Fondazione Eni Enrico Mattei

Towards An Analytical Strategic Environmental Assessment

The ANSEA Network

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SUST – Sustainability Indicators and Environmental Evaluation

Towards An Analytical Strategic Environmental Assessment - ANSEA

Summary

The objective of the Analytical Strategic Environmental Assessment method is to provide a complementary and decision-centred approach to the SEA process. The focus is to evaluate the decision-making process instead of the quantitative output of an assessment. Thus, the project provides a methodology and the relevant tools to analyse and assess the decision-making process of policies, plans and programmes (PPP). By considering the whole decision-making process, decisions most critical to the environmental impact of PPP can be identified. The ANSEA approach is designed to be used as an objective and transparent approach to ensure that environmental considerations are taken into account, or as an evaluation of how far environmental integration has been achieved in decision making processes.

Key Words: Environmental Assessment, Impact Assessment, Strategic assessment, SEA, SIA, EIA, DM Planning, decision-making, Strategic Environmental Assessment, Sustainability Impact Assessment, Environmental Impact Assessment

JEL: O20, Q20

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Given the nature of the project all participants recognise a unique common authorship of the results published here.

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Introduction to ANSEA

Developing a Strategic Environmental Assessment approach

The ANSEA project has developed an approach to environmental assessment based on decision-making sciences to ensure integration of environmental values into the decision-making process. This approach, hereinafter referred to as the ANSEA approach, was developed to contribute towards the systematic integration of environmental protection objectives and measures in strategic decision-making. Given due consideration to the overall context of application, this approach will contribute to the promotion of sustainable development.

The ANSEA approach has been developed at a time when the practice of Strategic Environmental Assessment (SEA) is growing and extending to more and more applications. In June 2001 a new EC Directive was adopted, Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, to be implemented by the member states within three years. More learning and approaches to SEA are needed to respond to such legislation and to achieve a better integration of environmental protection objectives.

The objective of the ANSEA project is to provide a complementary and decision-centred approach to the SEA process. By considering the full decision-making process, those decisions most critical to the environmental impact of the plan, programme or policy (PPP) can be identified. Applying criteria for the procedure undertaken in each of the Decision Windows that have environmental implications allows for careful consideration of environmental values.

The ANSEA approach shares an overall remit, certain procedural steps, and the increasing focus on decision-making processes, with the more commonly known forms of SEA. It differentiates itself from SEA in terms of the central object of assessment, which is the decision-making process itself, and focuses on an extended concept of assessment that merges the following dimensions:

- guidance for more transparent and informed decision-making,
- on-going evaluation throughout all environmentally critical planning stages, and
- overall procedural auditing.

In this document the background, rationale and concepts of the ANSEA approach are outlined in part I. The ANSEA Framework, containing a series of methodological steps to apply the approach, is presented in part II.

> *The ANSEA approach is complementary to SEA in the integration of environmental considerations into strategic decision-making.*

Key features of the ANSEA approach

By following a systematic approach to planning a decision-making process or evaluating a completed process the ANSEA approach provides an objective and transparent assessment. This is intended to complement the commonly uncertain prediction of likely environmental outcomes of strategic decisions associated with many SEAs.

The ANSEA approach attempts to do this by:

- building on recent practice and theory developments in SEA;
- focusing on the whole decision making process; and

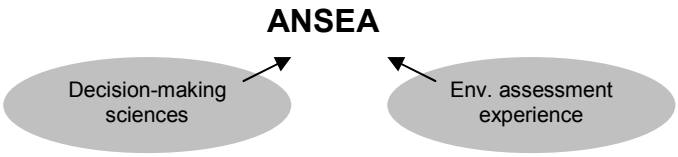
- integrating good decision making criteria and environmental values throughout the decision-making process (rather than once the decision has been taken).

In addition, the systematic ANSEA approach could be used for other types of assessment including sustainability, health and gender impact assessment.

> *The ANSEA approach is characterised by focusing on the whole decision-making process and integrating good decision-making criteria throughout, while also building on recent SEA experience.*

Why is there a need for the ANSEA approach?

The ANSEA project grew out of a recognition that SEA, as currently practised, is an insufficient tool to ensure integration of environmental values in many cases. From a practical perspective, SEA has often been focused on predicting the impacts while not understanding the decision-making process it is trying to influence. At strategic decision-making levels impact prediction is often infeasible or poor. From a theoretical perspective, more lessons could be learned from decision-making sciences. Effective interaction between the environmental assessment process and the decision-making process can be enhanced.



The ANSEA approach also has a specific role in facilitating application of the procedure outlined in the EC Directive on the assessment of certain plans and programmes.

> *The ANSEA approach was conceived due to practical and theoretical limitations of standard environmental assessment, when applied at strategic decision-making levels.*

Strategic Environmental Assessment and Decision Making

A simple definition of SEA is that it is the environmental assessment of a strategic decision, the formulation of a policy, plan or programme (PPP). A key objective of SEA is to change the way in which decisions are made by integrating environmental values into the decision-making process. Depending on the decision system, this may not be adequately achieved if the procedure and methods of SEA are based on modified EIA procedures and methods. This is partly because SEA deals with concepts and not with particular activities in terms of location or technical design, i.e. the object of assessment is different and more complex. The ANSEA project offers a practical approach adjusted for different information needs. The focus of the ANSEA approach is not on the analysis of the environmental consequences of decisions but how to influence the process, priorities, issues and values in decision-making. The argument that the emphasis should be on process rather than output in SEA is therefore picked up by the ANSEA approach.

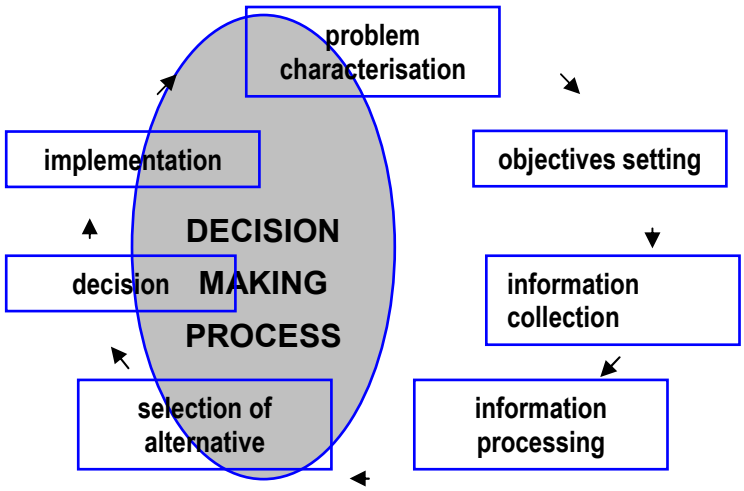
> *Realising different kinds of information needs in environmental assessment, the ANSEA approach is focused on the decision-making process rather than on environmental consequences.*

Lessons from decision-making sciences

Decision-making sciences reveal that uncertainties, information gaps and cognitive limitations are typical features of environmental decision-making. Often facts are uncertain, values are in dispute and stakes are high. Therefore, there is a need to move beyond the prediction of environmental consequences as the centrepiece of environmental assessment. Decision-making sciences offer several approaches, which might be a starting point to describe and understand the decision-making context

and the way in which it conditions the environmental assessment. Despite the central importance of the decision-making context for the performance of environmental assessment, few researchers have attempted to make the connection.

Building on decision-making sciences, the ANSEA approach is based on the argument that there is a need to reorient environmental assessment toward an approach that is more sensitive to the real decision-making context. It is designed for decision-makers and others, who want to think systematically about environmental factors in decision-making. A set of procedures should be applied to the decision-making process to ensure the consideration of its environmental implications at all stages in the process. By making criteria and values explicit, a complex decision-making process becomes more transparent and controllable.

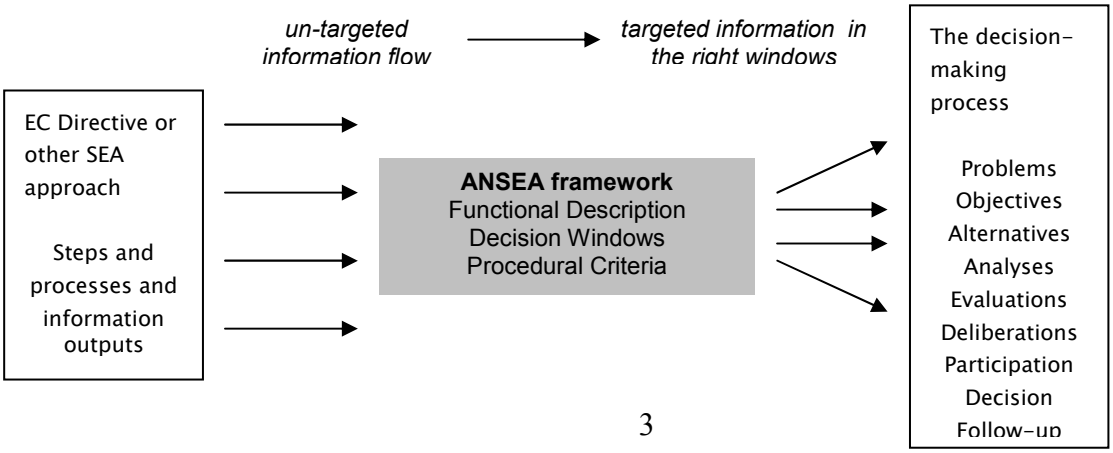


Developed from a decision theory perspective, the ANSEA approach recognises the limitations in predicting environmental impacts from complex decisions and therefore proposes a framework based on explicit criteria and values.

ANSEA and the EC Directive

The recent EC Directive 2001/42/EC on the assessment of certain plans and programmes, also called the "SEA Directive", presents challenges to environmental assessors. The ANSEA approach can serve as a vehicle for translating the Directive and its requirements into assessment processes in practice.

ANSEA is an approach that supports the integration of the outcome of a standard SEA into the decision-making process. Hence, it can be said to act as a bridge between an environmental assessment and the decision-making process. The Decision Windows identified in an ANSEA assessment tell us *when* environmentally relevant information can enter the process effectively. The Procedural Criteria inform us *how* this information should enter and be processed. In this sense, the ANSEA approach is set up to support the application of the EC directive. It is designed to lead the way into the decision-making process.



The ANSEA approach can support the application of the EC directive, by helping to find the key moments when environmentally relevant information should enter the decision-making process and how it should enter.

ANSEA concepts – a process perspective

The object of analysis in the ANSEA approach is thus the relationship between the decision-making process and principles of good decision-making. To develop a framework for a conscious, well-considered environmental assessment process that recognises the real characteristics of the decision-making process itself, three aspects should be considered:

- First, the assessor needs to understand and characterise the decision-making context in which the assessment is applied.
- Second, it is necessary to understand the relations among each of the individual decisions within the larger process in order to identify the moments in the decision-making process where values are at play and where environmental implications exist.
- Third, a set of criteria is needed, to be specifically developed for the decision-making process and applied to each of the identified decision moments with environmental implications.

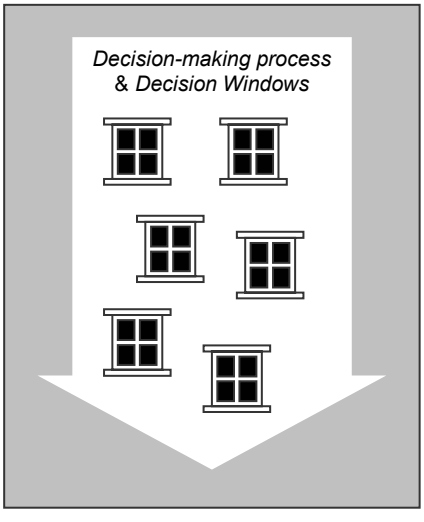
To consider these aspects and make such an assessment process practical, the ANSEA project has developed the following concepts and tested them in case studies on various types of PPP settings.

Case studies in the ANSEA project

Case studies were used to test and revise the ANSEA concepts. Nine different case studies were conducted by the ANSEA partners covering seven countries and several policy areas.

- Afforestation of agricultural land in Spain – UPM
- Waste management plan of Liguria region (Italy) – FEEM
- Urban planning in Puerto de la Cruz (Canary Islands, Spain) – TAU
- Humber Estuary shoreline management plan (UK) – ERM
- Country strategies in Swedish bilateral development cooperation – SEI
- Spatial planning in Ijburg (the Netherlands) – IIUE
- Expansion plan for the electric system for public service (Portugal) – FFCT
- The federal transport infrastructure planning (FTIP) in Germany – WI
- Aeolian plan in Castilla y Léon (Spain) – TAU

In order to understand the decision-making context a **functional description of the decision-making process** needs to be made. This is a description of the sequence of all different sub-decisions in the decision-making process and the functional relations between them. In order to be comprehensive and realistic, the description should be preceded by an understanding of the legal and institutional context, the actors and stakeholders involved, the links to other PPPs, and the key environmental issues associated with the overall decision. The functional description helps to understand the context of the decision-making process and provides a basis for the identification of Decision Windows. (In part II, page 10 there is an example of how a flowchart supporting the functional description may look.)



Decision Windows are moments in the decision-making process where critical choices are made which have environmental implications. These windows, which vary in type and number in different decision-making processes, are thus windows of opportunity for integrating environmentally relevant information and values. The direct or indirect **environmental implications** defining a Decision Window need to be carefully described before assessing the Decision Windows.

An example of a Decision Window identified in the ANSEA case study on Spanish urban planning is the classification of land use preceding the decision-making stage of identifying different options. It was found that a high degree of discretion was used in the classification and that it was not based on adequate information about future demand and environmental variables. Because the land use classification is far from uncontroversial and has potential environmental implications, this moment in the decision-making process qualifies as a Decision Window.

Another example, from the case study on German federal transport planning, is how to use a specific tool in the decision-making process, Cost Benefit Analysis. If the analysis does not include external costs such as carbon dioxide emissions, the result (a cost-benefit ratio) might favour a larger expansion of the transport network than would be consistent with environmental protection values.

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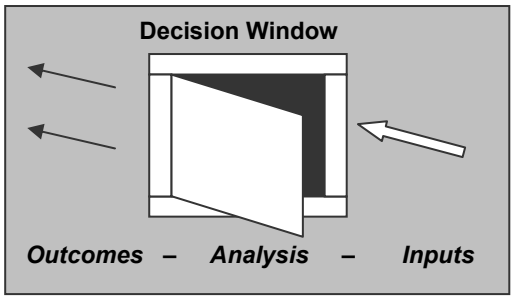

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Decision Window consists of three components: **Inputs, Analysis** and **Outcomes** (the IAO framework). Inputs refer to data and information as as values and opinions. In the Analysis, the inputs considered either formally (e.g. cost benefit analysis modelling) or informally (e.g. expert judgement and group discussion). The Outcomes can be both formal and informal, and will act as inputs in subsequent Decision Windows.

The ANSEA approach then prescribes the application of **Procedural Criteria** to the Decision Windows. Procedural Criteria are prescriptions on how a decision should be taken in a particular Decision Window in terms of Inputs, Analysis and Outcomes. They are based on principles of good decision-making and should represent values that are commonly accepted and held by society. Even if the criteria will contain a subjective element, they will enable a systematic and transparent consideration of values in the process. The following ANSEA principles of good decision-making constitute a generic list that has been based on literature review, good practice and the case study experience:

- comprehensiveness
- timeliness
- transparency
- participation
- credibility.

If a decision complies with these criteria it can be assumed that environmental values are incorporated. In addition, due to their generic character these principles could be used for other forms of process assessments (e.g. social and gender assessment).

Below is an example of how an assessment against some of these generic Procedural Criteria may look. The example is taken from the ANSEA case study on Swedish bilateral development co-operation and the Decision Window (divided into IAO) concerns the specification of the issues to address in the preparation of a Country Strategy (e.g. education, health problems, democratic reforms).

Generic Procedural Criteria	Inputs	Analysis	Outcomes
Comprehensiveness	Comprehensive inputs depend on and must be secured in the previous Decision Window (of Background/context).	N/A	Ensure that the environment as an issue and/or as an aspect of other issues is part of the understanding of the development situation.
Timeliness	Ensure that the initiation of the CS process is well planned in advance. Due to the regularity of the CS process, this should be no problem.	Consider whether more time is needed for initial discussions and deliberation than at present, since the outcome generally influences the rest of the process to a large extent, e.g. what studies to make and what Sida activities to propose.	While this stage must necessarily take place early to guide the process, there is also the risk that it may be difficult to depart from the agreed specification and objectives as new information enter the CS process.
Transparency	See DW Background/context.	Consider how to document discussions and underlying assumptions and make them accessible to interested parties.	Consider how to make the issue specification public, directly after it has been reached, e.g. web publication, web newsletter.

When can the ANSEA approach be used and by whom?

The concepts in the ANSEA approach and associated framework (see part II) are designed to be flexible and applicable in a range of contexts.

- ***For many types of PPPs***. The framework can be used both for such PPPs with significant and identifiable environmental implications and for such PPPs with more indirect impacts, since the immediate focus is on process rather than impact prediction. The approach is especially useful in decision-making contexts characterised by a high degree of uncertainty regarding environmental impacts. Furthermore, the ANSEA approach is useful in processes where there are growing requirements for transparency and accountability.

- ***For different purposes***. The framework is adjusted for two different modes of use: integrated with the decision-making process and as an evaluation exercise after the process has ended.

- ***By different users***. The ANSEA approach is designed for decision-makers, environmental evaluators and environmental assessors, who want to examine decision-making systematically. The assessors using the ANSEA approach can in each individual case determine the level of detail and the amount of resources spent on the assessment.

The ANSEA approach is flexible and can be applied in a range of different contexts and by different actors.

From concepts to framework

Based on these concepts an ANSEA framework has been developed (part II). The main purpose of the framework is to facilitate the improvement of the decision-making process by helping the assessor specify Procedural Criteria and assess identified Decision Windows. The framework was developed with the relationship to SEA and the EC Directive in mind.

Comparing the ANSEA framework with general benefits of environmental assessment and the principles set out in the Directive reveals the key contributions of the ANSEA approach.

General benefits of SEA	The potential contributions of the ANSEA approach
Advocacy and Awareness raising *EC Directive Art. 1*	The principal role of the ANSEA approach is to act as an advocate of environmental (and sustainability) values throughout a decision-making process, starting from the earliest possible phase of planning and/or policy making. In doing so, all steps in the ANSEA framework will contribute to a more general awareness raising process, the effects of which can go beyond the specific boundaries of the PPP under assessment, to influence the wider organisational and institutional structures.
Collaboration, Co-ordination and Communication *EC Directive Art. 6*	The emphasis in the ANSEA approach on the organisational structure and the decisional boundaries (including what preceded and what will follow the decision on the PPP under assessment) is aimed at maximising co-ordination and integration across strategic planning levels, down to single projects (Scoping stage). By calling for a clear overview of the organisation and stakeholders involved, it aims to promote collaboration, and effective and transparent communication. The interaction between different parts of the organisation(s) involved and the stakeholders should lead to mutual learning.
Information on Environment and Sustainable Development *EC Directive Art. 1*	The input and subsequent utilisation of information and data during various stages of the DMP is at the centre of the ANSEA framework. Information is part of one of the three key dimensions of the IAO framework: Input-Analysis-Outcome. The aim is to ensure that the quality of the information, and the manner in which it is introduced and used in the decision-making process, is at the highest level possible.
Institutional issues and Long-Term Change *EC Directive Preface §1*	The focus of ANSEA on the decision-making process and the institutional and organisational context (Scoping, Functional Description and Decision Windows steps) can lead to gradual change in the overall context of policy-making towards long-term integration.
Guidance *EC Directive Art. 4 and 8*	When applied before and during the decision-making process, the main contribution of the ANSEA approach is the provision of recommendations and detailed guidance on the procedure, which should secure the integration of environmental and sustainability values throughout the decision-making process.
Transparency and Accountability *EC Directive Art. 4 and 8*	The two modes of assessment, integrated and ex-post, are designed to maximise the impact of ANSEA, but also the transparency and accountability of the decision-making process under assessment. The recommendations/guidance (integrated mode) and the audit-type evaluation of the entire decision-making process (ex-post mode) provide substantial auditable material.
Monitoring and Quality Control *EC Directive Art. 10*	The Procedural Criteria in the ANSEA approach highlight the importance of quality control at all stages of the DMP. Their application in an ex-post assessment provides the means of promoting quality control.

By applying the ANSEA approach through the specifically developed framework (see part II), several of the benefits generally associated with SEA can be reaped, for example raising awareness, improving communication and co-ordination, and introducing transparency and accountability.

The ANSEA framework

The ANSEA framework and SEA

The ANSEA framework adopts similar steps as in standard SEA practice, but gives them a wider and sometimes different role. While many SEAs helps to predict potential environmental effects of proposed PPPs, the ANSEA approach concentrates on ensuring that the Decision Windows of a decision-making process are carried out coherently with the Procedural Criteria, to maximise environmental integration in decision-making. Thus, the method presented here should be considered complementary to the common SEA approaches and as a supportive approach in relation to the EC Directive. Its application – stand-alone or in conjunction with a SEA – will strengthen the environmental quality of the final decisions.

The three key elements of the framework

- **Understanding the decision making process** (DMP) as a series of moments which could each have real environmental implications;
- **Identification of Procedural Criteria** which reflect principles of good decision making in the context of this particular decision making process;
- **Assessing** whether these principles or Procedural Criteria have been fully taken into account at each of the decisive moments, the **Decision Windows**.

Two Different Modes of Assessment

- **Integrated** – the framework can be used to support the planning of the PPP decision-making process and to concurrently assess Decision Windows as they appear in the process.
- **Ex-post (assessment or audit)** – once the whole decision-making process has been completed, the ANSEA framework can be used to carry out an ex-post evaluation of the quality of the whole process.

It is important to remember that PPPs are often long-term and iterative procedures. As a result the ANSEA framework or particular aspects of it may be used before, during or after the DMP or in different ways for different aspects of a PPP.

Who should carry out the assessment process?

At high levels of strategic decision-making the interplay of actors often becomes complex. The ANSEA approach can be carried out by either the proponents of the PPP decision-making process (with assistance if necessary) or independent assessors. Giving responsibility for the assessment to sector authorities ensures that there is a feeling of ownership of the process within the promoting body, encourages the long-term integration of environmental values and facilitates informed decision-making. Where the proponent of the PPP does not have the necessary expertise or resources to carry out an assessment this might be done by external experts. There may also be a strong case for independent review to ensure the process is properly applied and to maintain public confidence in its integrity. The decision about which institution undertakes an ANSEA assessment will depend on the legal framework within each country with implications for:

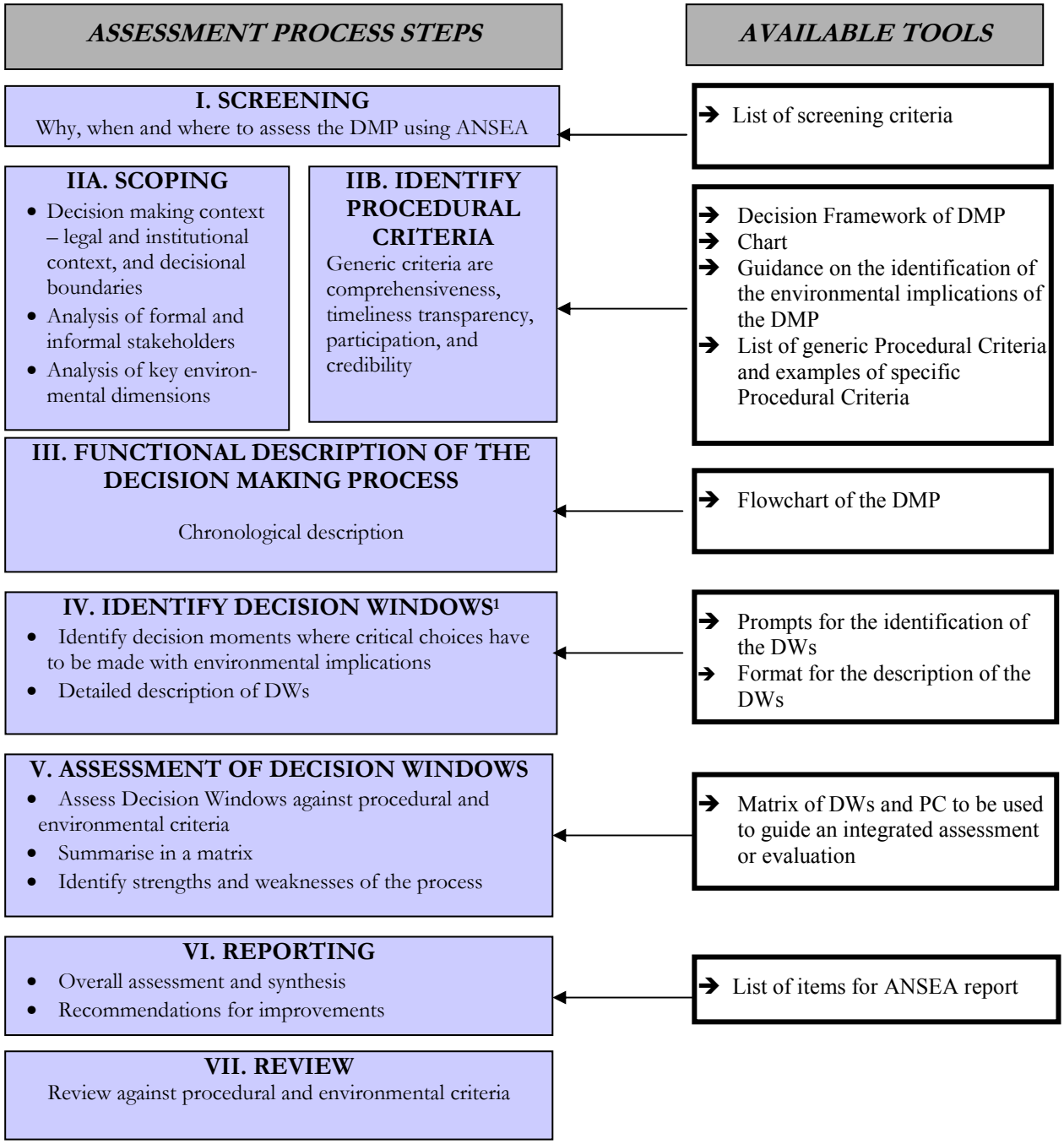
- the legal standing and the authority attached to the process and results;
- the level of access to information; and
- the timing and possible co-ordination of the decision-making and assessment processes.

In either case the participation of wider stakeholders early in the process is likely to improve the quality and usefulness of the ANSEA approach.

Resource requirements

On the basis of case study experience with applying the framework in the ANSEA project, it is clear that the level of resources required will vary considerably. At one end of the scale, the planning of a fairly straightforward and abstract decision-making process may only require a few well-structured workshops led by a skilled facilitator. At the opposite end of the scale an integrated assessment or ex post evaluation of a large complex PPP, such as a major transport strategy, would require many person months from a multi-disciplinary team. The ANSEA framework is however designed to be flexible for many types of applications.

This flowchart presents an overview of the procedural steps in the ANSEA framework.



I. SCREENING

The linkage between ANSEA and SEA, in terms of overall goals, is important at the screening stage. Considering the recent EC Directive on the assessment of certain plans and programmes (2001/42/EC), it is suggested that – as a minimum – the rules for screening should be equally applied in relation to ANSEA (e.g. transport plans, land-use plans). Despite that, the ANSEA approach can be applied to all policies, plans and programmes (PPPs) with direct or indirect implications for the environment (e.g. financial planning).

In identifying types of PPPs where an ANSEA approach would provide added value, consider the following criteria.

- ☑ Sectoral PPPs which are likely to have significant identifiable environmental implications, as identified by the Directive – agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use – and particularly those which are either very complex or intangible and which pose a considerable challenge to more standard SEA approaches.

- ☑ Financial plans and strategic plans in sectors where environmental implications are likely to be less direct and more uncertain but, nonetheless, important.

- ☑ Decision-making processes where there are growing requirements for transparency and accountability.

- ☑ Policies, plans or programmes which require other forms of assessment. The ANSEA approach with its focus on the decision-making process and assessment of how societal values are incorporated at each step could also be applied to wider sustainability, health or gender implications of a PPP.

Having decided that the ANSEA approach would be applicable to a given decision-making process, the assessor will need to prepare a terms of reference for the next steps of the study defining:

- the timing of activities
- who will be consulted, who will provide information and who will participate in the analysis
- how the results will be incorporated in the DMP
- how the results will be communicated and the form of the final ANSEA report
- the resources required for the assessment.

To support this planning of the assessment, the assessor can prepare two types of documents. Throughout the ANSEA assessment process it is important to communicate progress and findings to interested parties. This may take the form of a **communication plan**. During the Screening stage, the scope of this plan should be established and the interested parties identified.

At this early stage it is also necessary to decide whom to involve in the assessment process. In most participatory processes some form of consultation may be used to determine who the key stakeholders are and how they might best be involved at each stage. A **public participation strategy** for the ANSEA assessment should address the following key issues:

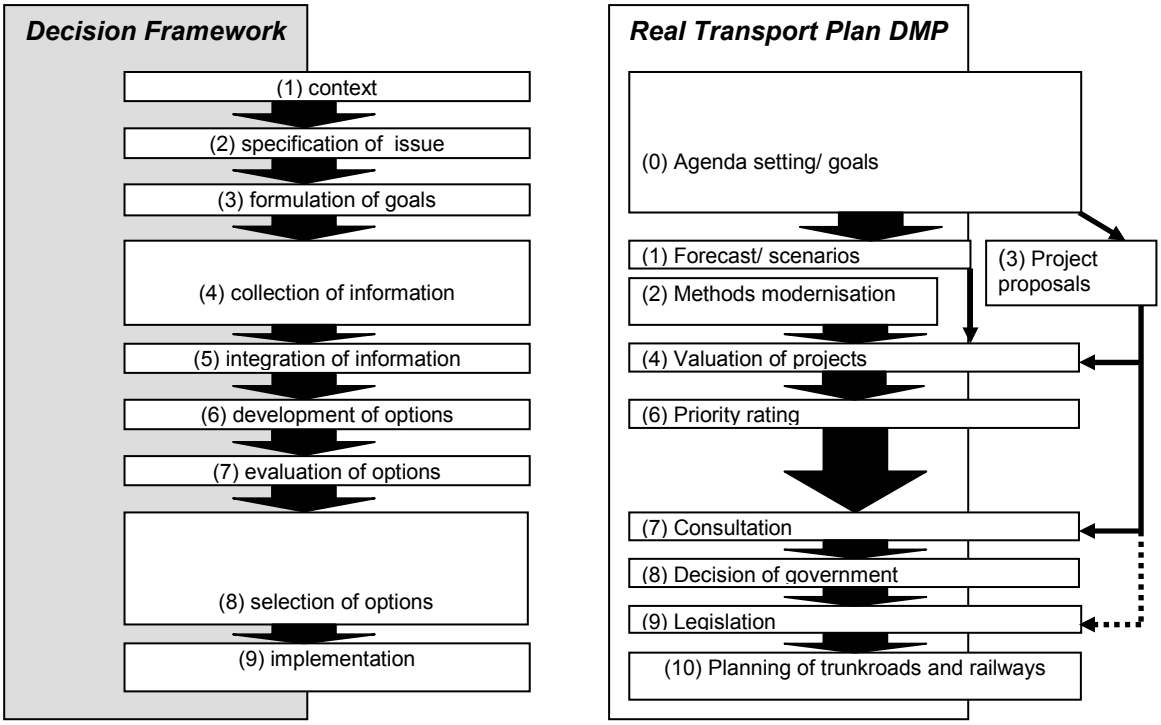
- The objectives of the participation process at each stage of the assessment
- Whether all relevant parties are going to be involved or at least represented in the process
- Whether the necessary resources have been made available to support participation
- Whether sufficient time has been made for participation within the timetable of the decision-making process
- Whether sufficient flexibility has been built into the process
- How public participation will influence the decision-making process at each stage

IIA. SCOPING

This step provides the foundation on which to build the assessments of the decision-making process. In particular, it provides an initial description of the decision-making process, a description of the legal and institutional context and the decisional boundaries, and a description of the organisational framework (actors and stakeholders). Spatial, temporal and organisational boundaries for the assessment are set. Overall, the activities developed during the scoping stage make an important contribution to all subsequent stages in the assessment. Especially the detail of the functional description is based on results of scoping. There are three tasks (A-C) related to the scoping step.

A) Initial description of the decision-making process

In order to understand the rough structure of the decision-making process to assess, it can be initially described in relation to a standard, rational decision-making process. The Decision Framework provides a reference model and helps the assessor to get a first conception of the nature of the process. It is likely that different views of the decision-making process will become obvious when doing this and that the process structure will be set on the agenda. Furthermore, the Decision Framework is a tool to focus the assessment on the difficult stages. Below the Decision Framework is illustrated (shaded box) along with an example of how a real DMP compares with it (white box, the example is taken from the ANSEA case study on German federal transport planning).



B) Description of the legal and institutional context

The legal and institutional context for the PPP is very important in understanding the type of DMP process and what it will influence and when. The role and scope of the PPP to be assessed can be understood by mapping its decisional boundaries and its context. Two key issues to consider are:

- the link between the PPP to be defined and environmental policy and legislation; and
- the link between the PPP to be defined and other sectoral and economic policies and legislation.

These links can relate to (1) current and/or future policies and legislation, (2) PPPs at higher and lower levels in the relevant sector or context, (3) local, regional, national or international policies and legislation, and (4) state-of-the-environment reporting which can provide the background and context within which environmental impacts should be assessed. It is also important to understand what other assessment procedures will be undertaken to support the DMP and how the ANSEA assessment will relate to these. Understanding the decisional boundaries can be aided by asking these questions.

Legal and political context

- What is the legal and political context for the Decision (i.e. is the PPP statutory, is it a one off or part of a regular cycle, is it a new or established PPP, will it be repeated in other settings, etc.)
- Who is the proponent organisation, how long have they been established, what are their powers in relation to design, financing, implementation and monitoring of the PPP**?**

Objectives of the PPP

- What are the proposed objectives for the Decision/PPP being produced?
- How have they been identified and who has been involved?
- How do these objectives relate to the institutional context? (i.e. do they reflect the objectives of the proponent institution or are they externally driven?)

Timing of the decision

- What is the time frame for the DMP?
- When will the final decision be taken or is this stage already completed?

Assessment requirements and procedures

- Are there statutory requirements for environmental or other assessment of the PPP?
- What assessment procedures are envisaged? How do they relate to each other?
- How will the results of the assessment be taken into account in the DMP?
- What further assessments are expected once the PPP is approved?

Links with other PPPs and projects

- What relevant PPPs precede the Decision and its DMP?
- What links should be made between the Decision and other ongoing DMPs?
- What plans and programmes, or even policy directions will follow on from this Decision?
- How if at all does the decision relate to future project proposals?
- What is the geographical sphere of influence of the DMP?

C) Description of the organisational framework (actors and stakeholders)

The next step is to identify the organisations involved in the DMP and interested parties who need to be consulted. If the ANSEA assessment is initiated when planning the DMP, this step provides an opportunity for maximising co-ordination and integration of the organisations involved and gives an overview of stakeholders who could be involved and consulted.

There are two tools to support this step in the assessment. First, a stakeholder analysis allows the assessor to identify interests and stakeholders. A basic approach is to consider the following criteria:

- by impact and interest: directly affected, indirectly affected, possible interests, general interest;
- by sector: public private, NGOs, individuals; and
- by location: local, regional, national, neighbouring countries and international.

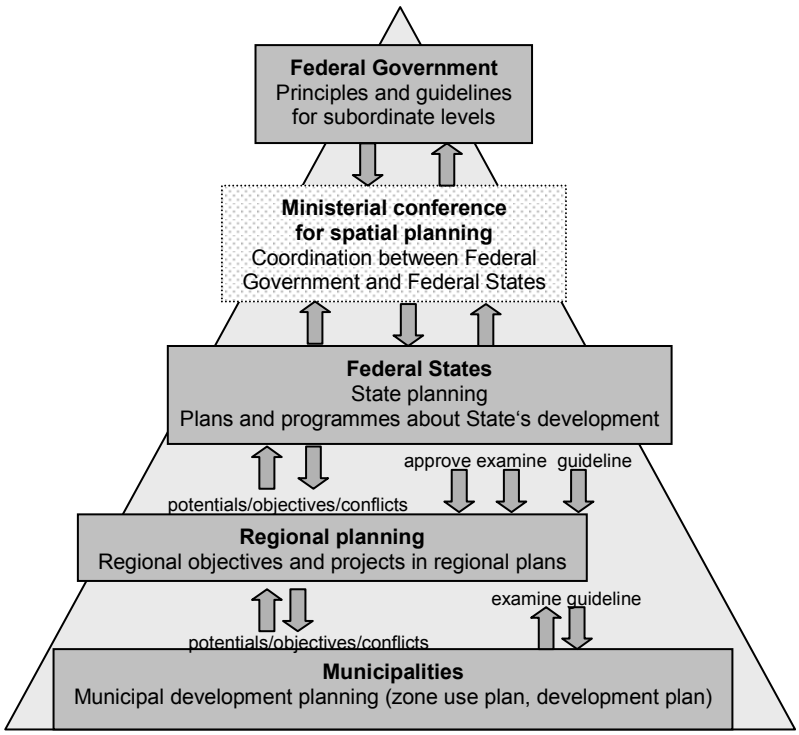
Key questions to guide the analysis are the following:

- Who is directly affected by the PPP being addressed?
- What are the interests of the various groups of stakeholders in relation to the PPP under consideration?
- How does each group of stakeholders perceive the PPP? What resources does each group bring to bear (positively or negatively) in relation to the PPP?
- What organisational or institutional responsibilities do key stakeholders have?
- Who should benefit from the PPP? What conflicts might a group of stakeholders have with a particular PPP strategy?
- What activities might be carried out that could satisfy the interests of the various stakeholders?

Second, drawing up a chart can help to set the border of the framework. It assists the assessor in determining which actors might be relevant while analysing the DMP, their relations and in what way they are involved, formally or informally. The aim of the chart is to answer four questions:

- Who is taking the initiative (organisation/contact person)?
- Who is responsible for (parts of) the DMP?
- In what hierarchy are the actors related to each other?
- Is the actor formally or informally involved in the DMP?

Below are two examples of charts, the first one reflects the roles of actors in German federal transport planning and the bottom one outlines the responsibilities in Spanish urban planning.



Stakeholder/Phase	INITIATIVE	DRAFT	NEGOTIATION	APPROVAL
CITIZENS		collaboration in setting goals	public information	
CITY COUNCIL	**responsible**	**responsible**	**responsible**	**preliminary approval**
ISLAND AUTHORITY			report on compliance with the Integral Territorial Plan of Tenerife	
ISLAND COUNCIL		Inter-council co-operation		
RIVER BASIN AUTHORITY		participates		
REGIONAL GOVERNMENT			consultation	**final approval**
ROAD OFFICE			report on compliance with the road plan	
ENVIRONMENT OFFICE			EIA report	
CENTRAL GOVERNMENT	Does not apply			

To address public participation mechanisms when describing the decision-making context at the Scoping stage is important. Public participation in the ANSEA assessment, when appropriate, should also be encouraged. In addition, participation is likely to be one of the key values for 'good' decision-making and thus a generic Procedural Criterion (see below).

Public participation and the ANSEA approach

The involvement of the public during a DMP and within standard SEA is considered a very important part of the process. It is seen as an excellent process to build a sense of ownership of the strategy and secure the support of the many different institutions who need to feed into strategic planning and are key to the successful implementation of the PPP. Good consultation, involving the public, can be complex, time-consuming and require careful direction with substantial cost implications.

Within most PPPs which might be subject to an ANSEA, the public could potentially be involved in each of the following decision moments:

- defining the problem to be addressed by the PPP;
- contributing to the definition of environmental and/or sustainability values, objectives and goals;
- contributing to the identification and definition of alternatives;
- contributing to the identification and definition of the key environmental issues and environmental assessment criteria which are relevant to the alternatives;
- contributing to the selection of alternatives;
- monitoring and follow-up.

The characteristics of these decision moments will differ with the requirements for inputs, becoming considerably more concrete in the later stages. As a result, the nature of the public who may be involved, and the role that any one individual or group takes throughout the DMP will also change. These aspects of public participation should be discussed and clarified at the earliest possible stage of decision-making in order to plan the involvement of the public, to maximise its effectiveness, and, where necessary, provide sufficient resources, capacity-building and time to allow relevant parties to contribute in the optimal way.

Public participation can provide input and insight into complex issues and early acceptance and agreement on PPPs with wide-ranging consequences, including the reduction of uncertainty. The effectiveness of public participation in the context of an assessment process can be measured in relation to a number of issues, including:

- What are the objectives of the participation process for each decision field?
- Are all relevant parties involved or at least represented in the process?
- Are the necessary resources available?
- Is the process open and transparent?
- Does the public participation process have adequate time within the timetable of the decision-making process?
- Is there sufficient flexibility in the process?
- Will public participation influence the decision-making process?

IIB. IDENTIFICATION OF PROCEDURAL CRITERIA

In SEA practice a mixture of objectives, indicators and environmental criteria are often used to carry out the assessment. Usually, these criteria tend to refer to substantive environmental issues (e.g. urban air quality standards, climate change and noise). The use of criteria in the ANSEA approach differs from this practice. The ANSEA approach places great emphasis on the need to secure some degree of procedural rationality in decision-making processes.

Procedural Criteria (PC) are prescriptions on how decisions should be taken. They are based on principles of good decision-making and provide a basis for assessing the quality of the process in a particular Decision Window (DW). They can be used ex ante as prescriptions, or ex post as evaluation criteria.

Having established that environmental values need to be taken into account, the ANSEA approach then assesses whether each step of the process has been sufficiently

- *Comprehensive* in terms of the scope of environmental issues covered at each step
- *Timely* in terms of when environmentally relevant information has been collected, made available and incorporated in the analysis
- *Transparent* in terms of the way the analysis has been undertaken and the environmentally relevant information has been taken into account
- *Participative* in terms of including the relevant organisations and individuals who may express different views on the inputs, analysis and outcome of a given step in the decision-making process
- *Credible* in terms of the quality, robustness and consistency of the inputs, analysis and outcomes of each step in the process.

It is worth noting that by incorporating a different set of societal values than environmental – such as sustainability, gender, health – the ANSEA approach could equally be applied to integrating wider sustainability values or narrower health and environment values into strategic decision making.

Step IIB involves two distinct but interlinked tasks:

- Defining substantive values, namely environmental implications and public participation requirements for the decision-making process being assessed.
- Defining generic procedural criteria for good decision making.

A) Defining substantive values for the decision-making process

Each Scoping task (in step IIA) should be carried out with a focus on the key environmental issues associated with the DMP. The aim is to develop a list of environmental issues and values to be incorporated at different points in the DMP. There is likely to be a hierarchy of values depending on whether they reflect:

- **Statutory requirements**. Some of these values are likely to reflect legislation at the EU or national level, particularly in relation to air and water quality, management of waste, conservation of protected areas.
- **Policy requirements**. Others will be drawn from European and national policies but may not be legally binding – such as limiting the emissions of greenhouse gases and protection of biodiversity.
- **Other targets**. Others may reflect the objectives of non-statutory targets set out in national or sectoral sustainable development strategies which are monitored against national indicator sets.

Guidance on the identification of the environmental issues is presented below. This focuses on:

- the environmental issues within the objectives and overall strategies of the PPP (drawing on the experiences of SEA);
- the consideration of alternatives and the opportunities to assess environmentally friendly alternatives within the SEA; and
- the environmental consequences of each decisional step leading to the overall outcome of the DMP.

The following list of issues, based on Canter (2000, Cumulative Effects Assessment), can act as an aide-mémoire for the identification of key environmental issues.

- Vulnerability of resources, ecosystems, and human communities to changes (stresses);
- Compatibility with [other] land use policies and plans;
- Compliance with environmental standards for air, surface water, ground water, and soil quality;
- Thresholds and carrying capacities for resources, ecosystems, and human communities;
- Effect on protected areas;
- Compatibility with sustainable development principles;
- Disagreement among experts as to the significance of anticipated effects;

In order to be systematic in the description of issues, a table such as that below can be used. First, different scales of impacts are identified, such as global, regional, national and local scale. Second, the spatial units over which impacts are addressed are identified, for example administrative boundaries, natural resource-related areas or PPP-related areas. Then the environmental issues are identified, e.g. air pollution, noise and reduced biodiversity. Lastly, objectives and indicators (if they exist) are described/determined.

Scale	**Spatial unit**	**Environmental Key Issues**	**Baseline objectives**	**Priority** (e.g. maximum, medium or minimum)	**Indicators** (if they exist)	**Observations/ Justifications**
National	Administrative boundaries	Bio-diversity	Maintenance			
		Rural sustainable development	Improve the capacity of lands			
	Administrative boundaries	Climate change	Reduction of GHG emissions			
		Air quality	Maintenance			

Having identified the key environmental issues, the proponents and the stakeholders involved should make clear the environmental values relating to these issues. The environmental values identified at this stage will be used for elaborating Procedural Criteria (see below), for identifying Decision Windows (step IV) and for assessing each Decision Window (step V).

B) Defining Procedural Criteria

The ANSEA approach involves the development of Procedural Criteria by identifying broad decision-making principles that facilitate the incorporation of the substantive environmental values. The Procedural Criteria are developed through a simple methodology containing three main steps:

- First, Procedural Criteria are based on values. Discussions surrounding both environmental and decision-making values should be encouraged.

- Second, identify broad decision-making principles based on these norms and values to facilitate the incorporation in the decision-making process, e.g. comprehensiveness, timeliness, transparency, participation and credibility.

- Third, define specific Procedural Criteria that make the principles operational in each of the relevant Decision Windows.

Based on the ANSEA case study experience, five generic Procedural Criteria have been identified for ANSEA assessments.

1. COMPREHENSIVENESS
Comprehensiveness implies that all relevant environmental (and sustainability) considerations are made throughout the DMP. The aim of a DMP should be to consider a broad range of potential (direct and indirect) environmental effects, all potential geographical impact areas, all potential stakeholder groups subject to exposure, a wide range of potential alternatives and all potential mitigation measures. This broad principle will be of relevance at many stages in the DMP and should be considered accordingly. For example,

- are environmental (or wider sustainability) goals included in the goal formulation?
- Are environmentally friendly alternatives included when selecting between PPP alternatives?

This principle is very likely to be in conflict with time and financial resources allocated to the DMP, and the assessors will need to determine where to draw the boundaries on available information. This potential trade-off should be dealt with in the beginning of the DMP. It is the task of the ANSEA to assess if this trade-off was appropriately made.

2. TIMELINESS
Performing various steps in the DMP in a timely way is a pre-requisite for providing opportunities to consider environmental values. Timeliness relates to receiving critical information inputs and producing outputs in time, as well as allocating sufficient time for specific tasks and decisions. For example, timeliness may relate to the availability of information to inform the participation of particular stakeholders or ensuring that an environmental assessment report/environmental study of different alternatives reaches the decision-maker well in advance of the decision. As with comprehensiveness, improved timeliness may conflict with the amount of resources made available for the DMP and any such trade-offs must be considered in the ANSEA.

3. TRANSPARENCY
Transparency in the DMP improves the opportunities for both internal and external parties to promote or ensure incorporation of environmental values. There are several dimensions to transparency: explicit and clear formulation of PPP objectives and terms of reference for studies, public access to information, explicit recognition of assumptions and limitations of models and analyses, etc. It should be easy for an outsider to understand what is being decided in the DMP, on what basis it is decided and by whom. For example, is the environmental report (if there is one) open to the public? Is the uncertainty associated with modelling results clearly communicated? Improving transparency may require more time allocated to the DMP, due to increased documentation. The ANSEA assessor should look at and assess the balance between transparency and expediency in the DMP.

4. PARTICIPATION
There are two major reasons why consultation with stakeholder groups, environmental experts and the general public improves the quality of decision-making: the decisions will be better informed; and decisions may be more socially acceptable. These two benefits will probably be easier to realise the more proactive (as opposed to reactive) is consultation. For example, was environmental expertise involved in identifying alternatives? Were stakeholders consulted when formulating the objectives? Active participation by stakeholders in the decision-making is one step further and can improve the quality further. As with the other principles, there may be a trade-off between consultation and time and financial resources. Further complications the assessor may need to consider include the potentially conflicting opinions and values expressed between and within different stakeholder groups. Values are relative and environmental values may not always be prioritised. The challenge for decision-makers is to use the consultation input in a balanced and constructive way.

5. CREDIBILITY
The quality of the decision-making will be improved by ensuring credibility in terms of the robustness and consistency of inputs, analysis and outputs. The alternatives considered in a decision should be considered on an equal basis, in order to reduce potential bias against more environment-friendly/sustainable alternatives. For example, is there any sign that information sources are partial towards a certain alternative? Is the same set of objectives, assumptions, limitations and parameters used when considering the different alternatives? Are previous decisions that incorporate environmental/sustainability values contradicted? Evaluating credibility of a completed process may be since it will require a high degree of insight into the DMP and this can be difficult when the process is not sufficiently transparent. However, this puts emphasis on the detailed understanding of the DMP that the assessor must gain, as well as an understanding of actors and stakeholders and their motivations and potential biases.

The table below provides a non-exhaustive list of the type of specific PCs that may be identified for an integrated or ex post assessment. The list can be used affirmatively instead of interrogatively, depending on the assessment mode.

Generic Procedural Criteria	Examples of Specific Procedural Criteria		
	Inputs	**Analysis**	**Outcomes**
Comprehensiveness	Was the 'right' data collected e.g. Were comprehensive sources of information considered? Were alternative sources of information considered? Were the environmental/ sustainability values identified as key to the PPP during scoping covered?	Has an integrated approach been taken? Was an appropriate set of analytical tools considered for the analysis? Were an appropriate set of alternatives (including an environmentally friendly option) considered? Were the boundaries of this decision appropriately defined in relation to other DMPs, institutional responsibilities)	Have the 'right' issues been considered (e.g. sustainability including social and economic development issues)? Was the outcome of the decision appropriate in scope?
Timeliness	Was information available in a timely fashion?	Was analysis undertaken in a logical sequence (e.g. compared to timing of other relevant stages in the DMP)?	Was the decision taken in a logical sequence?
Transparency	Are information sources transparent? Is the supporting material in the public domain?	Is it obvious what assumptions have been used in the analysis? Is it obvious what techniques, models, tools have been used?	Are reports and peer reviews available for inspection? Was the outcome of the decision and how stakeholder views fed into this clearly communicated?
Participation	Were the appropriate stakeholders involved (at the right time and in an appropriate way) in providing information/generating options/defining the scope? Were the appropriate stakeholders involved (at the right time and in an appropriate way)?	Were the appropriate stakeholders involved (at the right time and in an appropriate way) in interpreting the results of the analysis?	Were the appropriate stakeholders involved in the deliberating stages leading to the final decision?
Credibility	Does the quality of the input information reflect the scope of the decision and resources available (time and money)? Are any gaps/difficulties in information clearly highlighted?	Was the tool/method used in the analysis appropriate for the level of decision? Does the quality/complexity of the analysis reflect the scope of the decision and resources available (time and money)? Has risk been fully considered in the analysis (including technical risk and risks in implementation such as changes in project management, difficulties of stakeholder involvement etc)? Have analysis, reports and outcomes been reviewed by peers?	Does the reliability/quality of the decision reflect its potential environmental/ sustainability outcomes (timing, transparency, clarity, involvement etc. – see other criteria)? Was uncertainty incorporated into the analysis (e.g. through appropriate tools such as sensitivity or scenario analysis)?

III. FUNCTIONAL DESCRIPTION OF THE DMP

The functional description draws on the information gathered during the scoping step to produce a detailed overview of all the components that make up the decision-making process. It includes:

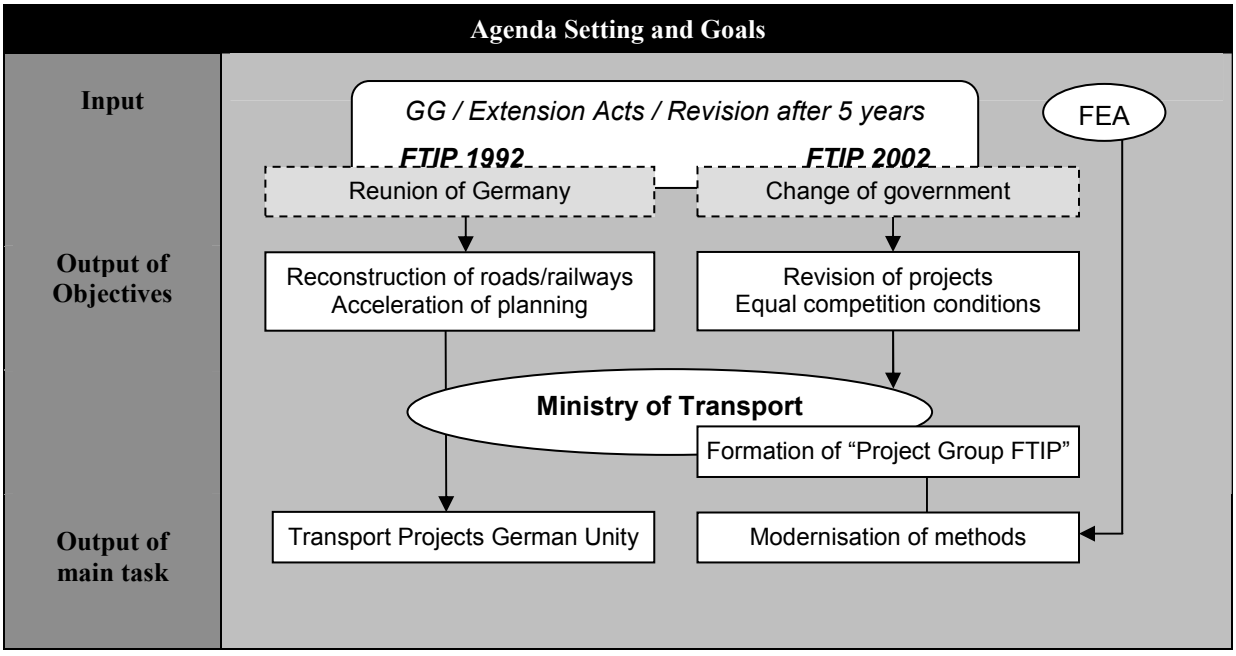
- decision-making stages or elements;
- the feedback between activities;
- consultation and public participation procedures; and
- major sources of input to the decision-making process (research, interests of participants, types of data gathering, assessments and evaluations etc.).

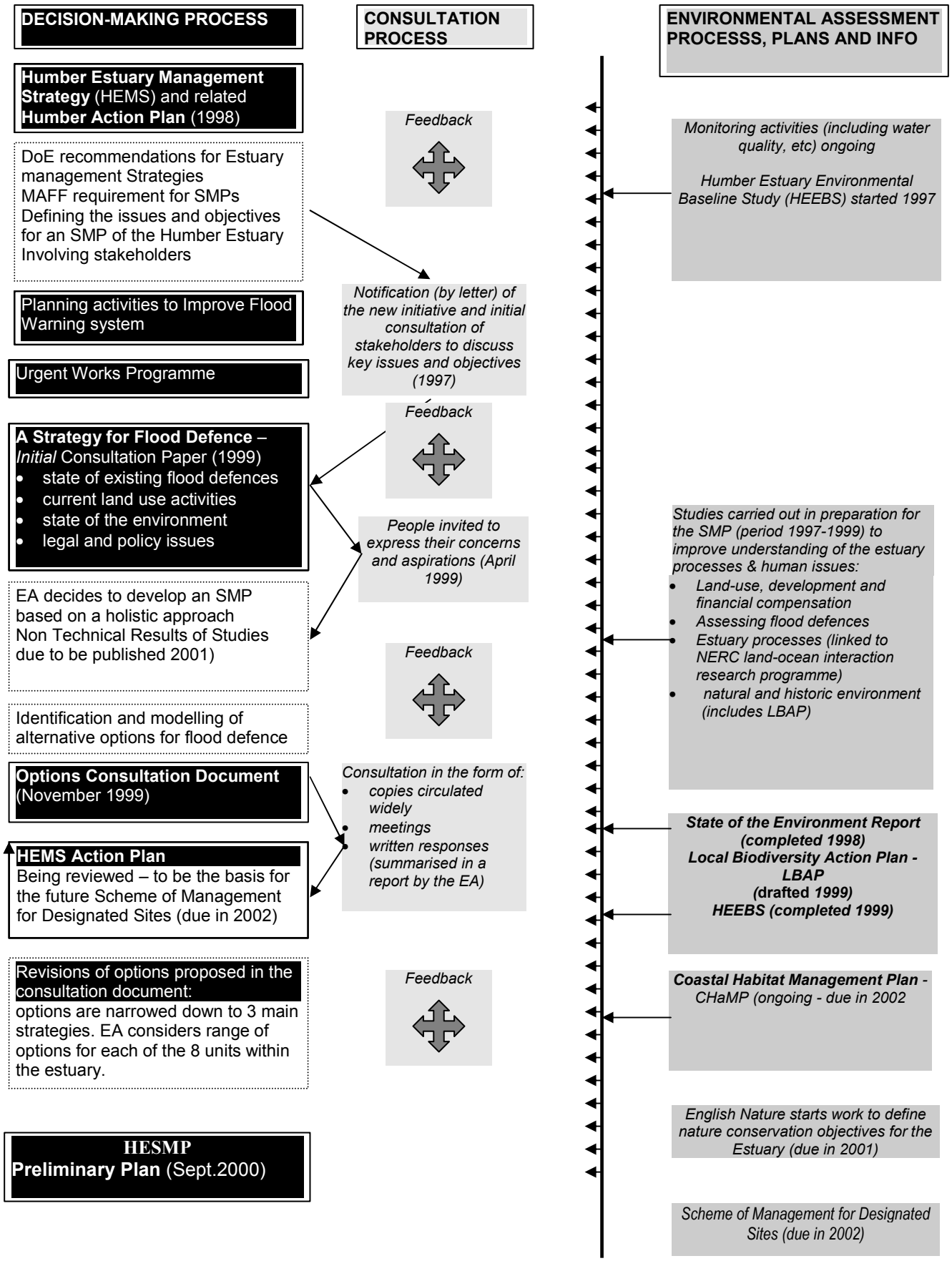
A **functional description of the decision-making process** constitutes a description of the sequence of each of the different sub-decisions of the decision-making process.

Through a functional description of the DMP, the ANSEA approach creates the basis for the close integration between 'planning' and 'assessment'. This general description will be the basis for the identification of Decision Windows.

A flowchart depicting the process and relevant notes should be produced during this step. The level of detail of the DMP description will depend on the type and complexity of the DMP (as briefly outlined during the Scoping step) and the amount of resources and time to be committed to the assessment (as determined before the assessment process starts). A DMP may be described well with only 6-10 major decision moments or it may require more detail, involving hundreds of decision moments. This task should involve representatives from all parties involved in the planning and assessment procedure, if the ANSEA assessment is undertaken in an integrated manner.

The flowcharts may look very different in different applications, but two example flowcharts are included here for illustrative purposes. The first one relates to the agenda setting stage in German federal transport planning and the second refers to the DMP of developing a shoreline estuary management plan in the UK.




DECISION-MAKING PROCESS
CONSULTATION PROCESS
ENVIRONMENTAL ASSESSMENT PROCESSS, PLANS AND INFO
Humber Estuary Management Strategy (HEMS) and related Humber Action Plan (1998)
Feedback
Monitoring activities (including water quality, etc) ongoing
Humber Estuary Environmental Baseline Study (HEEBS) started 1997
DoE recommendations for Estuary management Strategies
MAFF requirement for SMPs
Defining the issues and objectives for an SMP of the Humber Estuary
Involving stakeholders
Planning activities to Improve Flood Warning system
Notification (by letter) of the new initiative and initial consultation of stakeholders to discuss key issues and objectives (1997)
Urgent Works Programme
Feedback
A Strategy for Flood Defence – Initial Consultation Paper (1999)
state of existing flood defences
current land use activities
state of the environment
legal and policy issues
People invited to express their concerns and aspirations (April 1999)
Studies carried out in preparation for the SMP (period 1997-1999) to improve understanding of the estuary processes & human issues:
Land-use, development and financial compensation
Assessing flood defences
Estuary processes (linked to NERC land-ocean interaction research programme)
natural and historic environment (includes LBAP)
EA decides to develop an SMP based on a holistic approach
Non Technical Results of Studies due to be published 2001)
Feedback
Identification and modelling of alternative options for flood defence
Options Consultation Document (November 1999)
Consultation in the form of:
copies circulated widely
meetings
written responses (summarised in a report by the EA)
State of the Environment Report (completed 1998)
Local Biodiversity Action Plan - LBAP (drafted 1999)
HEEBS (completed 1999)
HEMS Action Plan
Being reviewed – to be the basis for the future Scheme of Management for Designated Sites (due in 2002)
Revisions of options proposed in the consultation document:
options are narrowed down to 3 main strategies. EA considers range of options for each of the 8 units within the estuary.
Feedback
Coastal Habitat Management Plan - CHaMP (ongoing - due in 2002
English Nature starts work to define nature conservation objectives for the Estuary (due in 2001)
HESMP
Preliminary Plan (Sept.2000)
Scheme of Management for Designated Sites (due in 2002)

IV. IDENTIFICATION OF DECISION WINDOWS

Decision Windows are the assessment unit in the ANSEA framework and could be interpreted as an interface between the assessment and the decision-making process. Decision Windows relate to a wide range of aspects of the decision-making process, which are directly or indirectly relevant to the objectives of environmental protection. They become a way of conceptualising the decision-making process, which facilitates the process of integration and assessment through the use of Procedural Criteria.

Decision Windows are moments in the decision-making process where critical choices are made which have environmental implications.

Decision Windows can take on many forms, from a formal decision to a public debate. Expert judgement and round-table discussions can provide a useful method to identify the Decision Windows. This may be essential since some decisions are simply not reflected in the official publications and literature related to the PPP.

Decision Windows are identified based on the breakdown of the DMP made in the functional description during the previous step. The experience of the case studies suggests that this is an iterative and largely intuitive process, and that it is necessary to involve the architects of the DMP. The identification process will also depend on the level of detail and the purpose with which the ANSEA assessment is made. Independently of how the Decision Windows are identified, it is very important to describe them in a detailed way. This description is a means for the assessors to understand them and also to justify the identification and communicate it to others. Furthermore, once the description has started it may become obvious that a shortlist of the most important DWs is necessary. The description involves several key elements (see example table below).

First, the **environmental implications** need to be described and at this stage the identification of key environmental issues and values during the Scoping step will be useful.

Second, the **actors involved** in the DW should be identified, along with any specific tasks or responsibilities, if applicable.

Third, the activities in the Decision Windows should be described in terms of the analytical framework developed in the ANSEA project: the **Input, Analysis, Outcome** (IAO) framework. The example description below is taken from an ANSEA case study on the DMP related to the development of Country Strategies in Swedish bilateral development co-operation.

DW # 2 – Specifying the issue			
Environmental implications	If the main development problems and opportunities in the country in question are (partly) understood in terms of the environment and if they are related to environmental opportunities and constraints, there is a greater chance that later studies and the final Country Strategies - CS - proposal will focus on or consider environmental impacts.		
Actors	• Ministry for Foreign Affairs is responsible for arranging a start meeting, in which Swedish International Development Co-operation Agency - SIDA - representatives participate. • Embassy staff contributes. • A SIDA Project Group is appointed, which may elaborate the issue specification.		
Input		**Analysis/Deliberation**	**Output**
- The formal government assignment to prepare country strategies proposal. - The understanding gained in DW 1 Background/context. - Swedish Ministry for Foreign Affairs political considerations.		Professional judgement: discussion in initial meeting and in early Project Group meetings.	- Common understanding of the development problems and opportunities (this acts as a basis for what to focus on in the Country Analysis).

V. ASSESSMENT OF DECISION WINDOWS

As explained earlier, the ANSEA approach proposes a different way of conceiving the 'assessment role'. The two pillars of ANSEA, Decision Windows and Procedural Criteria, are used for integrated and ex-post assessments. In integrated assessments, Procedural Criteria are used to develop guidance contributing to the integration of environmental values from the earliest stage of decision-making processes and to assess performance in each DW as it is concluded. Ex-post, Procedural Criteria can be used to carry out an evaluation of the quality of the whole process, focusing on the Decision Windows.

The quality of the ANSEA assessment is directly dependent on the comprehensiveness and effectiveness with which the previous steps – Scoping, Identification of Procedural Criteria, Functional description of the DMP and Identification of Decision Windows – are performed. Therefore the assessment step itself can be a relatively straightforward task, provided there is a stable platform of supporting materials and findings.

Doing the assessment involves looking at each detailed description of the DWs and applying all the specific Procedural Criteria developed in step IIB. The results can be documented in a matrix format such as in the example below. If the assessment is done in an integrated way, the assessment results are formulated as firm recommendations or prescriptions on which actions need to be taken in this particular DW. If the assessment is done as an ex-post evaluation, the results will take the form of statements regarding the performance against the Procedural Criteria and it can be useful to add specific recommendations for future DMPs in a similar context. An example of how the result of the assessment step may look like in practice was provided in Part I (page 6).

DW no. x – [Name of DW]			
Environmental implications			
Actors			
DW Action	**Input**	**Analysis**	**Output**
PROCEDURAL CRITERIA			
Comprehensiveness	Were comprehensive sources of information/input considered?	Has an integrated approach been taken?	Was the outcome of the decision appropriate in scope?
Timeliness	Were inputs available in a timely fashion?	Was analysis undertaken in a logical sequence?	Was the decision taken in a logical sequence?
Transparency	Are information sources transparent?	Is it obvious what techniques, models, tools have been used?	Was the outcome of the decision and how stakeholders' views fed into this clearly communicated to all stakeholders ?
Participation	Were appropriate stakeholders timely and properly involved in providing information/generating options/defining the scope?	Were appropriate stakeholders timely and properly involved in interpreting the results of the analysis ?	Were appropriate stakeholders involved in the deliberating stages leading to the final decision?
Credibility	Does the quality of the input information reflect the scope of the decision and resources available?	Was the tool/method used in the analysis appropriate for the level of decision?	Does the reliability /quality of the decision reflect its potential environmental/ sustainability outcomes?

VI. REPORTING

The reporting stage in the ANSEA approach is typical of any assessment or evaluation and involves synthesising the findings of individual assessments of decision windows in order to:

- draw conclusions about the overall quality of the decision making process;
- identify specific parts of the process and aspects of individual decision windows which could be improved (particularly for an integrated assessment of a PPP); and
- make recommendations for the future development of the DMP and identify any really significant issues to be monitored during implementation of the PPP.

The ANSEA Report is the final output of the ANSEA approach. It presents the results of Scoping, the functional description, the identification of Decision Windows and Procedural Criteria and the results of assessment of Decision Windows. By publishing the results of the assessment process, the environmental implications of the decision-making process (DMP) are set on the political agenda. In addition the report provides a basis for Review (step VII).

The format, length and coverage of the report will depend on the type of assessment being carried out (integrated or ex-post) and the resources which have been committed to the ANSEA assessment. The type of document produced and the extent to which the assessment results are integrated into the DMP will depend on:

- the political culture of decision-making;
- whether the ANSEA is undertaken by the proponent organisation or by an external, objective assessor; and
- the extent of public participation in the process and therefore, the type of documents needed for wider circulation.

For an integrated assessment the initial ANSEA report will effectively be a plan for the implementation of the decision making process. Further reports will also be required during or after the DMP to review how the prescriptions in the plan are being put into practice (see step VII, Review). The frequency and format of reports will have been discussed and agreed during Screening (step I) and Scoping (step II).

The following format is suggested for the ANSEA Report.

The integrated ANSEA approach

DMP implementation plan
For an integrated assessment the report will be integrated in the planning of the whole DMP and may include elements of public involvement and other DMP process description. In particular:

- information gathered during Scoping and Functional Description stages;
- core environmental issues and implications to be covered;
- the likely decision windows at a relatively high level;
- what needs to be taken into account in planning tasks within each Decision Window;
- the indicators (reflecting specific Procedural Criteria) which will be used to Review the success of the DMP; and
- a Review plan.

Review during DMP
As the decision making progresses a short review report on each Decision Window or a group of Decision Windows (depending on the number identified) would also be useful. This will then feed into the main decision-making process and become integrated into the final assessment document (below). Each DW report will be a brief stand-alone document:

- describing the DW in detail (including its context, position in the DMP etc.);
- presenting the core environmental implications of the DW;
- emphasising the results of the assessment against PC and any recommendation for action, especially in relation to the remaining DWs.

Evaluation report for a completed DMP

The evaluation report will cover all the background elements of an integrated assessment and will also include an assessment of the overall quality of the decision making process. Such a report may be a stand alone evaluation report of the whole decision making process.

VII. REVIEW

Review is a common task in environmental assessment procedures. In many SEAs, this would normally take the form of monitoring of whether any mitigating measures identified during the strategic environmental assessment had been implemented and whether the anticipated environmental consequences of the PPP has actually materialised as the PPP was implemented. Within the ANSEA approach the role of review varies according to whether the assessment has been integrated or an evaluation of a completed DMP.

In the case of an integrated ANSEA the review stage involves ensuring that the DMP is progressing according to plan, as laid out in the ANSEA report. In the case of an evaluation of a completed ANSEA review will be required of any critical assumptions underlying the alternatives considered in the PPP and the most critical environmental consequences of the final decision to be monitored during the plan life cycle. Review may also be carried out after the PPP life cycle to draw some lessons from past experience.

Review of an integrated ANSEA assessment

Within an integrated ANSEA assessment the review stage will focus on whether the prescriptions for the process (i.e. the Procedural Criteria against each Decision Window) have been followed. Review can be carried out against the ANSEA report in respect of the decisional boundaries and context, each of the main steps in the process and the DWs and their specific procedural criteria (prescriptions) in the ANSEA report.

Where the process has diverged from that envisaged in the ANSEA report the reviewer will identify why this has happened and with what implications.

Review of an ANSEA evaluation

Within an ANSEA evaluation approach the review stage will focus on the recommendations and lessons learnt in the ANSEA report. Where the evaluation has been carried out by a team including the

PPP proponents it would make sense to build the ANSEA review stage into periodic review of the PPP. Where the ANSEA evaluation has been carried out by independent assessors then the ANSEA review stage probably needs to be planned for separately.

Review of the PPP implementation would focus on three key points:

- whether the key assumptions (e.g. driving forces underlying the PPP such as population or demand-related assumptions in the case of a transport plan) are still valid during the PPP implementation;
- whether the measures identified on the basis of these assumptions are still valid; and
- the relationship between the environmental objectives identified for the PPP and the real achievements reached in each of its development phases. This might involve assessment against a set of indicators identified during the reporting stage.

References

Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

Dale, V. H. and M. R. English (ed.) (1998). Tools to aid environmental decision-making. New York, NY, Springer.

Faludi, A. (1987). A decision-centred view of environmental planning. Oxford, Pergamon.

Gregory, R. (1998). Identifying environmental values. In V. H. Dale and M. R. English (eds.) Tools to aid environmental decision-making. New York, NY, Springer.

Keeney, R. L. (1992). Value-focused thinking: a path to creative decision-making. Cambridge, Harvard University Press.

Kleindorfer, P., H. Kunreuther, et al. (1993). Decision sciences: an integrative perspective. Cambridge, Cambridge University Press.

Partidario, M.R. and R. Clark (eds.) (2000). Perspectives on Strategic Environmental Assessment. Boca Raton, Florida, Lewis Publisher.

Rayner, S. and E. L. Malone (ed.) (1998). Human choice and climate change Volume 1: the societal framework. Columbus, Ohio, Batelle Press.

Therivel, R., E. Wilson, et al. (1992). Strategic environmental assessment. London, Earthscan.

Therivel, R. and M. R. Partidario (1996). The practice of strategic environmental assessment. London, Earthscan.

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