

Assessment of the significance of environmental effects

**Screening approach and criteria applied in strategic
environmental assessments**

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Table of Contents

Table of Contents	2
Acknowledgement	4
Abbreviations.....	5
Executive Summary.....	7
1. Introduction.....	9
2. Object of the study	10
2.1. The SEA Directive	10
2.1.1. Principles and objectives	10
2.1.2. Scope.....	11
2.1.3. Cases to be screened.....	13
2.1.4. Criteria	16
2.2. Scope of the study.....	19
2.2.1. Terms.....	20
2.3. Requirements to be met by the approach	22
2.4. Challenges.....	24
2.4.1. Small areas at local level and minor modifications.....	24
2.4.2. The approach of the case-by-case examination.....	25
2.4.3. Uniform application.....	26
3. Approach	29
3.1. Integrated assessment.....	29
3.2. Expert judgement.....	31
3.3. Documentation.....	32
3.4. Method.....	33
3.4.1. Systematics	33
3.4.2. Materials	34
3.5. Assessment steps	36
3.6. Assessment rules.....	38

4. Pre-assessment	42
4.1. Irrelevance criteria	42
4.1.1. Selection of criteria	42
4.1.2. Positive environmental effects.....	44
5. Case-by-case examination.....	46
5.1. General assessment	46
5.1.1. Possible causes of environmental effects	47
5.1.2. Possible factors and interests to be protected.....	48
5.2. Detailed assessment	49
5.2.1. Data and knowledge gaps.....	49
5.2.2. Relevance matrix	51
5.2.3. Result.....	52
6. Recommendations	53
7. References	54
Annex A: Assessment materials	A-1
A.1. Assessment questions	A-3
A.1.1 Assessment rules	A-5
A.1.2 Pre-assessment.....	A-5
A.1.3 Case-by-case examination.....	A-5
A.2. General assessment rules	A-8
A.3. Check-lists and specific assessment rules	A-10
A.3.1. Check-list of irrelevance criteria.....	A-10
A.3.2. Check-list of causes of effects	A-12
A.3.3. Assessment rules for causes of effects.....	A-13
A.3.4. Check-list of factors/interests to be protected	A-14
A.3.5. Assessment rules for factors and interests to be protected	A-15
A.3.6. Assessment rules for data and knowledge gaps.....	A-18
A.3.7. Relevance matrix	A-19
A.4. Notes.....	A-21

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Abbreviations

Air Quality Framework Directive	Council Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management, OJ L 296/55 of 21.11.1996
1 st Air Quality Daughter Directive	.....	Council Directive 1999/30/EC of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air, OJ L 163/41 of 29.6.1999
2 nd Air Quality Daughter Directive	.....	Directive 2000/69/EC of the European Parliament and of the Council of 16 November 2000 relating to limit values for benzene and carbon monoxide in ambient air, OJ L 313/12 of 13.12.2000
3 rd Air Quality Daughter Directive	.....	Directive 2002/3/EC of the European Parliament and of the Council of 12 February 2002 relating to ozone in ambient air, OJ L 67/14 of 9.3.2002
ALSAG	.....	Federal Act of 7 June 1989 on the funding and implementation of the remediation of contaminated sites amending the Act on the Environmental and Water Management Fund, Federal Law Gazette (BGBl.) No. 79/1987, the Act on Support for Hydraulic Structures, BGBl. No. 148/1985, the Act on the Environmental Fund, BGBl. No. 567/1983, and the Federal Act of 20 March 1985 on Environmental Control, BGBl. No. 127/1985 (<i>Alllastensanierungsgesetz</i> – Act on the Remediation of Contaminated Sites), BGBl. No. 299/1989 as amended in BGBl. I No. 48/2001
Birds Directive	.....	Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds, OJ L 103/1 of 25.4.1979
CCE	.....	Case-by-case examination
ECJ	.....	European Court of Justice
EIA	.....	Environmental impact assessment
EIA Directive	.....	Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment, OJ L 73/5 of 14.3.1997
ForstG	.....	Federal Act of 3 July 1975 Regulating the Forestry Sector (<i>Forstgesetz</i> – Forestry Act), BGBl. No. 440/1975 as amended in BGBl. I No. 65/2002
GSwV	.....	Ordinance of the Federal Minister of Agriculture and Forestry on Limit Values for Substances Contained in Groundwater (<i>Grundwasserswellenwertverordnung</i> – Ordinance on Groundwater Limit Values), BGBl. No. 502/1991, as amended in BGBl. II No. 147/2002

Habitat Directive	.....	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206/7 of 22.7.1992, as amended in OJ L 305 of 8.11.1997.
IG-Luft	.....	Pollution Control (Air) Act (<i>Immissionsschutzgesetz-Luft</i>), BGBl. I No. 115/1997, as amended in BGBl. I No. 62/2001
OzonG	.....	Federal Act on Measures to Control Ozone Pollution and to Inform the Public on High Ozone Levels, Amending the Smog Alarm Act, BGBl. No. 38/1989 (<i>Ozongesetz – Ozone Act</i>), BGBl. No. 210/1992, as amended in BGBl. I No. 108/2001
PPs	.....	Plans and/or programmes
SEA	.....	Strategic environmental assessment
SEA Directive	.....	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, OJ L 197/30 of 21.7.2001
Seveso II Directive	.....	Council Directive 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances, OJ L 10/13 of 14.1.1997
UVP-G 2000	.....	Federal Act on Environmental Impact Assessment (<i>Umweltverträglichkeitsprüfungsgesetz – EIA Act</i>), BGBl. No. 697/1993, as amended in BGBl. I No. 50/2002
Water Framework Directive	.....	Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L 327/1 of 22.12.2000
WRG	.....	Water Act 1959 (<i>Wasserrechtsgesetz</i>), BGBl. No. 215/1959, as amended in BGBl. I No. 65/2002

Executive Summary

After the 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 (SEA Directive, OJ L 197/30 of 21.7.2001) entered into force on 21 July 2001, the discussion has intensified on the detailed requirements of implementation. Both at a European and at a national level, working groups were set up on various issues, such as the approach to be used in individual steps, interpretations and discretion in taking measures.

In this context, major attention has always been given to the question of how to best deal with the fact that the Directive also includes a so-called **non-mandatory scope**. The requirement of making the application of the SEA Directive in these cases conditional on the **likelihood of significant environmental effects** constitutes a considerable challenge for its practical implementation.

This is the backdrop against which the present study was prepared. It discusses the question of how to determine whether plans or programmes (PPs) are likely to have significant environmental effects and therefore require a SEA or not (**screening**). This applies both to PPs in general (by specifying types of PPs) and to concrete individual cases. For this purpose, tools are to be provided to the various entities who have to deal with these issues.

An approach was proposed and a method developed that had to meet several requirements. Last, but not least, the **acceptance** of the approach was considered to be essential. For this reason, special emphasis was placed on ensuring easy handling with reasonable efforts in spite of the other conditions to be met, such as technical requirements and, of course, completeness, in order to comply with the SEA Directive.

The method selected basically uses a few **check-lists** and can be applied to the specification of types of PPs and to case-by-case examinations. In order to ensure completeness and transparency, as well as to document the aspects covered and to clarify the decision-making process, **assessment rules** were developed.

These instruments are used in a multi-phase process to assess **step by step** whether plans or programmes require a SEA or not. This process includes several “exit” points at which the decision may be taken that a SEA is not necessary. In each step of this process, the examination is deepened and goes into greater detail so that cases in which the decision is obvious do not have to go through all the steps (e.g. possible in case of modifications).

The present study is roughly made up of **two parts**: In the first part, the **requirements** and **reasons** are presented that constitute the basis of the methodology selected and the proposals for the approach and the assessment materials developed. Annex A contains the **assessment materials** themselves. These were designed in such a way that they can be used alone – i.e. separately from the first part of this study – for assessing the likely significance of environmental effects resulting from plans or programmes.

1. Introduction

After a rather lengthy process, the SEA Directive was finally adopted. The Member States now have to transpose the Directive into national law within three years, i.e. by 21 July 2004.

The present study does not deal with details of the SEA Directive and its possible interpretations. These issues are covered by other studies, such as “Integrationsmöglichkeiten der strategischen Umweltprüfung in die nominelle und funktionelle Raumordnung – dargestellt an ausgewählten Beispielen“ (Possible ways of integrating strategic environmental assessments into nominal and functional spatial planning – illustrated by selected examples) prepared by the Institute of Spatial Planning and Rural Development of the University of Agricultural Sciences (Weber and Stöglehner, 2001, see References). In Austria, working groups have already been established to discuss various issues of the Directive’s implementation. Furthermore, the European Commission’s Guidance Group, which has members from several Member States, deals with various aspects of the Directive. This Group also intends to prepare documents to support the application of the Directive.

In the context of the present study, the scope and, in particular, the non-mandatory scope is of special importance, which is discussed in the following section. After all, this aspect forms the basis of the objective of this study: the definition of criteria for assessing the likely significance of environmental effects and the use of these criteria.

2. Object of the study

2.1. The SEA Directive

2.1.1. Principles and objectives

The SEA Directive implies that a comprehensive or **integrated^a approach** is to be used for assessing the likelihood of significant environmental effects of PPs under the terms of the Directive, as will be explained in the following.

In this context, the principles and objectives of the SEA Directive are of relevance. Its recitals include references to the aspects of environmental quality, human health, utilisation of natural resources, biodiversity and sustainable development:

(1) *Article 174 of the Treaty provides that Community policy on the environment is to contribute to, inter alia, the preservation, protection and improvement of the quality of the environment, the protection of human health and the prudent and rational utilisation of natural resources and that it is to be based on the precautionary principle. Article 6 of the Treaty provides that environmental protection requirements are to be integrated into the definition of Community policies and activities, in particular with a view to promoting sustainable development.*

(2) *The Fifth Environment Action Programme: Towards sustainability - A European Community programme of policy and action in relation to the environment and sustainable development⁽⁵⁾, supplemented by Council Decision No 2179/98/EC⁽⁶⁾ on its review, affirms the importance of assessing the likely environmental effects of plans and programmes.*

(3) *The Convention on Biological Diversity requires Parties to integrate as far as possible and as appropriate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans and programmes.*

(5) OJ C 138, 17.5.1993, p. 5.

(6) OJ L 275, 10.10.1998, p. 1.

^a "Integrated" and "integral" are used as synonyms in this context.

The objectives of the SEA Directive are stipulated in Article 1:

The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment.

2.1.2. Scope

First of all, Article 2 of the SEA Directive that contains some definitions has to be considered. According to this Article, on principle, the Directive applies both to **new PPs** and to their **modifications**.

Article 3 describes the scope of the SEA Directive. In this context, a mandatory (paragraph 2) and a non-mandatory scope (paragraphs 3 and 4) are to be differentiated:

- (1) *An environmental assessment, in accordance with Articles 4 to 9, shall be carried out for plans and programmes referred to in paragraphs 2 to 4 which are likely to have significant environmental effects.*
- (2) *Subject to paragraph 3, an environmental assessment shall be carried out for all plans and programmes,*
- (a) *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 listed in Annexes I and II to Directive 85/337/EEC^b, or*
- (b) *which, in view of the likely effect on sites, have been determined to require an assessment pursuant to Article 6 or 7 of Directive 92/43/EEC^c.*

^b Note: EIA Directive.

^c Note: Habitat Directive.

- (3) *Plans and programmes referred to in paragraph 2 which determine the use of small areas at local level and minor modifications to plans and programmes referred to in paragraph 2 shall require an environmental assessment only where the Member States determine that they are likely to have significant environmental effects.*
- (4) *Member States shall determine whether plans and programmes, other than those referred to in paragraph 2, which set the framework for future development consent of projects, are likely to have significant environmental effects.*
- (5) *Member States shall determine whether plans or programmes referred to in paragraphs 3 and 4 are likely to have significant environmental effects either through case-by-case examination or by specifying types of plans and programmes or by combining both approaches. For this purpose Member States shall in all cases take into account relevant criteria set out in Annex II, in order to ensure that plans and programmes with likely significant effects on the environment are covered by this Directive.*

Paragraphs 3 to 5 define the requirements for the non-mandatory scope^d:

Paragraph 3 specifies **exemptions** for the PPs covered by paragraph 2 – for which SEAs are actually mandatory. The features used are “the use of small areas at local level” on the one hand and “minor modifications” to the PPs referred to in paragraph 2 on the other hand. These require an environmental assessment only where the Member States determine that they are likely to have significant environmental effects.

Paragraph 4 deals with **other** PPs, i.e. those not covered by paragraph 2, which set the framework for future development consent of projects. Thus, there is no restriction to the sectors indicated in paragraph 2 (a) (agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use). However, the requirement that they are likely to have significant environmental effects also applies here. It is worth mentioning that, in contrast to paragraph 2 (a), the reference to the development consent is not limited to projects requiring an EIA.

^d The Directive assumes that plans and programmes under paragraph 2 are likely to have significant environmental effects.

Please note that the EIA obligation is still under discussion. It is argued that the wording of the SEA Directive (“the framework for future development consent of projects listed in Annexes I and II to the EIA Directive”) may also be interpreted to mean – so to speak – the mere listing of the projects in the two annexes of the EIA Directive. Taking into account the Directive’s development process and, in particular, the context, it is assumed for the purposes of the present study that the development consent mentioned in the SEA Directive relates to an EIA.

Thus, the **significance of environmental effects** is decisive for the non-mandatory scope. The exemption regarding minor modifications and the use of small areas at local level is explicitly mentioned only in the context of paragraph 2, but it is obvious that these aspects are not limited to the assessment of the significance of environmental effects resulting from PPs in the sectors described in paragraph 2 with reference to EIA projects. Under the same conditions and based on the same criteria, minor modifications and the use of small areas at local level may also be considered when assessing the significance of environmental effects caused by the other PPs defined in paragraph 4. After all, this is suggested by the fact that in both cases, the same criteria of Annex II of the SEA Directive have to be applied (Article 3 (5), see below). On the basis of these technical requirements, the methodology developed generally takes into consideration the two aspects of minor modifications and the use of small areas at local level, i.e. for PPs falling under Article 3 (2) and (4).

2.1.3. Cases to be screened

Consequently, the SEA Directive provides for screening, i.e. the determination of the significance of the environmental effects of PPs, in the following cases:

- new PPs according to paragraph 2 that determine the use of small areas at local level,

- modification of PPs according to paragraph 2 that determine the use of small areas at local level,
- minor modifications of PPs according to paragraph 2,
- all new PPs according to paragraph 4,
- all modifications of PPs according to paragraph 4,

Table 1 gives an overview of these cases.

Reference to Article 3 of the SEA Directive	New / modified PPs	PPs covered	Relevant sectors	Requirement
Para. 3 plus para. 2 (a)	New PPs	Use of small areas at local level	Agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use	Setting the framework for future development consent of projects listed in the EIA Directive
	Modified PPs	Use of small areas at local level		
	Modified PPs	Minor modifications		
Para. 3 plus para. 2 (b)	New PPs	Use of small areas at local level	All sectors	Examination required under the Habitat Directive
	Modified PPs	Use of small areas at local level		
	Modified PPs	Minor modifications		
Para. 4	New PPs	All PPs	All sectors	Setting the framework for future development consent of (any) projects
	Modified PPs			

Table 1: Overview of cases to be screened

2.1.4. Criteria

Paragraph 5 finally describes how the significance of effects resulting from PPs according to paragraphs 3 and 4 may be assessed. This may be done by specifying types of PPs, through case-by-case examination or by combining both approaches. The specification of PP types means that a general decision is taken as to whether certain types of plans and programmes are likely to have significant environmental effects.

At the same time, reference is made to Annex II with regard to the assessment of likely significant effects on the environment. The criteria identified in this Annex have to be taken into account in all cases and therefore, form the foundation of a tool-kit.

Annex II of the SEA Directive reads as follows:

Criteria for determining the likely significance of effects referred to in Article 3 (5)

1. *The characteristics of plans and programmes, having regard, in particular, to*
 - *the degree to which the plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources,*
 - *the degree to which the plan or programme influences other plans and programmes including those in a hierarchy,*
 - *the relevance of the plan or programme for the integration of environmental considerations in particular with a view to promoting sustainable development,*
 - *environmental problems relevant to the plan or programme,*
 - *the relevance of the plan or programme for the implementation of Community legislation on the environment (e.g. plans and programmes linked to waste management or water protection).*
2. *Characteristics of the effects and of the area likely to be affected, having regard, in particular, to*

- *the probability, duration, frequency and reversibility of the effects,*
- *the cumulative nature of the effects,*
- *the transboundary nature of the effects,*
- *the risks to human health or the environment (e.g. due to accidents),*
- *the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected),*
- *the value and vulnerability of the area likely to be affected due to:*
 - *special natural characteristics or cultural heritage,*
 - *exceeded environmental quality standards or limit values,*
 - *intensive land-use,*
- *the effects on areas or landscapes which have a recognised national, Community or international protection status.*

All the criteria set out here have to be taken into account in each and every case. With regard to the differing relevance of the criteria, i.e. with regard to the importance and weight attributed to them, flexibility is possible only in individual cases taking into consideration the characteristics of specific PPs or, if applicable, certain types of PPs.

From a technical perspective, **Annex I** is also relevant as it describes the information to be included in the environmental report according to Article 5 of the SEA Directive. The issues identified in this Annex explicitly include a list of factors to be protected (such as biodiversity, human health, fauna, flora, soil, water, air, etc.) and the **interrelationship** between these factors. Moreover, mention is made of types of effects, such as secondary, cumulative and other effects. Consequently, the impact across all environmental media/factors has to be assessed in a multi-disciplinary way (integrated approach).

Annex I of the SEA Directive reads as follows:

Information referred to in Article 5 (1)

The information to be provided under Article 5 (1), subject to Article 5 (2) and (3), is the following:

- (a) an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;*
- (b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;*
- (c) the environmental characteristics of areas likely to be significantly affected;*
- (d) any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC^e and 92/43/EEC^e;*
- (e) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;*
- (f) the likely significant effects⁽¹⁾ on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;*
- (g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;*
- (h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;*
- (i) a description of the measures envisaged concerning monitoring in accordance with Article 10;*
- (j) a non-technical summary of the information provided under the above headings.*

⁽¹⁾ These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

^e Note: Birds Directive.

The need for an integrative assessment of environmental effects may also be inferred in analogy with the widely similar technical requirements of the EIA Directive and the experiences made in their application. Not least for this reason, it is an obvious choice to take into account the methodological experiences made in the context of EIAs as far as this is possible and makes sense for plans and/or programmes. Furthermore, it is certainly appropriate to share the tasks and methods across the applications of environmental assessments (EIA and SEA).

Therefore, the consideration of the criteria used for assessing the likely significance of environmental effects requires an integrated approach both from a technical and methodological perspective and in practical terms, even though this is not explicitly stated in the body of the SEA Directive nor in Annex I in the context of the screening criteria.

2.2. Scope of the study

The concrete objective of this study is the development of a method, including criteria, for those PPs that fall under the non-mandatory scope of the SEA Directive and for which we have to determine – by specifying types of PPs, through case-by-case examination or by combining these two approaches – whether they are likely to have significant environmental effects and, hence, whether SEAs have to be carried out or not (PPs under Article 3 (3) and (4) of the SEA Directive).

Therefore, the present study does not discuss the performance of strategic environmental assessments themselves, but the preceding question on the need for SEAs (screening). Nevertheless, the considerations and instruments presented here can also be used with regard to the methods applied in the performance of SEAs in the future.

2.2.1. Terms

In spite of semantic ambiguities, which also the SEA Directive contains (or cannot resolve), the assessment of environmental effects caused by PPs requires at least a minimum of conceptual clarity since too much discretion in the interpretation of specific terms would make it significantly more difficult to apply the assessment criteria in a transparent and “correct” way.

The term “**environmental effect**” is used below to designate any change in the physical, natural or cultural environment (be it positive or negative) that fully or partly results from PPs or from their instruments and measures.

In the context of the “likely significance of environmental effects”, the following terms are found: in addition to “significant”^f, the adjectives “considerable” and “relevant” are used. Though partly different meanings could be identified, at least with regard to nuances, we are afraid that these terms are frequently used as synonyms.

This study uses the term adopted in the English version of the Directive, namely “**significant**”. This term is used to mean “weighty and momentous in the context studied” and, not least, has to be seen in relation with the corresponding objectives that are to be taken into account according to the SEA Directive and that are additionally relevant for concrete PPs. This necessarily implies that, in the assessment of the significance, a certain level of effects is considered to be acceptable (“tolerable level”). The significance of environmental effects must be seen in relation with the concrete environmental conditions (such as specific existing pressures and particularly sensitive areas) and the specific characteristics of plans or programmes so that the **significance has to be determined in each**

^f The English version of the Directive, for example, speaks of “significant effects”.

case individually. As a result, effects that have to be considered significant in one case need not necessarily be significant also for other plans or programmes.

Additionally, we will use the term “**decisive**”, by which we understand “**determining the final decision**”. This is interpreted to mean that the decision does not depend on non-decisive aspects. In other words, factors are decisive when the decision would be different if other or additional information, data, methods, etc. were used, i.e. the **result would not be stable**.

The “**likely**” effects on the environment cover the potential effects that may be **reasonably** expected, i.e. due to concrete indications and with sufficient probability. For the purpose of screening, these potential effects “only” have to be **identified** and their further examination would be the subject of a subsequent SEA. Thus, it is not necessary to furnish, or wait for, proof of the actual impact.

Finally, a few explanations on some terms used in footnote 1 of Annex I of the Directive with regard to the types of effects that may occur: **cumulative** effects refer to effects **building up**, while **synergistic** effects are effects **acting together**. In case of effects acting together, we can differentiate synergistic effects whose combined impact is greater than the sum total of the individual effects from antagonistic effects whose combined impact is less than the sum total of the individual effects. Both cumulative and synergistic effects may be caused by the fact that effects occur at the same **time** or at the same **place**.

Basically, in any attempts at defining and delimiting these terms (as well as the characteristics ultimately used for the criteria), however, we have to bear in mind that these terms are sometimes fuzzy and marked by blurred boundaries.

2.3. Requirements to be met by the approach

In addition to substance-related requirements, structural and legal conditions have to be met, as well. With a view to the scope, the most important requirements applying to the approach and criteria proposed are:

- completeness and conformity with the Directive,
- adequate procedure,
- uniformity,
- transparency and traceability,
- ease of use and reasonable efforts,
- acceptance.

With regard to completeness and, in this context, the conformity with the SEA Directive, care was taken to take into account all the aspects mentioned in the SEA Directive. In some cases, this means that extracts from the Directive are quoted in the assessment materials so that the method applied also stands a formal test, if necessary, and related uncertainties and different interpretations can be widely eliminated beforehand. The conformity with the Directive also is to be reflected in the individual working documents, so to speak as a “**service**” for the users. This is to ensure that all the requirements of the Directive are indeed met by considering the criteria (in “checking-off” the documents). As a result, a certain amount of redundancy has to be accepted in some cases.

An adequate procedure is characterised by several aspects. These include a logical structure – based on current knowledge – and openness to all the applications conceivable. Moreover, the procedure is to be efficient, unerring and independent of the persons carrying out the work. Furthermore, the method has to be generally applicable and transferable, while being flexible so that individual cases can be covered and justified deviations can be permitted to a certain extent.

Special emphasis is given to the following aspect: in order to achieve a uniform approach in Austria with regard to the method's application to decisions on the need for a SEA, these decisions have to be taken in a transparent and traceable way to document the decision-making process.⁸ In particular, this means that the method developed has to be **accepted**.

Therefore, the present study focuses on the challenge of preparing accepted "work instructions". Consequently, part of the study can be used separately and independently from the rest so that it is divided into the foundations and the reasons for the tools and the tools themselves (Annex A).

From the perspective of acceptance, it is of decisive importance that the method is easy to use and in line with the proportionality principle, i.e. it can be carried out with reasonable efforts. In its turn, this is only possible if the method is not only scientifically sound, but also **condensed** into a form appropriate for the decision and concentrates on the relevant issues.

Consideration was given to the fact that the materials can be used not only for PPs with a high potential for negative environmental effects, but also for PPs that are not expected to have serious or far-reaching effects (e.g. possible in case of modifications). In these (routine) cases that may be very simple, quick decisions should be possible. Therefore, the lists of criteria constitute "**maximum lists**" from which irrelevant ones can and should be deleted in concrete individual cases.

⁸ This makes sense because environmental authorities (Article 3 (6)) have to be consulted and because information is to be made available to the public (Article 3 (7)).

2.4. Challenges

One of the most difficult challenges faced in assessing the significance of the environmental effects of PPs certainly is the fact that we inevitably deal with blurred terms as well as **fuzziness** and **uncertainty** in general. This is also reflected by the level of detail and concreteness of the PPs' contents, measures and instruments as well as by the knowledge on which a case-by-case examination (CCE) is based. At the same time, the method selected is to be applicable to all PPs conceivable that have to be screened with regard to the need for SEAs, including the PPs' diverse levels of hierarchy, scale and detail. Moreover, the PPs in question frequently constitute – at least in part – an offer, i.e. they open up opportunities within certain limits, but they do not result in a binding obligation with regard to the implementation. Hence, the PPs themselves may not (always) have significant environmental effects, but, at the most, determine the framework for these effects.

Also the complexity and dynamism of PPs constitute a major challenge. Here, we have to make sure that the assessment applied must not be more differentiated than the basis of assessment. The screening and the CCE have to be seen as **preliminary examinations** of a cursory nature whose depth is limited to rough estimates^h. As a result, they cannot be as detailed as the SEAs proper nor can they involve the same requirements for detailed investigations that may be appropriate within the framework of SEAs.

2.4.1. Small areas at local level and minor modifications

As mentioned above, the Directive also contains other terms of relevance for assessing the significance of environmental effects: “**small areas at local level**”

^h In the context of screening requirements, similar statements are made in the amended version of the German EIA Act (*Gesetz über die Umweltschadungsprüfung* of 21 February 1990, BGBl I: 205, as amended on 5 September 2001, BGBl. I: 2350).

and “**minor modifications**”. It is generally assumed that, just like for “significant environmental effects”, a simple definition of “small areas at local level” and of “minor modifications” is impossible under the terms of the SEA Directive (e.g. by specifying the area in square meters or similarly). Therefore, the final decision on these two criteria, in fact, has to be left to the CCE.

Based on the conviction that a clear delimitation of the two concepts is impossible and even involves the risk of being found incompatible with the Directive, given the case-law of the European Court of Justice on the implementation of the EIA Directiveⁱ, the approach selected for the assessment of the significance is also applied to these two concepts. This means that since these two aspects cannot be exactly defined (at least not under the terms of the SEA Directive), they are also examined by means of the assessment materials developed within the framework of screening. Thus, transparent assessment criteria have to be provided for clarifying whether PPs relate to small areas at local level or involve minor modifications. These again are to be orientated to the criteria described in the Directive. The method developed is to cover this and take into account these aspects.

2.4.2. The approach of the case-by-case examination

The specification of types of PPs makes sense either if they obviously have the potential of causing significant environmental effects (positive list) or if such effects can be definitely excluded (negative list). The combination of type specification and case-by-case examination, which is also envisaged by the Directive, seems to be possible if details of the PPs depend on specific conditions and rules are provided that stipulate that certain cases (do not) require SEAs,

ⁱ In particular, Case C-392/96 of 21 September 1999, *Commission v. Ireland*, in which the Court found that even a small-scale project can have significant effects on the environment if it is in a location where the environmental factors are sensitive to the slightest alteration.

while others are to be subject to CCEs. For example, a rule could state that a CCE is required for certain PPs if they affect sensitive or protected areas.

The specification of PP types obviously offers the benefit of certainty (in planning). However, especially the preparation of a negative list – i.e. PP types never requiring SEAs (because they are unlikely to have significant environmental effects) – will be very difficult and problematic. This is mainly due to the fact that it is very hard to take into account all the forms and specific features of certain PPs.

Moreover, any type specification involves the risk of insufficient flexibility for future developments. Thus, modifications of the (legal) framework could necessitate another screening of the PP types because this changes the background of possible PPs or their potential for environmental effects. Therefore, **case-by-case examinations** are assumed to be **more appropriate** and recommendable for a big majority of PPs.

2.4.3. Uniform application

CCEs require responsibility to be taken for decisions and allow for a certain degree of discretion, which is ultimately inherent in the SEA Directive and in the task in general. At any rate, however, the criteria indicated in Annex II of the Directive have to be applied, which also has to be ensured in the specification of PP types. The methodological approach presented here may also be used for type specifications and, in this case, is essentially orientated to the procedure applied to CCEs. This is based on the assumption that type specifications are more or less “abstract or general CCEs of one PP type” (in contrast to a CCE for a concrete, individual PP). This approach also facilitates implementation by avoiding the need for a separate category of examinations, possibly with different rules, for the combination of type specification and CCE.

After all, the objective of this study is to draw up **uniform “work instructions”** suitable for **all current and future** PPs (both for type specifications and case-by-case examinations or a combination of these two methods). The main reasons are:

- existing studies, including the one prepared by the Institute of Spatial Planning and Rural Development of the Viennese University of Agricultural Sciences (see References), naturally cannot claim to have identified all the PPs requiring SEAs;
- the present study obviously only was able to examine selected examples of spatial planning in the *Länder* and cannot answer all the questions regarding the scope in a binding way;
- it is not clear whether the federal government and the *Länder* will both give priority to type specifications or rather to CCEs;
- the method is to be **open** not only to the closing of existing knowledge gaps (PPs not identified so far), but also to changes and **future developments** with a view to PPs to be covered by SEAs; in the context of likely significant environmental effects, this may relate to:
 - changes in the legal framework,
 - new findings and information concerning the scientific foundations,
 - new methodological aspects, or
 - changes in public attitudes.

The method presented can also be applied to PPs that, in a broad sense, aim at protecting the environment, such as PPs in the field of nature conservation and water protection.^j

No matter whether some of these PPs will eventually be found to fall under the scope of the Directive or not, the method presented also allows for assessing the significance of environmental effects in these cases. This may be important if the measures and instruments of sectoral PPs focus on one specific protection objective, but do not adequately take into account other environmental factors and interests covered by the Directive. These may also include interactions and interrelationships.

^j These are sometimes summarised under the term “positive planning”.

3. Approach

A major part of the assessments will probably relate to plans and programmes prepared in the field of spatial planning (one of the reasons why numerous spatial planning aspects are included in the criteria and assessment materials). According to the Directive, “environmental authorities” are to be consulted within the framework of a CCE. These are the authorities “*which, by reason of their specific environmental responsibilities, are likely to be concerned by the environmental effects of implementing plans and programmes*”.^k Furthermore, the Member States have to ensure that the conclusions on the significance of environmental effects, including the reasons for not requiring a SEA, are made available to the public.

The present method as well as the assessment materials developed have been designed so that they can be used by one person or a small team – for example at municipal level – in simple cases, which may become “routine cases” after some time. It is recommended that, after the work has been performed, the **comprehensive** and **systematic** assessment materials are added to the PP documents forming an official part of them (they are placed on file, so to speak). This allows for documenting the decision on the need for a SEA as well as its reasons without any gaps, thereby making it transparent. Subsequently, these materials may also form the basis of the consultation of the environmental authority and of the public participation procedure.

3.1. Integrated assessment

As mentioned above, the requirements of the Directive suggest that the impact has to be assessed in a multi-disciplinary way across all environmental

^k Please note that these need not be “authorities” under the terms of the Austrian legal system so that the term “entities” is preferable.

media/factors, i.e. an **integrated assessment** of the environment. This follows from the explicit identification of the factors and interests to be protected and the interrelationship between these factors as well as from the types of effects, such as secondary, cumulative and other effects.

As a rule, the **data** available for assessing plans and programmes is insufficient for providing fairly accurate estimates of the impact on the environment. This is mainly due to the fact that eco-systems are generally not well defined and that we are primarily dealing with **indirect effects** of the PP's instruments and measures.

Since eco-systems are more than the sum-total of their individual components, interactions and interrelationships absolutely have to be covered by the assessments. Hence, we deal with highly complex systems for which potential adverse effects are to be assessed on the basis of rather fragmentary data, taking into account not only hard facts (e.g. land consumption), but also "soft" factors (e.g. effects on the scenery). We also have to cope with the problem that as the complexity of a system increases, on principle, the ability of making precise and significant statements on the behaviour of the system decreases and that above a certain level of complexity, precision and significance are mutually exclusive.

There are uncountable scientific works on various methods for environmental assessments. Taking into account that, as a rule, a mix of methods is applied in assessments, there are almost as many assessment methods as fields of applications. The use of exact mathematical models generally requires that both the relevant data is available and that the meaning of the terms used is clear.

While there are numerous proposals for assessment methods, for example, in the fields of spatial planning, nature conservation and landscape protection, a major part of the other assessment tools available is geared to the project or even product level and therefore require completely different data.

3.2. Expert judgement

Mathematical methods hardly make sense in the assessment of the significance of environmental effects, in which many aspects can only be covered by verbal descriptions and, moreover, are partly interrelated. Exact numeric specifications involving detailed mathematical models (which may well be appropriate for individual issues) are therefore impossible for this application due to the PPs' fuzziness. Moreover, it would lead to "fictitious precision" reducing such approaches to absurdity. In addition, there is a variety of constantly changing criteria and indicator systems for assessing individual effects. As a consequence, it has to be left to specialised experts to apply these criteria in line with the current state of the art. However, structured support can be offered to them.

It is obvious that methods using exact numeric specifications can not be used – or at least only to a limited extent – for the task on hand. In such cases, it is considered recommendable and, under certain conditions, indispensable to apply a knowledge-based approach using **expert judgement** rooted in justified expectations and experiences with the qualified discussion of the topic concerned.

In order to achieve a transparent and, thus, traceable procedure a common "**tool-kit plus instructions**" is used. The result could be called a **structured expert judgement**. This pragmatic approach to dealing with lacking or insufficiently concrete data also ensures that experiences with the conditions on site as well as generally accepted conventions are included in the assessment. This is indispensable for drawing analogies, which will frequently be necessary at this level of concreteness in order to make up for a lack of data. In this respect, expert knowledge is to ensure that a well reflected assessment can be performed, rather than a formal and mechanical examination of the likely significance of the environmental effects.

Additionally, the assessment of the significance of environmental effects will have to focus on **qualitative criteria** and not on quantitative ones (such as the area in square meters or the like). An attempt at quantifying qualitative and semi-quantitative aspects will hardly lead to an increase in “objectivity”.

For all the reasons stated above, the decision on the need for SEAs must not exclusively rely on algorithms, but has to be flexible in individual cases and remain the experts’ responsibility so that the diversity and special nature of a concrete individual case can be accommodated. Moreover, positive experiences have indeed been made with such an approach, for example, in the performance of environmental impact assessments and it is appropriate to integrate them into the proposals for strategic environmental assessments.

Last, but not least, the experiences made with the use of rigid lists of quantitative thresholds in EIAs show that the exclusive application of these approaches is little suited to adequately reflecting reality and, moreover, involves the risk of being found not to be in **conformity with the Directive**.

3.3. Documentation

The comprehensive and systematic assessment proposed ensures that the decision – be it for or against requiring a SEA – is **sound** and has been taken on the basis of verifiable criteria using the check-lists and assessment rules. As mentioned above, it is recommended to give the assessment materials, i.e. the completed check-lists, official status and to attach them to the PP documents as an integral part.

If, after all the assessment steps have been finished, the decision is taken to require a SEA, this type of assessment, with the examinations performed and the results achieved, provides a basis that can be used in the SEA itself. This will

support, in particular, the definition of the scope and the preparation of the environmental report under Article 5 of the Directive.

3.4. Method

3.4.1. Systematics

The methodological challenge can be summarised as follows: the complexity of the task has to be boiled down to a foundation for decision-making that is manageable and adequate to the problem. Basically, there can be appropriate and plausible evaluations, but no objective or correct ones. There is no generally valid answer – in technical or legal terms – to the question for a threshold above which the environmental effects are to be considered significant. A uniform standard that is valid in all cases cannot be defined for assessing the significance, and it is impossible to have criteria establishing absolute “limit values” for significance. This means that the “significance threshold” has to be justified by arguments based on the specific situation in each and every assessment. If this significance threshold is not described and substantiated in detail in each case, the assessment will not be traceable. The tool supplied is to provide support in this work.

As mentioned in the discussion of the Directive’s requirements with regard to an integrated approach, the criteria listed in Annex II are not the only ones to be considered. Therefore, it would not be helpful nor appropriate to use the same system as Annex II – with a view to “checking off” the items listed there. Moreover, Annex II lists the characteristics of plans and programmes in point 1 and the characteristics of the effects and of the area likely to be affected in point 2, and hence seems to be hardly useful as a basis for a systematic and technically sound methodology. The criteria indicated also require different levels of

interpretation. Some of them can be considered to be self-explanatory, at least in part, and therefore have been taken over into the assessment materials.

A structured and systematic approach taking into account all the relevant requirements of the SEA Directive was selected for the method proposed. It essentially relies on a multi-phase and context-related assessment of environmental significance by means of impact prediction and risk assessments. This is based on the fact that adverse effects – that may be significant or not in a specific case – result from the coincidence of **impact factors** (specific to PPs) and **sensitivities** (specific to a site) taking into account various **values**. Therefore, the potential triggering or causing factors as well as the targets or acceptors of environmental effects are systematically checked. In line with the indication principle, lists of characteristics and attributes are used that, if possible, should be comprehensive as well as representative.

Additionally, so-called **irrelevance criteria** are used in a first step (for relatively quick decisions). The criteria listed in Annex II form part either of the systematic examination of causes and acceptors or of the assessment rules (also applying to the irrelevance criteria) so that consideration of all the Annex II criteria is ensured.

3.4.2. Materials

The methodology developed uses simple **decision hierarchies** with a **modular structure**. In spite of partly inevitable reiterations, this sequential process allows for a **successive elimination** so that different PPs do not have to be assessed with the same level of detail.

To ensure compliance with the Directive and the decision's transparency, a basic tool-kit has to be provided – which ultimately may also be considered to be an “algorithm” to a certain extent. The tool-kit essentially comprises check-lists and assessment instructions that are to facilitate the work. Thereby, it is to be

evidenced and documented that all the aspects and issues required by the SEA Directive and “best practice” have been covered (even though some aspects may be assessed as insignificant in a specific case).

These tools have to include the inputs and characteristics that are to provide orientation for the decision. Hence, they may also be used – so to speak – as “**lists of arguments**” for a decision. Provided that these lists are as comprehensive as possible, they contribute to minimising the risk of incorrect assessments. The length of the lists and, in part, their level of detail also has to be seen from this perspective, and takes into account that, if applicable, the lists may subsequently be used for detailed assessments (see below). On principle, the criteria and characteristics included in the lists only have to be taken into consideration if this is possible and relevant for a concrete plan/programme.

The check-lists used in the assessment serve as a kind of “funnel” in the identification of significant environmental effects. It is only at a later stage, if significant environmental effects cannot be precluded up to that point, that the performance of a more detailed assessment is recommended using, for example, matrices.

Such lists can never fully accommodate all individual cases nor can they be final, universal “all-purpose catalogues”. Therefore, they have to be designed as an open system that can be extended to include **additional** or **more differentiated** criteria that mainly are characteristic for certain PPs. To this end, the assessment materials always include a field for “other” information.

All the steps are based on common assessment rules or “**rules of the game**” that constitute an essential requirement for the correct and uniform application of the method. The rules are to ensure that certain aspects are not left out if they are known and relevant (this does not necessarily mean that in-depth investigations have to be performed for these aspects). One of these rules requires that **reasons**

are given for the decisions taken, stating the criteria that were decisive. Here, it is to be borne in mind that the decisions have to be made available to the public and that, for this reason alone, transparent and plausible reasoning is of importance. The final result of this assessment procedure is a **verbal argumentative statement**.

3.5. Assessment steps

Figure 1 gives an overview of the assessment steps defined:

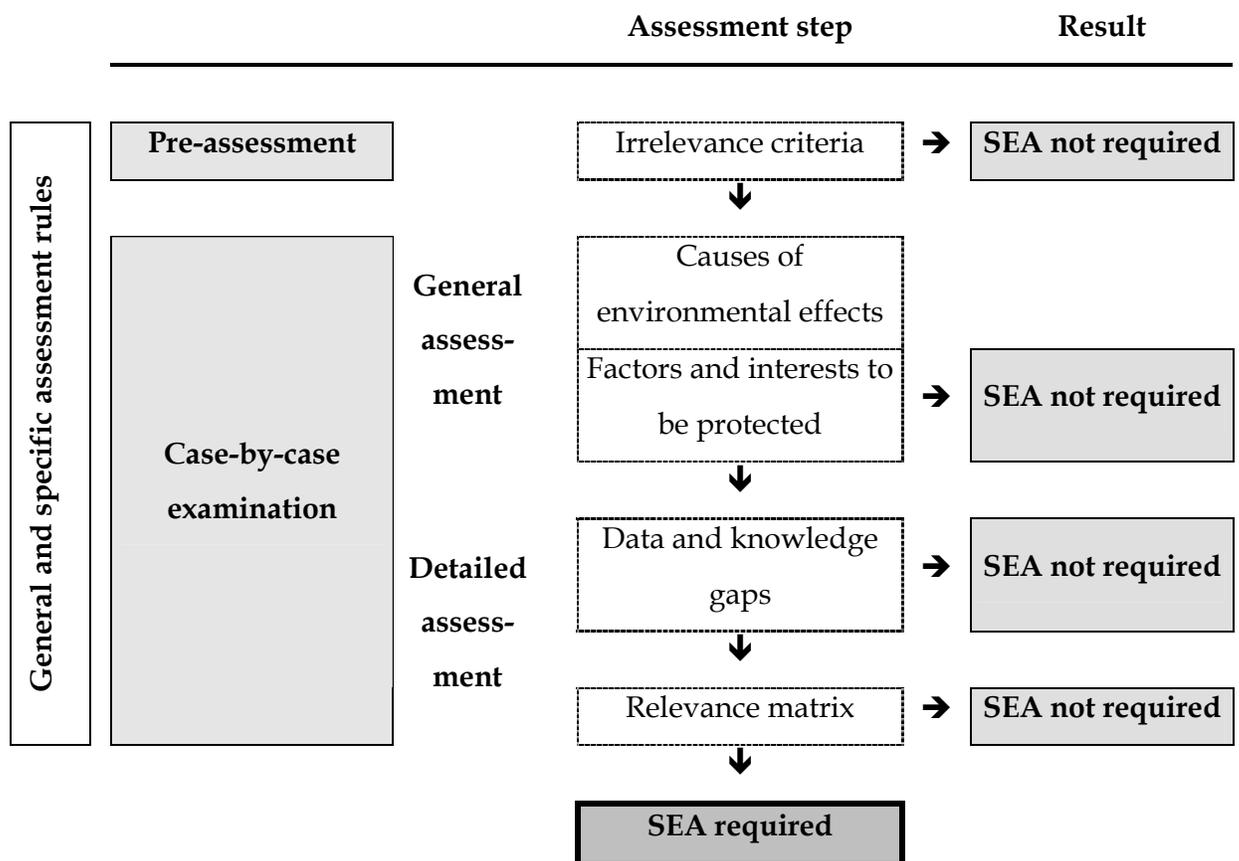


Figure 1: Overview of the assessment steps

The structure consists of a three-step “decision-making tree”: a pre-assessment phase and the case-by-case examination proper that in its turn, is divided into a general assessment and a detailed assessment.

Several “exit points” are provided at which the decision “SEA not required” may be taken so that the remaining steps **need not be performed**. This hierarchical structure is to allow for considering the differing significance of PPs with regard to their environmental effects and for **quick decisions** on simple cases, such as **modifications** of PPs.

However, assessments aiming at type specifications will require that all the steps are performed completely. Moreover, the process may be reiterative so that individual aspects can only be finally answered (and justified) after other steps have been completed (e.g. with regard to the relevance of lacking information).

Basically, it makes sense to go through the assessment steps only if there are no obviously significant environmental effects. This may, for example, be the case if significance is given due to a predominant criterion – a so-called “taboo” or “k.o.” criterion –, which will apply, for example, if the effects have the potential to destroy an environmental system affected or lead to a permanent degradation or restriction. If the need for a SEA is established due to one or more criteria, this means by analogy, that the remaining steps of the assessment are also obsolete.

It is to be assumed that, with each SEA carried out, less time will be required for subsequent assessments due to the increasing experience with this instrument and that, moreover, the number of SEAs required will decrease. In fact, it is expected that the criteria for determining the irrelevance of environmental effects (in the course of the pre-assessment) will become more and more important for SEAs. This is explained by the fact that the irrelevance criteria may apply more frequently with each SEA that was performed for PPs. This will be the case especially if the decision on the need for a SEA relates to PPs at a lower level of the planning hierarchy and a SEA was previously performed for higher-level PPs.

3.6. Assessment rules

General as well as **specific** assessment rules are proposed and provided in a structured form that apply to all the assessment steps. Since the effects of PPs have to be related to various objectives in order to evaluate their significance and to consider a reference standard for the desirable status in the assessment, several objectives are identified as well. In this context, consideration has to be given to environmental objectives of relevance to PPs that have been established at an international, Community, national, regional or local level. As the relevance of these objectives has to be examined on a case-by-case basis, they cannot be generally stated.

The general assessment rules that apply to the assessment of the likely significance of environmental effects of PPs include:

- the basic **objectives** and principles that essentially follow from the SEA Directive, in particular:
 - the principles of precaution and prevention;
 - safeguarding a high level of environmental protection with a view to promoting sustainable development (the preservation, protection and improvement of the quality of the environment);
 - the protection of human health;
 - the prudent and rational utilisation of natural resources;
 - the conservation and sustainable use of biological diversity;
 - other environmental objectives of relevance to PPs that have been defined at an international, Community, national, regional or local level.

- the **characteristics** of PPs, having regard, in particular, to:

- the degree to which a framework is set for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources;
 - the degree to which other PPs, including those in a PP hierarchy, are influenced;
 - the relevance of the PP for the integration of environmental considerations in particular with a view to promoting sustainable development;
 - environmental problems relevant to the PP;
 - the relevance of the PP for the implementation of Community legislation on the environment (e.g. PPs linked to waste management or water protection).
- The criteria for assessing the significance generally do **not form part of a hierarchy** and will be of different relevance in each concrete case. It is safe to assume that, usually, a single criterion will not be decisive and that the likelihood of significant effects will increase, the more criteria are fulfilled.
 - The assessment's **level of detail** and **concreteness** needs to match the one of the PP to be examined (because the assessment cannot be more differentiated than the object of assessment and because it does not make sense, for example, to look at the concrete volume of air emissions if these are not covered by the PPs with the same level of concreteness).
 - The **types of effects** to be studied (such as direct and indirect, secondary, cumulative and other effects): Positive effects on the environment are considered, but the CCE does not weigh negative against positive effects (i.e. no waiver of SEAs due to the fact that

potential negative effects are outweighed by certain potential positive effects). This is reserved for the performance of the SEA proper in which sufficient information will be available for these evaluations. This is also true for measures intended to prevent, reduce and offset negative environmental effects, i.e. in general, a decision on their effectiveness can reasonably be taken only within the framework of a SEA.

- An assessment is to be given with regard to **potential** environmental effects that will occur with sufficient **probability**, i.e. the PPs are examined to find out whether there are concrete indications for reasonably assuming such a potential (risk).
- The assessment has to cover the entire **range** of PPs and their instruments and measures; this includes the examination of the following aspects:
 - all realistic planning options;
 - alternatives¹, if they form part of the PPs;
 - future developments, including growth effects as far as these are foreseeable (e.g. demographic, traffic and other developments).
- Against the backdrop of traceability (also with regard to the entities to be consulted or informed), one of the most important rules requires that the **reasons have to be given** and a **documentation** has to be prepared on all decisions taken.
- If the decision “SEA not required” only applies under specific **conditions** (e.g. aspects that have to be covered and/or must not be

¹ The Directive speaks of “reasonable” alternatives.

included in PPs, such as certain variants, designs and measures), this has to be documented, as well.

To assist the users, terms and definitions are also summarised in the assessment materials (see Annex A).

In addition to these general rules, there are specific assessment rules that apply, on the one hand, to the examination of causes of environmental effects as well as the factors and interests to be protected and, on the other hand, to cases in which data and knowledge is lacking.

4. Pre-assessment

4.1. Irrelevance criteria

In the pre-assessment step, an attempt is made to assess PPs using a check-list of suitable irrelevance or negligibility criteria. This is to clarify at an early stage whether the PPs require SEAs or not, which may be particularly important for modifications to PPs. Moreover, this approach contributes to avoiding **duplication of assessment**, which is also called for in Articles 4 and 11 of the SEA Directive.

As the criteria used can only be qualitative ones and cannot be based on definitions of a negligible effect, which do exist in individual fields (e.g. air pollution, soil protection and human toxicology), we use the term “irrelevance criteria” here. This neither requires the identification of absolute figures – which has to be practically ruled out for PPs due to their level of detail – nor of relative figures (e.g. percentages) – for which a reference basis is missing (even for modifications, it is impossible to indicate percentages because there are no thresholds for new PPs).

4.1.1. Selection of criteria

The assessment of environmental effects resulting from PPs, which cover a certain **range**, cannot be more precise than the PPs themselves and therefore will also specify a range. If data availability and the information’s level of detail is not reflected by the assessment’s depth, you can only achieve fictitious precision. It is only logical that the same uncertainties accepted in the PPs must be permitted in decisions on the need for SEAs.

Numerous quantitative thresholds that exist for specific environmental factors essentially were developed on the basis of the analytical precision of measurement techniques. Thus, we can also rightly argue that the definition of irrelevance criteria

for this issue has to be based on the precision of the PPs. Therefore, the utilisation of (exclusively) quantitative thresholds for irrelevant or negligible effects is actually impossible in this context, as already explained above.

In fact, a few quantitative criteria might be suitable, for example criteria used in spatial planning, some of which are specified in spatial planning legislation of individual *Länder* (e.g. area data with regard to simplified procedures in the field of land-use planning). Moreover, other pertinent terms, such as “gap closure”, could be taken into account. However, this study consistently aims at leaving these criteria – so to speak, as potentially decisive criteria – to the experts, instead of exclusively relying on them in the decision. Nevertheless, the consideration of existing irrelevance criteria, including those from the field of nature and landscape protection, is to be permitted by addressing them in the assessment materials so that they can be used to justify decisions.

Some of the criteria indicated in Annex II of the SEA Directive are suitable for this concept of irrelevance criteria. Basically, these relate to “tiering”, i.e. the tiered approach to the aspects to be assessed in SEAs taking into account the PPs’ position in a hierarchy. In this context, irrelevance criteria apply if a SEA has already been performed and the PPs under consideration do not involve any new aspects of relevance to the environment. This can, however, only apply under certain conditions, such as sufficiently recent results.

Furthermore, several issues from the field of spatial planning were included in this list. In this context, reference is again made to the study “Integrationsmöglichkeiten der strategischen Umweltprüfung in die nominelle und funktionelle Raumordnung – dargestellt an ausgewählten Beispielen” (Possible ways of integrating strategic environmental assessments into nominal and functional spatial planning – illustrated by selected examples) prepared by the Institute of Spatial Planning and Rural Development of the University of Agricultural Sciences that also attempts to define “small areas at local level” and “minor modifications”. Partly, aspects based

on this study as well as the expertise of other regional planners was used to identify the irrelevance criteria that specifically relate to spatial planning. However, the criteria for “small areas at local level” and “minor modifications” are not separately emphasised in all cases since, on principle, these criteria should be applicable both to new PPs and their modifications.

Some irrelevance criteria are based on the **identifiability** of environmental effects. If an additional load does not exceed the **fluctuation range** of the **existing load**, the overall load and, thus, the resulting impact cannot be differentiated from the existing load. As a result, it is legitimate to conclude that such an additional load is irrelevant.

Moreover, the **mere designation** (classification, nomination) of land for protection areas, for example, under the Habitat or Birds Directives, does not constitute a plan or programme under the terms of the SEA Directive since there is no planning decision.

4.1.2. Positive environmental effects

One aspect of the irrelevance criteria needs to be supplemented by important information: one of these criteria addresses the **absence of negative** effects and the existence of exclusively **positive** effects on the environment as a **whole**, i.e. in an **integrated** perspective and not only related to individual sectors or factors/interests to be protected so that sectoral protection aims do not adversely affect other sectors or factors/interests. This is to ensure that potential environmental effects are assessed in an integrated approach and that PPs prepared for the benefit of one sector or factor/interest to be protected are exempted from SEAs even though they can have negative effects on other factors (e.g. if PPs result in the shifting of effects or include construction measures which is conceivable for water treatment plants in case of water management PPs). On the other hand, this criterion makes it possible to exempt PPs from SEAs that have only positive effects on the entire environment

under the terms of the SEA Directive, but do not comply with all the procedural aspects of SEAs (e.g. preparation of an environmental report, consultations).

This approach is justified by the technical foundations for assessing the significance of environmental effects. It is based, on the one hand, on the Directive's development process and the reasons why it does not focus exclusively on "negative" environmental effects (precisely, to prevent sectoral pressures due to environmental factors, interactions and interrelationships, shifts, etc. not covered, which is definitely ensured by this criterion) and, on the other hand, on the Directive's objectives according to Article 1. By wording the criterion in this way, we use the possibility offered by Article 3 (3) and (4) of "determining" that such "plans and programmes are not likely to have significant environmental effects".^m Here it is assumed that the **significance of environmental effects** need not be made conditional on the **procedural or formal aspects** of SEAs, such as consultations.

^m Of course, it is generally true for all the criteria that this opportunity offered by the Directive is used.

5. Case-by-case examination

5.1. General assessment

The procedure is designed in such a way that comprehensive lists are used to assess in a **systematic and structured** way whether a specific aspect is of relevance or not in the context of a concrete plan/programme. As mentioned above, the lists of criteria constitute “**maximum lists**” from which irrelevant ones can and should be deleted.

At first, two check-lists are used to identify potential effects on the environment by systematically checking **causes** and **acceptors** of the PP’s impact and by determining whether on principle, they are possible or relevant in the concrete case studied.

Thereby, the impact potential of PPs is established and, subsequently, the environmental factors that may be affected are identified. Thus, the two “axes” of a relevance matrix (see Section 5.2.2 below) are systematically examined for a concrete PP. Both the aspects that need to be further assessed (with regard to possible causes of effects and any factors/interests affected in a concrete case) and the aspects that need not be considered (also in a subsequent detailed assessment) are determined so that it is possible to focus on decisive aspects.

The integrated nature of the approach is reflected by the fact that **interactions** and **interrelationships**, including cumulative and secondary effects, are explicitly taken into consideration both among the causes and the factors/interests to be protected. After all, interactions may relate to causes of environmental effects (e.g. cumulative effects, repercussions and counteractions of interventions) and may also constitute factors to be protected (e.g. ecological balance) (see also the notes on the assessment materials in Annex A).

5.1.1. Possible causes of environmental effects

The PPs' instruments and measures are to be examined for possible causes of environmental effects using a comprehensive check-list. Mainly for reasons of easy handling and acceptance, many causes are indicated in the check-list only in the form of **keywords**.

In this process, an (essentially)ⁿ **ordinal scale** is used that permits differentiation for further processing. An assessment is made as to whether a cause that may result from a plan/programme or its measures and instruments is “not present / negligible”, “considerable/appreciably affected” or “unknown”. This scale serves as a recognised and well-proven tool of aggregation because, in fact, different units apply to different effects. The number of categories used in the scale was “limited” to three as traceability basically decreases as the number of categories increases and, not least for that reason, a three-grade scale is commonly used.

The categorisation is to be performed – again in line with certain pre-defined “rules” – for all possible causes of environmental effects. These rules are made transparent by the specific **assessment rules** provided that constitute the basic set of characteristics or indicators to be applied. In this context, basically, indicators have to be used that can be generalised so that the system is open to new developments, both in legal, regulatory and in technical terms.

The tool can provide support, for example, in assessing compliance with statutory and generally accepted limits and environmental quality standards and in examining whether the requirements for a rehabilitation area (*Sanierungsgebiet*) under IG-Luft are met, etc. A detailed listing of all statutory limits and recognised recommended

ⁿ Strictly speaking, the scale also includes features (the category “unknown”) that would justify to call it a nominal scale.

values would go beyond the scope of this work. Moreover, it would never be up to date and overtax the assessment with a view to the PPs' level of detail.

At any rate, the list of characteristics should contain recognised sets of indicators, it should be as comprehensive as possible and, ideally, representative of the effects and the interrelationships to be assessed. A list that is as complete as possible, therefore, also has to be seen as a “**service**” for the users in order to ensure the correct application of the criteria specified in Annex II of the Directive. As the lists are intended to be used in subsequent detailed assessments, they sometimes reach a certain volume and level of detail.

5.1.2. Possible factors and interests to be protected

In analogy with the previous step, a check-list is used to examine the full set of basically possible factors/interests to be protected.

They are categorised in the same way as the causes, again using specific assessment rules. Support is also provided not only with regard to the factors to be protected themselves – which are basically indicated in the in the form of keywords –, but also with regard to the **functions** worth of protection.

For example, land and soil are examined in their functions as:

- a habitat for animals, plants and other organisms,
- a part of natural balance, including in particular the water and nutrient cycles,
- decomposition, neutralisation and accumulation media,
- an area used, for example, in agriculture and forestry,
- groundwater storage,
- deposits of raw materials.

All the statements made in the previous section on supports also apply here.

After these two steps, PPs that consistently were assigned to the category “not present/negligible” can be said not to require SEAs. For the remaining PPs, the areas have been identified that require further study (**critical issues**, suspected effects, hot spots).

5.2. Detailed assessment

In the next step, the causes and factors/interests to be protected that have been classified as “unknown” (i.e. in both check-lists used in the general assessment) or as “considerable/appreciably affected” are examined for their decisiveness.

5.2.1. Data and knowledge gaps

The information forming the basis of the decision must adequately throw light upon the existence of likely significant environmental effects. It is essential to take into account (and, if necessary, obtain) knowledge determining the final decision.

However, there is no doubt about it that, by necessity, we have to make do with the **available knowledge**. The level of specificity and detail varies for different PPs and planning hierarchies. It is not possible in all the cases to clearly identify the level of detail that is appropriate for the decision. At any rate, the level of detail should match the specificity and depth of the PPs themselves. This obviously requires that an evaluation has to be made with regard to the knowledge considered indispensable and, hence, responsibility has to be taken for this decision. Otherwise, this work would only result in “data cemeteries”.

In spite of these obvious difficulties involved in decisions on the information required, statements on the significance of environmental effects can be possible and make sense in many cases. To a certain extent, a lack of detailed information can well

be offset by more general data, which actually is characteristic of strategic decisions and in many cases even necessary for them. This requires a certain balance between the desired substance of the result and the assessment depth/knowledge base used.

Several rules are provided for coping with uncertainty resulting from insufficient knowledge (e.g. on the interrelationship of effects) or from a lack of available data. For the “unknown” triggers and targets of effects (causes and affected factors/interests to be protected), we have to find out whether these knowledge gaps are decisive. Here, the focus is on the **stability** of the decision, i.e. we have to check whether the result depends on a knowledge or data gap or not. If the answer is “yes”, it may be necessary to obtain further information or to consult additional experts for the fields in question in order to allow for the classification “not present/negligible” or “considerable/appreciably affected”.

A SEA is considered not to be required, for example, if detailed information is needed for the assessment that exceeds the PP’s level of detail and specificity and if it is ensured that this detailed information will be taken into account in subsequent examinations (SEA or (approval) procedure) – with a view to the effects on the environment as a whole, i.e. in an **integrated** approach, and not with regard to individual sectors or factors/interests to be protected. Of course, this does not mean that a SEA is not required only because approvals are to be obtained in subsequent steps. The Directive provides for SEAs to be performed at a reasonable level, but it also requires that the environmental effects have to be examined in an integrated assessment.

The requirements to be met with regard to the precision and level of detail of the underlying data and information increase as a function of the importance, sensitivity, ecological value and protection needs of the area/factor/interest affected and as a function of the severity of the potential damage. This means that in case of uncertainties due to insufficient knowledge or data, the effects will have to be

considered significant even if their **likelihood** is low when important factors/interests to be protected are affected or major potential damage is possible.

The more uncertainties exist, the greater the probability that a SEA will be required. If significant environmental effects of PPs are to be ruled out, a high level of certainty is required. For this reason alone, the principle should apply that, in case of doubt, knowledge gaps tip the balance towards the need for a SEA.

In summary, the following applies: a SEA is not required if the data or knowledge gaps regarding all aspects classified as “unknown” are irrelevant for the decision and if no aspects are assigned to the category “considerable/appreciably affected”.

5.2.2. Relevance matrix

Relevance matrices can be used as a methodological basis and for further structured work. They make it possible to establish links between the two check-lists used so far on the causes and on the factors/interests to be protected and to identify (additional) aspects that may be interdependent. Since good experiences have generally been made with relevance matrices as a tool, for example, in the context of environmental impact assessments, we propose that a relevance matrix is drawn up for all the causes and factors/interests to be protected that were classified as “considerable/appreciably affected” or “unknown” – unless these data and knowledge gaps are considered to be irrelevant for the decision.

At this point, it can be necessary to call in selected (additional) experts because this follow-up may involve further issues. The check-lists used in the previous steps may well be filled in by one person, depending on his/her expertise and familiarity with these tools in the context of SEAs. This includes, not least, knowledge of the situation on site.

The relevance matrix is to be used for answering the question whether the effects identified are considered to be significant – from the perspective of the experts and taking into account the tools and indicators recorded. In this process, specialised assessment procedures and criteria may and should obviously be used. The reasons have to be stated also for the assessments made here. We suggest that the characteristics and indicators that are decisive are specifically listed.

An example of a relevance matrix is presented in Annex A. It constitutes, so to speak, a “maximum matrix” that includes all potential causes of environmental effects as well as all the factors/interests that may be affected (see Figure A-2). In practice, it will make sense to limit the matrix to the causes and acceptors of environmental effects identified in the general assessment.

5.2.3. Result

The final decision on the need for a SEA is to be supplemented by a summary of the reasons based on the structured assessment carried out so that a **verbal argumentative statement** is available. For determining the need of a SEA it is sufficient that at least one aspect is considered to be “significant”.

It may be necessary in some cases to specify the **conditions** for the decision on the need for a SEA (which issues must or must not be contained in a PP, e.g. in case of the following variant, form or measure, a SEA is not necessary, or similar conditions). However, there is no duty to do so (e.g. in development consent procedures, conditions may be proposed).

6. Recommendations

The following recommendations are made for the application of the approach proposed and the method and tools developed:

First of all, it will be recommendable to carry out an evaluation after the approach and the materials have been applied in practice for a certain period of time so that, if necessary, the experiences made can be input in a revision of the tools in order to ensure a **dynamic** development.

This requires that the individual cases examined are **documented** and discussed in an exchange of experiences. Thereby, a knowledge pool or a collection of issues and decisions could be established that ideally, could be summarised to obtain “standard issues” defining best practices. Findings from monitoring processes that are required by the Directive could also make a valuable contribution.

At the latest at this point, i.e. on the basis of such a step, it would be worth considering to secure the support of one or more “authoritative” institutions for a review of the method and the criteria used, in particular the irrelevance criteria, in order to identify any additional criteria needed and, so to speak, “legitimise” the approach. This might result in recommendations, like the ones issued by various institutions, that are not legally binding, but still are recognised and applied in practice in the form of recommended values and specialised codes (e.g. recommended values of the World Health Organisation and the Austrian Academy of Sciences).

It is recommended to specifically include into these considerations the Austrian Conference on Spatial Planning (ÖROK) and the Austrian Academy of Sciences, in particular its Institute of Technology Assessment.

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Annex A:

Assessment materials

Annex A: Assessment materials

The significance of the environmental effects resulting from plans or programmes (PPs) has to be assessed in the following cases:

- new PPs according to paragraph 2 that determine the use of small areas at local level,
- modification of PPs according to paragraph 2 that determine the use of small areas at local level,
- minor modifications of PPs according to paragraph 2,
- all new PPs according to paragraph 4,
- all modifications of PPs according to paragraph 4,

Table A-1 gives an overview of these cases.

Reference to Article 3 of the SEA Directive	New / modified PPs	PPs covered	Relevant sectors	Requirement
Para. 3 plus para. 2 (a)	New PPs	Use of small areas at local level	Agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use	Setting the framework for future development consent of projects listed in the EIA Directive
	Modified PPs	Use of small areas at local level		
	Modified PPs	Minor modifications		
Para. 3 plus para. 2 (b)	New PPs	Use of small areas at local level	All sectors	Examination required under the Habitat Directive
	Modified PPs	Use of small areas at local level		
	Modified PPs	Minor modifications		
Para. 4	New PPs Modified PPs	All PPs	All sectors	Setting the framework for future development consent of (any) projects

Table A-1: Overview of cases to be screened

To support the drafters of PPs, they are provided with the assessment materials presented below, i.e.

- check-lists,
- general and specific assessment rules, as well as
- an example of a relevance matrix.

They include explanations on their use and several examples.

These assessment materials have been designed in such a way that they can be used as such, without any additional documents, when a decision has to be taken on the likely significance of environmental effects of specific PPs and, thus, on the need for a strategic environmental assessment (SEA). They have to be worked through **step by step** and can also be used for plans and programmes that are not expected to have serious or far-reaching effects (e.g. possible in case of modifications). In these (routine) cases that may be very simple, **quick decisions** should be possible. Therefore, the lists of criteria constitute “**maximum lists**” from which irrelevant ones can and should be deleted in concrete individual cases.

Moreover, the assessment materials include the inputs and characteristics that are to provide orientation for the decision. Hence, they may also be used – so to speak – as “**lists of arguments**” for a decision. Provided that these lists are as comprehensive as possible, they contribute to minimising the risk of incorrect assessments. The length of the lists and, in part, their level of detail also has to be seen from this perspective, and takes into account that, if applicable, the lists may subsequently be used for detailed assessments (see below). A list that is as complete as possible, therefore, also has to be seen as a “**service**” for the users in order to ensure the correct application of the criteria specified in Annex II of the Directive.

Support is also provided for the two criteria of “small areas at local level” and “minor modifications” that are indicated in the Directive. Since the assessment materials are to be used both for new and modified PPs, these two aspects are not separately emphasised in all the cases.

The check-lists are supplemented by **assessment rules** containing the characteristics to be taken into account. They include generally applicable rules and specific rules for individual assessment steps. Both the general and the specific assessment rules as well as the individual assessment steps are mandatory provided that the characteristics described are present.

Of course, it is possible at any time to include additional or more differentiated criteria in the lists if this seems to be appropriate due to the special features of PPs (the fields “Other” are provided for this purpose). Furthermore, the lists constitute tools that need not be applied in a rigid way, but also permit justified deviations.

On principle, the criteria and characteristics included in the lists only have to be taken into consideration if this is possible and relevant for a concrete plan/programme.

It is recommended that, after the work has been performed, the completed assessment materials are added to the PP documents forming an official part of them (they are placed on file, so to speak), in order to document the aspects taken into account in the assessment.

Further information, in particular on the background and the reasons for the approach and methodology selected, is presented in the main part of this study.

A.1. Assessment questions

The steps outlined in the following chart (Figure A-1) reflect the questions to be asked and have to be carried out one by one, unless one of them already determines that a **SEA is not required**.

Basically, it makes only sense to go through the assessment steps if there are no **obviously** significant environmental effects. This may, for example, be the case if significance is given due to a predominant criterion – a so-called “taboo” or “k.o.” criterion –, which will apply, for example, if the effects have the potential to destroy an environmental system affected or lead to a permanent degradation or restriction.

If the need for a SEA is established due to one or more criteria, this means by analogy that the remaining steps of the assessment are also obsolete.

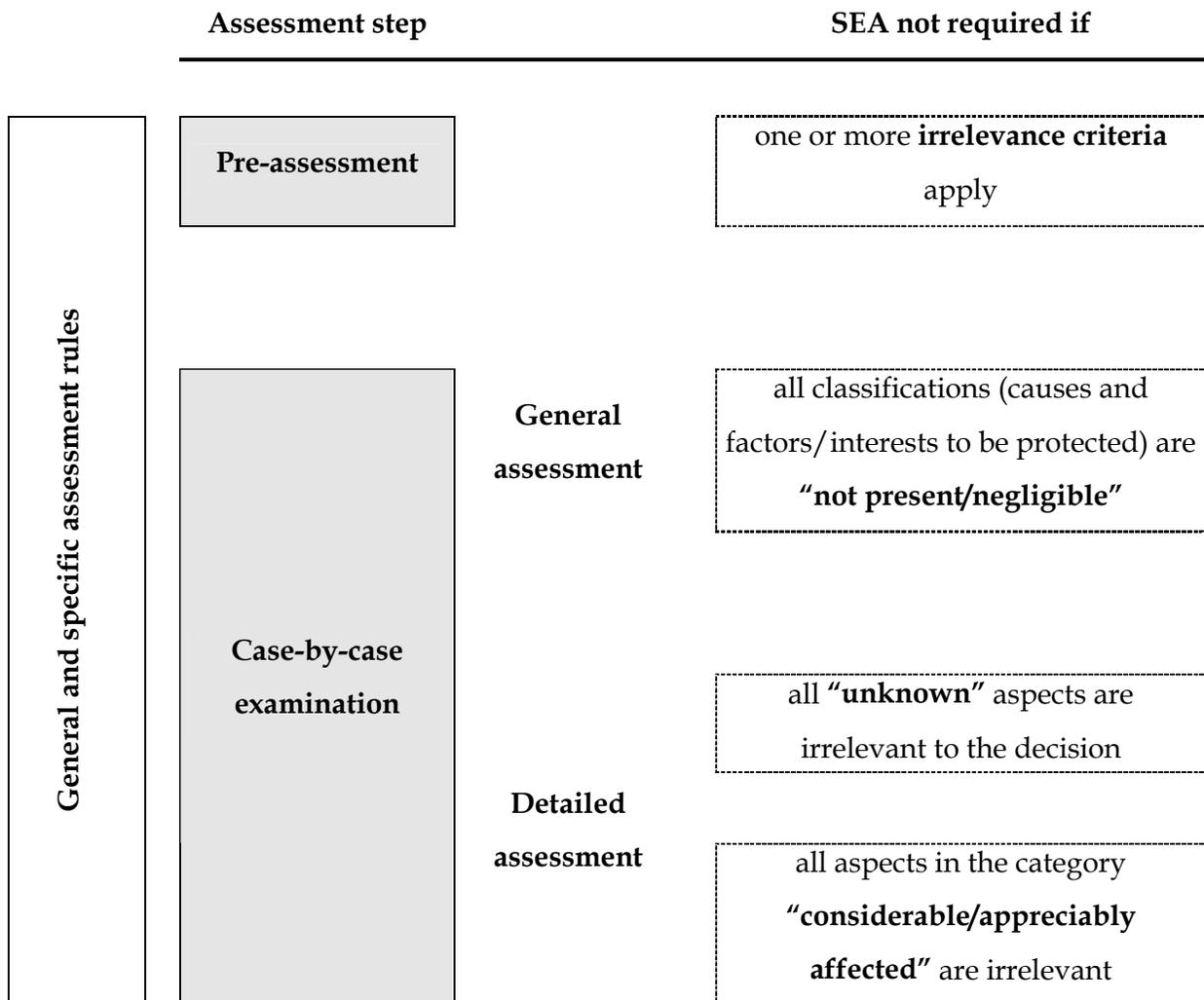


Figure A-1: Overview of the assessment steps

A.1.1 Assessment rules

The general assessment rules, which also contain definitions, apply to all the assessment steps carried out. Additionally, specific rules are presented under the individual assessment steps.

A.1.2 Pre-assessment

Irrelevance criteria are used to determine whether a (quick) decision can be taken on the need for a SEA.

If at least one of the irrelevance criteria applies, there is **no obligation** to perform a SEA.

A.1.3 Case-by-case examination

If none of the irrelevance criteria applies, the next step is a case-by-case examination (CCE) that is made up of a general and a detailed assessment.

General assessment

The general assessment serves to identify potential causes of environmental effects and potentially affected factors/interests to be protected. This is done in a systematic and structured way, taking into account specific assessment rules. Here, you examine whether the PPs or their measures and instruments have the potential of resulting in the causes of effects listed that are possible on principle. Then, you check which factors/interests to be protected may be potentially affected by the PPs' effects. For both causes and factors/interests to be protected, all aspects are taken into account **as far as they are known or identifiable**.

Consideration is to be given to the assessment rules relating to:

- the characteristics of the effects, and
- the characteristics and the ecological sensitivity of the areas affected.

Additionally, possible functions of individual factors/interests are indicated (by way of example). This is to facilitate full coverage of the potential effects of the PPs to be examined.

They are to be assigned to the categories "not present/negligible", "considerable/appreciably affected" or "unknown".

If all aspects fall in the category "not present/negligible", a **SEA is not required**.

Detailed assessment

Lack of data and knowledge

For all aspects classified as “unknown”, specific assessment rules are used to check whether the existing data and knowledge gaps are relevant for the decision.

If they are irrelevant and if there are no aspects classified as “considerable/appreciably affected”, a **SEA is not required**.

Relevance matrix

Unless the previous steps ruled out the need for a SEA or unless any data and knowledge gaps were found to be irrelevant for the decision, further work is necessary to determine whether the “considerable/appreciably affected” or “unknown” potential effects on the environment are decisive, which would mean that a SEA had to be performed. Relevance matrices are recommended as a tool for identifying (additional) aspects that may be interdependent.

If necessary, with the help of additional experts and after obtaining further information, these matrices are used to assess whether the effects classified as “considerable/appreciably affected” or “unknown” are to be considered significant in a specific individual case.

For all the effects described here, it is recommended to ask experts to provide their advice in the form of reasoned opinions. These are to be collated for the final decision in which a verbal argumentative statement is to be presented. In this process, specialised assessment procedures and criteria may and should obviously be used.

Figure A-2 gives an example of a “maximum matrix” that includes all the causes identified so far as well as the factors/interests to be protected. In a concrete case, it will make sense to limit the matrix to the triggers and targets of environmental effects (causes and factors/interests to be protected) identified in the (general) assessment performed.

Please note that the (general and specific) assessment rules also apply to this assessment of the significance of environmental effects.

If at least one environmental effect is considered to be significant, a SEA has to be performed.

Result

At any rate, the final decision on the need for a SEA is to be supplemented by a summary of the reasons based on the structured assessment carried out. Thus, the result is a **verbal argumentative statement**.

It may be necessary in some cases to specify the **conditions** for the decision on the need for a SEA (which issues must or must not be contained in a PP, e.g. in case of the following variant, form or measure, a SEA is not necessary, or similar conditions). However, there is no duty to do so: in development consent procedures, conditions may be proposed.

A.2. General assessment rules

- ✓ The assessment takes into account and is orientated to the following **objectives** and **principles**:
 - the principles of precaution and prevention;
 - safeguarding a high level of environmental protection with a view to promoting sustainable development (the preservation, protection and improvement of the quality of the environment);
 - the protection of human health;
 - the prudent and rational utilisation of natural resources;
 - the conservation and sustainable use of biological diversity;
 - other environmental objectives of relevance to PPs that have been defined at an international, Community, national, regional or local level.¹
- ✓ The assessment takes into account the **characteristics** of PPs, having regard, in particular, to:
 - the degree to which a framework is set for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources^{2,3}
 - the degree to which other PPs, including those in a PP hierarchy, are influenced;⁴
 - the relevance of the PP for the integration of environmental considerations in particular with a view to promoting sustainable development;⁵
 - environmental problems relevant to the PP;⁶
 - the relevance of the PP for the implementation of Community legislation on the environment (e.g. PPs linked to waste management or water protection).⁷
- ✓ The criteria for assessing the significance generally do **not form part of a hierarchy** and will be of different relevance in each concrete case. It is safe to assume that, usually, a single criterion will not be decisive and that significance will be more likely, the more criteria are fulfilled.
- ✓ The assessment's **level of detail and concreteness** matches the one of the PP to be examined.⁸
- ✓ The environmental effects covered include direct and indirect, secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, reversible and irreversible, positive⁹ and negative effects.¹⁰
- ✓ An assessment is to be given with regard to **potential** environmental effects that will occur with sufficient **probability**, i.e. the PPs are examined to find out whether there are concrete indications for reasonably assuming such a potential (risk).
- ✓ The assessment has to cover the entire **range** of PPs and their instruments and measures; this includes the examination of the following aspects:
 - all realistic planning options;
 - (reasonable) **alternatives**, if they form part of the PPs;
 - future **developments**, including growth effects as far as these are foreseeable (e.g. demographic, transport and other developments).
- ✓ For all the decisions taken, the **reasons** have to be given, stating the criteria that were decisive, and a **documentation** has to be prepared.
- ✓ If the decision "SEA not required" only applies under specific **conditions** (e.g. aspects that have to be covered and/or must not be included in PPs, such as certain variants, designs, measures, etc.), this has to be documented, as well.

Terms and definitions

✓	For the purposes of assessing the significance of environmental effects, the following terms are defined as follows:	
○	environmental effect	any change in the physical, natural or cultural environment (be it positive or negative) that fully or partly results from PPs or from instruments and measures
○	significant	weighty and momentous in the context studied
○	decisive	determining the final decision
○	likely effects	potential effects that may be reasonably expected, i.e. due to concrete indications and with sufficient probability
○	cumulative effects	effects building up
○	synergistic effects	effects acting together (here, we can differentiate synergistic effects whose combined impact is greater than the sum total of the individual effects from antagonistic effects whose combined impact is less than the sum total of the individual effects)

Both cumulative and synergistic effects may be caused by the fact that effects occur at the same time or at the same place.

Other:

A.3. Check-lists and specific assessment rules

A.3.1. Check-list of irrelevance criteria

Criteria	Yes
<p>The PP to be assessed was already examined in a SEA and the following applies:</p> <ul style="list-style-type: none"> ○ the version (modification) to be assessed obviously does not contain any additional or current aspects with regard to environmental effects, <u>and</u> ○ the results of the SEA already performed are sufficiently up to date, <u>and</u> ○ there are no new framework conditions, findings or data that have a decisive influence on the results of the SEA already performed. 	<input type="checkbox"/>
<p>PPs of superior levels in a planning hierarchy were already examined in a SEA and the following applies:</p> <ul style="list-style-type: none"> ○ the PP to be assessed obviously does not contain any additional or current aspects with regard to environmental effects, <u>and</u> ○ the results of the SEA performed for the superior PPs are sufficiently up to date, <u>and</u> ○ there are no new framework conditions, findings or data that have a decisive influence on the results of the SEA already performed for the superior PPs. <p>In particular, this may apply in case of adaptations of superior PPs.</p>	<input type="checkbox"/>
<p>The environmental aspects (possibly in the same planning area) of the PP to be assessed were already covered by a SEA performed for other PPs – these may relate to sectoral planning and need not necessarily be in any planning hierarchy – and the following applies:</p> <ul style="list-style-type: none"> ○ the PP to be assessed obviously does not contain any additional or current aspects with regard to environmental effects, <u>and</u> ○ the results of the SEA performed are sufficiently up to date, <u>and</u> ○ there are no new framework conditions, findings or data that have a decisive influence on the results of the SEA already performed. 	<input type="checkbox"/>
<p>Due to the type or objective of the PP to be assessed or to its instruments and measures, there are obviously no adverse, but only positive effects on the environment as a whole, i.e. in an integrated perspective and not only related to individual sectors or factors/interests to be protected so that sectoral protection aims do not adversely affect other sectors or factors/interests to be protected.¹¹</p>	<input type="checkbox"/>
<p>The PP's object merely is the designation (classification, nomination) of land for the protection of certain areas, for example, under the Habitat or Birds Directives.</p>	<input type="checkbox"/>
<p>The (negative) environmental effects to be expected are within the range of forecast/measurement uncertainties so that the effects cannot be identified (observed, detected, perceived, measured in comparison with the situation without the PP to be assessed).</p>	<input type="checkbox"/>
<p>The additional pressures or the expected (negative) effects on the environment are within the range of the background load (typical for the area).</p>	<input type="checkbox"/>
<p>The additional pressures or the expected (negative) effects on the environment are within the natural range of the factors/interests to be protected.</p>	<input type="checkbox"/>

Criteria	Yes
There are only (minor) modifications (revisions, updates) of PPs that do not change <ul style="list-style-type: none"> ○ the PPs' nature and intervention aims¹², <u>and</u> ○ the type and order of magnitude of the environmental effects.¹³ 	<input type="checkbox"/>
The PPs are only adapted to the actual (legal) structural and utilisation conditions.	<input type="checkbox"/>
The PPs only relate to the use of a small area of local dimension, i.e. a spatial-functional unit at municipal level characterised by specific or related natural, socio-economic, socio-cultural and structural (urbanist) interactions/textures . ¹⁴	<input type="checkbox"/>
There are other sector-specific (irrelevance) criteria that make it possible to preclude significant environmental effects and, for instance, are laid down in relevant legal documents. ¹⁵	<input type="checkbox"/>
Other:	<input type="checkbox"/>

Notes/Reasons:

A.3.2. Check-list of causes of effects

Cause: Potential of	Not present/ negligible	Considerable / appreciably affected	Unknown	Notes
Use of resources				
Land use, sealing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Use or shaping of nature and landscape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water use and abstraction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Use of other resources ¹⁶	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Changes in the area concerned and in spatial-functional relations¹⁷				
Terrain changes, fragmentation, separating or barrier effects, erosion, increase or decrease in density	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Changes in dispersal conditions and surface properties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hydrological changes ¹⁸	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Clearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Traffic generation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Visual, aesthetic changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hazard potential				
Earthflows, mud slides, avalanches, floods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Risk of accidents ¹⁹ or failures ²⁰	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Emission potential²¹				
Noise ²²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Air pollutants ²³	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Liquid emissions ²⁴	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Waste and residues ²⁵	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Interactions and interrelationships²⁶				
Cumulation of effects ²⁷	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Synergistic effects ²⁸	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other: ²⁹	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

A.3.3. Assessment rules for causes of effects

If applicable, consideration is to be given to:

Characteristics of the effects

- ✓ Volume
 - ✓ Extent
 - ✓ Complexity
 - ✓ Severity
 - ✓ Dominant or shaping character
 - ✓ Likelihood (of occurrence)
 - Temporal dimension of effects**
 - ✓ Point in time³⁰
 - ✓ Duration (short, medium or long-term)
 - ✓ Frequency
 - ✓ Development and, if applicable, change
 - ✓ Reversibility
 - ✓ Period of time until regeneration/recovery may come about
 - Spatial dimension of effects**
 - ✓ Location, including altitude, exposedness, spatial barriers/topographic boundaries
 - ✓ Geographic region (local, regional, transregional, global)
 - ✓ Number of persons affected
 - ✓ Transboundary character
- ✓ Other:

Notes:

A.3.4. Check-list of factors/interests to be protected

Factors and interests to be protected	Not present / negligible	Considerable/ appreciably affected	Unknown	Notes
Environmental media				
Soil and sub-soil ³¹	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Groundwater and surface water ³²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Air	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Meso-climate ³³ and macro-climate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fauna and flora³⁴				
Animals ³⁵	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Plants ³⁶	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Forests ³⁷	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Habitats (biotopes, eco-systems) ³⁸	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Biological diversity ³⁹	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Human beings				
Health and well-being	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Landscape ⁴⁰ , its character and ecology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cityscape and scenery ⁴¹ , spatial structure, aesthetics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Utilisation ⁴²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Material assets ⁴³	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cultural heritage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Interactions and interrelationships ²⁶	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

A.3.5. Assessment rules for factors and interests to be protected

If applicable, consideration is to be given to:
Functions of factors to be protected
<p>Soil and sub-soil in their function as:</p> <ul style="list-style-type: none"> ✓ a habitat for animals, plants and other organisms ✓ a part of natural balance, including in particular the water and nutrient cycles ✓ decomposition, neutralisation and accumulation media ✓ an area used, for example, for settlements, transport, recreation, sports, tourism, agriculture and forestry, horticulture, etc. ✓ groundwater storage ✓ deposits of raw materials
<p>Groundwater and surface water in their function as:</p> <ul style="list-style-type: none"> ✓ a habitat for animals, plants and other organisms ✓ a part of natural balance, including in particular the nutrient cycles ✓ retention volume ✓ drinking water (including watering points for animals) ✓ domestic and industrial water ✓ basis of fishery and other economic activities (e.g. energy production, cooling medium, navigation) ✓ bathing waters
<p>Air and (local) climate in their functions as</p> <ul style="list-style-type: none"> ✓ basis of life for humans, animals, plants and other organisms ✓ a part of natural balance, including in particular the water cycles and climate-relevant functions (e.g. temperature regulation) ✓ transport medium
<p>Plants (incl. forests) in their functions as</p> <ul style="list-style-type: none"> ✓ parts of food chains ✓ crops ✓ producers of fresh air ✓ protection ✓ recreation areas ✓ barriers, including climate-relevant functions,
<p>Animals in their "function" as</p> <ul style="list-style-type: none"> ✓ parts of food chains ✓ livestock
<ul style="list-style-type: none"> ✓ Other:
<p>Notes:</p>

If applicable, consideration is to be given to:	
Characteristics and ecological sensitivity of the areas affected⁴⁴	
Ecological/cultural importance of the areas or their value, in particular	
✓	densely populated areas
✓	areas or landscapes which have a recognised national, Community or international protection status, e.g. areas designated under the Habitat and Birds Directives, national parks, nature reserves, areas of outstanding natural beauty, protected landscape areas, natural monuments, forest reservations, water protection and conservation areas, climatic health resorts, etc.
✓	(cultivated) landscape or elements of historic, cultural, geological or archaeological importance, e.g. architectural and archaeological heritage, monuments, UNESCO World Cultural Heritage, etc.
✓	areas subject to special (spatial planning) designations and provisions (e.g. protected, priority, development and suitability zones); open spaces
✓	areas with protective functions (against natural risks), e.g. areas with retention functions
✓	pristinity, naturalness, level of anthropogenic influences (hemeroby)
✓	coherence and consistency of areas, networking of ecologically important areas (habitat patch connectivity)
✓	possibility of (directly) experiencing nature
✓	scarcity, characteristic features, uniqueness; also with regard to ensembles
Potential of the areas, in particular	
✓	special or particularly characteristic or representative natural or cultural features
✓	production, habitat and regulating functions
✓	performance and functioning, development potential, potential yield
✓	natural or semi-natural dynamism, including spatial dynamism (e.g. migration routes, movement ranges, game paths)
✓	availability or depletability of renewable (e.g. plant and animal biomass, water) and non-renewable (e.g. mineral) resources, landfill volume, etc.
✓	richness in, and diversity of, natural resources as well as their quality and regenerative capacity
✓	special reserves, e.g. with regard to habitats, (recreational) utilisation, water (e.g. medicinal springs)
Vulnerability of the areas, in particular	
✓	existing pressures
✓	current utilisation, especially intensive land use
✓	existing or foreseeable utilisation conflicts
✓	existing environmental problems, such as former disposal and industrial sites ⁴⁵ , suspected and proven contaminated sites according to ALSAG, pollutant depositions, overfertilisation, compaction, etc.
✓	areas in which statutory limit values, recognised recommended values or other environmental quality standards, in particular those laid down in Community legislation ⁴⁶ , are exceeded ⁴⁷
✓	existing risks, for example due to natural risks, such as avalanches, mud slides, rockfalls or floods (e.g. hazard zone plans under ForstG, flood zones under WRG); fields of consultation under the Seveso II Directive, etc.
✓	absorption and buffering capacity
✓	sensitivity
✓	ecological/functional substitutability
✓	regenerative capacity
✓	(carrying) capacities, e.g. infrastructure, including transport infrastructure
✓	(unfavourable) special topographic or meteorological characteristics
✓	areas with extreme living conditions
✓	particularly sensitive eco-systems, such as wetlands, forests, mountain regions, glaciers
✓	rare or endangered animal and plant species ⁴⁸ , plant communities, refuges
✓	eco-systems (biotopes, biocoenoses) that are rare, endangered, of particular ecological value or typical for a region as well as their transition zones (eco-tones)
✓	Other:

Notes:

A.3.6. Assessment rules for data and knowledge gaps

If applicable, consideration is to be given to:

Rules with regard to the relevance of uncertainties to the decision

- ✓ Data and knowledge gaps are considered to be irrelevant to the decision if the **result is stable**, i.e. the decision does not depend on the knowledge or data gap identified.
- ✓ Data and knowledge gaps are considered to be irrelevant if detailed information is needed for the assessment that exceeds the PP's level of detail and specificity and if it is ensured that this detailed information will be taken into account in subsequent examinations (SEA or (approval) procedure) – with a view to the effects on the environment as a whole, i.e. in an **integrated** approach, and not with regard to individual sectors or factors/interests to be protected.
- ✓ The requirements to be met with regard to the precision and level of detail of the underlying data and information increase as a function of the importance, sensitivity, ecological value and protection needs of the area/factor/interest affected and as a function of the severity of the potential damage. In case of uncertainties due to insufficient knowledge or data, the effects will have to be considered significant even if their **likelihood** is low when important factors/interests to be protected are effected or major potential damage is possible.
- ✓ The more **uncertainties** exist, the greater the probability that a SEA will be required.
- ✓ In case of **doubt**, the principle should apply that, in case of doubt, knowledge gaps tip the balance towards the need for a SEA.
- ✓ Other:

Notes:

A.3.7. Relevance matrix

Assessment of the potential effects of plans/programmes		C a u s e s																		
		Land use, sealing	Use or shaping of nature and landscape	Water use and abstraction	Use of other resources (raw materials, energy, etc.)	Terrain changes, separating or barrier effects, etc.	Changes in dispersal conditions, etc.	Hydrological changes	Clearing	Traffic generation	Visual, aesthetic changes	Earthflows, mud slides, avalanches, floods	Risk of accidents or failures	Noise (industry and traffic)	Air pollutants (gas and particles, odour)	Liquid emissions	Waste and residues (incl. excavated material)	Cumulation of effects	Synergistic effects	Other
Factors/interests to be protected																				
E f f e c t o n	Environmental media	Land and soil																		
		Groundwater and surface water																		
		Air																		
		Meso- and macro-climate																		
	Fauna and flora	Animals																		
		Plants																		
		Forests																		
		Habitats																		
		Biological diversity																		
	Human beings	Health and well-being																		
		Landscape, etc.																		
		Cityscape and scenery, etc.																		
		Utilisation types																		
		Material assets																		
		Cultural heritage																		
		Interactions, etc.																		
	Other																			

Figure A-2: Relevance matrix

A.4. Notes

- ¹ In general, objectives from the following fields may be relevant: waste management, water management, water protection, spatial planning, transport, nature conservation, climate protection, agriculture, forestry, land use, energy industry, resource economy, industry, tourism. In particular, landscape management plans, development concepts, transport concepts, etc., have to be taken into account.
- ² These are not financial resources. This is corroborated by the separate provision on financial or budget plans and programmes in Article 3 (8) of the Directive, by the wording of the Directive's recitals, in particular the first recital that speaks of the "prudent and rational utilisation of natural resources", and by the German version of the Directive (where the term "Inanspruchnahme" (utilisation) is used for "allocating").
- ³ For example, PPs that only define objectives – and do not specify measures to achieve them – or PPs whose elements are not subject to mandatory implementation will usually be less important in terms of setting a framework as described.
- ⁴ Basically, PPs at the same level ("horizontal") and at different levels ("vertical") in a planning hierarchy may be influenced. In this context, the binding nature of PPs may also be decisive for the fact whether and in how far other PPs can be influenced. In planning hierarchies, the influence may be relevant, in particular, when PPs at a lower level of the planning hierarchy are based on, or implement, higher-level PPs. If a PP does not form part of a planning hierarchy or even is the only one in its sector, there is only minor potential for influences.
- ⁵ The following question is raised in this context: in how far can PPs or the performance of a SEA contribute to avoiding environmental damage in the sense described?
- ⁶ The relevance may be "active" or "passive", so to speak. This means that PPs may give rise to environmental damage ("active") or are affected by them ("passive"). Here, the primary focus will be on PPs contributing, for example, to the solution, reduction or prevention of environmental problems.

- 7 The decisive question is whether PPs contribute to the implementation of the EU's environmental legislation and whether they do so to an adequate extent. Here, a major role is played, for example, by PPs prepared on the basis of Community legislation in the field of environmental protection (e.g. under the Habitat and Water Framework Directives).
- 8 It does not make sense, for example, to look at the concrete volume of air emissions if these are not covered by the PPs with the same level of concreteness.
- 9 Positive effects on the environment are considered, but the CCE does not weigh negative against positive effects with a view to assessing the likely significance of environmental effects. This is reserved for the performance of the SEA proper. This is also true for measures intended to prevent, reduce and offset negative environmental effects, i.e. in general, a decision on their effectiveness can reasonably be taken only within the framework of a SEA.
- 10 In general, "environmental quality" is to be taken into account when assessing the PPs' effects. The following may serve as an orientation: Environmental quality ("ecological status") covers all the structures and functions of an eco-system and provides information on certain characteristics, features and properties of factors to be protected, including resources, potentials and functions, that are defined in terms of substance, space and time. Eco-systemic relationships have to be taken into account. Environmental quality is characterised by a system of objectives that specify the environmental quality to be maintained or achieved in concrete cases. Conservation value, load and desirable quality are determined by means of relevant standards serving as concrete assessment instruments. Indicators are used to define the expression, measurement methods and framework conditions.
- 11 Possible, for example, in case of exclusive utilisation restrictions, changes in zoning from construction land to (certain categories of) green space.
- 12 For example, in case of zoning plans if the building requirements for the land are not affected.
- 13 In general, it may nevertheless make sense to carry out a SEA on modifications of PPs if – for whatever reasons – a SEA was not performed on the PPs themselves even though they (may) have significant environmental effects.

- 14 Possible, for example, in case of town centres, residential compounds and recreation areas (of course, with consideration to the assessment rules).
- 15 For example, regulations related to zoning plans in the *Länder* (that partly use quantitative criteria for the area in addition to qualitative ones), closure of gaps and connections to designated building land in the same zoning category (even if a minor street runs through this area that does not constitute a structural boundary).
- 16 Such as raw materials, energy, building materials, operating materials.
- 17 Taking into account impoverishment or isolation (of elements), urban sprawl, change of land-cover types.
- 18 Including drainage, transfers, etc.
- 19 For example, due to the storage, handling or transport of dangerous substances (e.g. flammable, explosive, toxic, radioactive, carcinogenic or mutagenic substances).
- 20 For example, supply or emergency facilities.
- 21 Including the mobilisation of pollutants.
- 22 Industrial and traffic noise.
- 23 Gaseous and particulate emissions, including substances contributing to the greenhouse effect or to the depletion of the ozone layer as well as odorous substances (both with regard to traffic-related and diffuse emissions); indirect effects caused by dry and wet deposits, eutrophication and acidification due to pollutant inputs, etc., also have to be taken into account.
- 24 Wastewater, including water used for fire fighting, liquid seepage.
- 25 Taking into account waste generation and disposal, recovery and recycling, including excavated material.

- ²⁶ Interactions and interrelationships may include repercussions and counteractions of interventions as well as shifts to other media, accumulation and consequential effects, in addition to the effects mentioned (e.g. cumulative and synergistic effects). In order to cover combined effects, the existing load (e.g. due to current utilisation), the absorption capacity, the additional load caused by the PPs as well as the resulting overall load have to be considered. The essential factor in the assessment of the overall load may be either the existing load (making a low additional load critical) or the additional load (if it significantly changes the previous (local) conditions). Interactions and interrelationships may also concern spatial-functional relationships between eco-systems or their elements and, hence, processes (e.g. change in a regime or ecological balance taking into account interrelationships, such as the food chain). Additionally, the dynamism of relationships (e.g. between water and soil or animals and plants), which may be typical of the structure or function of areas, can play a role.
- ²⁷ Including cumulation with other PPs; if applicable, also due to the fact that PPs are based on other PPs or, in their turn, induce and result into other PPs.
- ²⁸ In case of effects acting together, we can differentiate synergistic effects whose combined impact is greater than the sum total of the individual effects from antagonistic effects whose combined impact is less than the sum total of the individual effects.
- ²⁹ For example, light and shade, (ionising) radiation, electro-magnetic fields, heat and thermal pressures, vibrations, fires, effects of explosions (blast, debris), biological working substances, genetically modified (micro) organisms, infectious material.
- ³⁰ This may be relevant, for example, with regard to meteorological aspects, vegetation seasons and utilisation aspects (time of day).
- ³¹ Including soil structure and type, ecological and physico-chemical characteristics, quality, geological and geomorphologic aspects (e.g. relief, slope inclination and erosion risk).
- ³² Including hydrogeological conditions, hydrochemical and bacteriological parameters, bedload and suspended load balance, flow regime and riparian zones.

- 33 Including temperature, precipitation, humidity, cloudiness, wind patterns, cold air drainage, conditions favouring frost and fog.
- 34 Including vitality, level of organisation, resistance, self-regulating capacity as well as the possibility of reproduction and, if applicable, the restoration of populations.
- 35 Including game, fishes.
- 36 Including plant communities, vegetation height, structure, dynamism, management methods, etc.
- 37 Including location, species patterns, age, dynamism, forest edges, management methods, etc.
- 38 Including interrelationships and networks.
- 39 Diversity of species (including number of species and individuals), habitats and movement ranges (including terrestrial and aquatic habitat requirements, structures).
- 40 Plus their elements and endowments, natural and anthropogenic characteristics and peculiarities.
- 41 Including rhythm as well as visibility and vision.
- 42 For example, housing, leisure and recreation, schools, hospitals, medical institutions, churches, agriculture, paths, forestry, pastures, use of water resources, hunting, fisheries, transport, supply and disposal, other technical infrastructure, raw material extraction, tourism.
- 43 In particular, facilities of traffic (e.g. bridges), supply and disposal infrastructure, etc.
- 44 Consideration is to be given not only to land directly affected or in physical contact (with regard to the PP's domain), but also to neighbouring land, its utilisation and characteristics, if this land can be impacted.
- 45 For example, industrial plants, mines, landfills.

⁴⁶ For example, the environmental quality standards defined in, or based on, the Water Framework Directive and the Air Quality Framework Directive (e.g. under the 1st, 2nd and 3rd Air Quality Daughter Directives).

⁴⁷ For example, rehabilitation areas (*Sanierungsgebiete*) under IG-Luft, polluted areas (air) (*belastete Gebiete (Luft)*) under UVP-G 2000, ozone monitoring areas (*Ozon-Überwachungsgebiete*) under OzonG that require a rehabilitation plan (*Sanierungsplan*); waters and water stretches requiring a rehabilitation programme or plan under WRG; monitoring areas (*Beobachtungsgebiete*) and prospective areas of action (*Maßnahmenggebiete*) under GSwV, etc.

⁴⁸ For example, according to Red Lists.