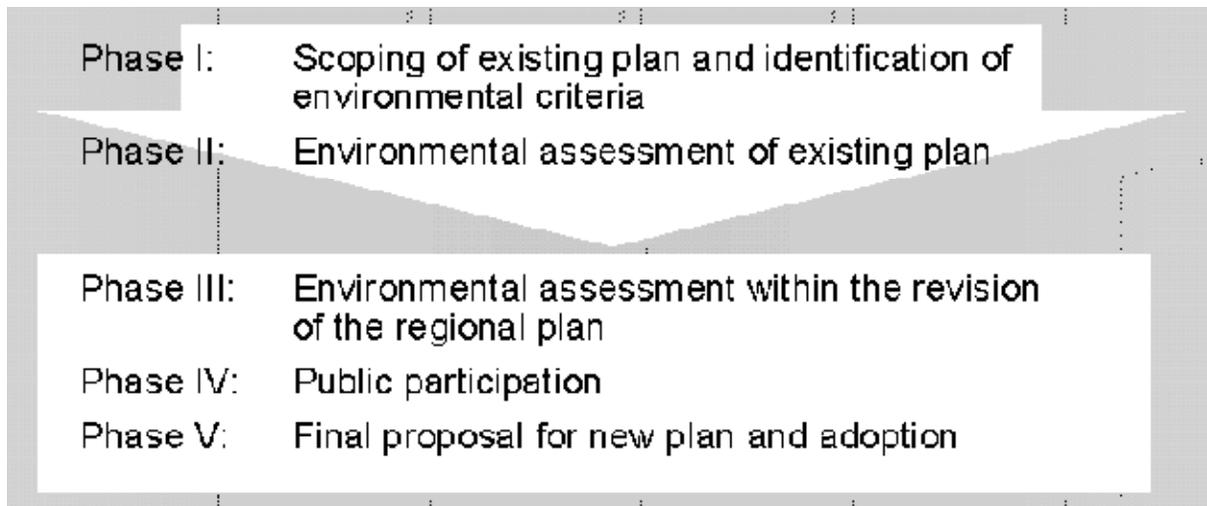


Figure 4. Procedure for integrating SEA in regional planning in Denmark (Elling 2000:237)



Figure 5. Environmental criteria (Elling 2000: 238)

environmental effects takes place.

Finally, Elling (2000) article's presents an evaluation of the entire process, which is carried out by survey interviews among planners, citizens and politicians. The interviewed were not only simply asked about their view on what happened on the integration of SEA in to the regional planning but also on what could be done to improve the assessment according to their experience with environmental assessment, regional planning, and political decision-making. The main results are that:

- Integrating SEA in the elaboration of the plan establishes a new environmental dimension of planning;
- Practising SEA on this superior planning level demonstrates its true political-democratic character; and
- Changing the superior *planning* objective to include environmental concerns.

Lesson Learned from the Case Study

From the review made in general and the case reviewed

in particular important lessons are drawn for developing countries like Ethiopia that have greater demand to apply SEA into the policy, plans and programme. The lessons drawn are:

- Inviting people to hear the objective of the plan to collect ideas from the public to prepare draft plan before SEA;
- Making review and comment on the draft plan and incorporate objection and comments (if any);
- Checking the effectiveness of the draft regional plan by performing trial run on the priority regional plan;
- Comparing the principles (documentation, procedure, significance, alternatives and public participation) with the legal provision to carry out regional plan;
- Integrating SEA into regional planning revision by using principles, procedures and models that fits for the purpose;
- Giving emphasis for environmental assessment phase which is crucial steps in planning revision;
- Integrating SEA into regional planning create

images of the future state of development, natural change, and cumulative change in a region;

- Evaluating the entire process by inviting planners, citizens and politicians;
- Encouraging more frequent requests from partner governments to institutionalize SEAs together with the political will to follow the process;
- Providing capacity development in SEA methodology that focuses on “learning by doing”, rather than on traditional training courses;
- Implementing effective SEAs and environmental governance systems that involve government, civil society, private sector and the media; and
- Demonstrating clear links between well-functioning ecosystems, sustainable economic development and poverty reduction (OECD 2012).

SUMMARY AND CONCLUSION

With an unprecedented need for the integration of sustainability principles in the development of regional PPPs, the timing is right to set a foundation for R-SEA as a means to support the development of strategic, sustainable initiatives on a regional scale. The environment is now recognized as an integral component of economic development and societal well-being. Conducting SEA can assist governments in anticipating how the implementation of development plans and policies may impact on the environment. Therefore, SEAs can be used as tools to ensure that environmental considerations are integrated into PPPs for better development outcomes.

SEA in principle can be applied to policy levels but it only addresses plans and programmes. It is the ‘big brother’ of environmental impact assessment (EIA) for projects, which has been applied to a large extent in many countries worldwide. It is defined as the systematic and comprehensive process of evaluating the environmental effects of PPPs and its alternative. The SEA has passed three development phases. From 1970 to 1989 they are called *Formative Stage*; from 1990 to 2000 *Formalization Stage and Extension stage* (2001-onward).

There is growing of interest in SEA because of the rising awareness of the limitations of traditional project based EIA, and the need to integrate environmental considerations into the development planning in order to promote sustainable development. Because areas subject to SEA cover wide range of PPPs, including sector-specific PPPs, spatial and land use plans, regional development programmes, natural resource management strategies, legislative and regulatory bills, investment and lending activities, international aid and development assistance, structural adjustment funds and operations, macro-economic policy and budgets and fiscal plans. Most attention is given to proposed actions in specific

sectors that are known or are likely to have significant environmental effects, for example, energy, transportation and industrial development; and spatial plans, regional development programmes and resource management strategies. Hence, SEAs is potentially powerful tools that go beyond the impacts of individual projects by assessing the sectoral, regional, or policy-related linkages of environmental issues.

Regional Planning usually takes place at both the national and regional levels. SEA has emerged as tools which aim to integrate environmental considerations into proposed policies, plans and programmes. An increasing number of countries and international organizations, such as the Netherlands, EU, World Bank (WB), have introduced SEA systems. Moreover, regional strategic environmental assessment is about informing the development of strategic initiatives, PPPs for a region, and thereby facilitating an opportunity for more informed and efficient downstream project based on environmental impact assessment and regional environmental management initiatives. Therefore, the integration of environmental concerns within regional planning aims to reduce the possibility of any dislocation between environmental, economic and spatial processes.

In principle, R-SEA is based on reconceptualization of the relationship between the assessment of cumulative environmental effects and SEA – a process designed to systematically assess the potential environmental effects, including cumulative effects, of alternative strategic initiatives, PPPs for a particular region. R-SEA is more than expanding the boundaries of EA up to a higher tier or out to encompass a broader geographic area; it rather, represents a different way of approaching the relationships between environment and development decision making at a regional scale.

The application of SEA into regional planning of Northern Jutland County in Denmark is a selected case which serves as the best experience. In the county to integrate SEA into regional planning various procedures and principles were followed. Even the pilot is done for crosscheck for the issues, which is categorized as the priority guidelines. This helps decision makers to avoid the costly mistakes before they proceed with further steps. After the trial runs the draft plan is revised for final adoption, in which further steps such as scoping, environmental assessment on existing plan, environmental assessment on the revised plan, public participation and final for the new plan and adoptions were made. Developing countries can take some lessons from the Denmark to integrate SEA into their regional planning for their sustainable development for their regions.

It is possible to conclude that for the integration of the SEA into the regional plan commitments, will of the government, public and the stakeholder participation plays a decisive role. Therefore, to integrate SEA into the regional planning process, the obstacles that may hinder

to follow the principles and the procedures have to be avoided. Moreover, it has been stressed, as it is very likely that the implementation of SEA would require a level of cooperation and commitment. Successful implementation demands a level of commitment and collaboration that is not common in project-based EA. In absence of such commitment and collaboration, the output of R-SEA, regardless of how methodologically sound the process is, will result in less-than-effective strategic initiatives or, even worse.

In conclusion, the focus of integrating SEA into regional planning is to inform the development or evaluation of alternative strategic policies, plans, or programmes for a region to incorporate the environmental consideration. It is important to compare those alternatives based on their potential for cumulative environmental change, and in consideration of various socio-economic, environmental, and planning objectives. Furthermore, it is the central government that can make the biggest difference on environmental integration. Hence, it is time to call each stakeholder to accelerate the role they have played to date in advancing better integration of environmental factors in development planning soon. And also it is needed a focused and coordinated effort to sustain the momentum achieved by all major stakeholders in development cooperation.

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