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Environmental Assessment of Certain Plans and Programmes as Contribution to a Sustainable Spatial Development

Ulrike Weiland

Abstract

A sustainable spatial development requires adequate planning and management instruments; environmental assessments for plans and programmes are considered *one* of those instruments. Although the concrete way to implement environmental assessments in the German planning system is not yet decided, one can ascertain needs for development of spatial and landscape planning nearly independent from the concrete implementation form.

In this article, first the requirements of the Directive on the assessment of the environmental effects of plans and programmes are presented. Afterwards, the probable requirements for further development of spatial and landscape planning are discussed.

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1. Introduction

Especially the dynamic agglomerations are characterised by an unbroken development, connected with changes in land use from open spaces into settlement areas and traffic zones up to the rural districts far from the city centres. Environmental loads, e.g. negative effects on air and water quality, noise, and adverse effects on valuable habitats are negative consequences thereof.

On the other hand, spatial planning shall contribute to a sustainable spatial development as agreed to in the Agenda 21 and prescribed by the German Regional Planning Law and the Federal Building code. In order to turn the spatial development into a *sustainable* spatial development, adequate planning and management instruments are required. Assessments of the effects of plan and programmes on the environment according to the EU Directive 2001/42/EC (European Union 2001) allow for contributing to a sustainable spatial development.

2. Contents of the EU-Directive on the Assessment of the Effects of Certain Plans and Programmes on the Environment

The Directive aims at providing a high level of environmental protection while contributing to the integration of environmental considerations into the preparation and adoption of certain plans and programmes. For plans and programmes, which are likely to have significant effects on the environment, environmental assessments according to the Directive shall be carried out; this shall contribute to a sustainable development. (Article 1, Article 3 nr. 1)

Special conditions determine the “certain” plans and programmes which have to be subject to an environmental assessment: they have to be prepared and/or adopted by a national, regional or local authority, or they have to be prepared by an authority for adoption through a legislative procedure. Environmental assessments are to be carried out only for *formal* plans and programmes, i.e. only for those plans and programmes, who are required by legislative, regulatory or administrative provisions. (Article 2 a)

Formal plans for agriculture, forestry, energy, industry, transport, waste and water management, town and country planning or land use planning shall be subject to an environmental assessment - if they set the framework for the future development of projects which require an environmental assessment for projects according to the “EIA-Directive” 85/337/EEC, or if they have been determined to require an assessment pursuant to the “FFH-Directive” 92/43/EEC. (Article 3 nr. 2) Which plans and programmes in detail will be subject to an environmental assessment has still to be decided while implementing the EU-Directive in the German planning and environmental law and into planning procedures.

The environmental assessment shall be carried out early, i.e. during the preparation process of a plan or programme respectively it’s amendment and before it’s adoption. That means the Directive is of procedural nature. Its requirements can either be integrated into existing planning procedures or incorporated in specifically established procedures. (Article 4)

In Germany exist a lot of prescriptions and procedures, which aim at integrating environmental aspects into planning. Therefore it will to be examined while implementing the Directive into the German planning and environmental law, which acts and procedures are already sufficient in order to meet the requirements of the Directive. In order to avoid double assessments in subsequent planning procedures, the methodology and contents of environmental assessments shall be adequate to the different levels of a hierarchy of plans and programmes and to the different planning scales.

The implementation of the Directive requires the following steps (see fig. 1):

Screening

First, the authorities have to decide, whether an environmental assessment is necessary: In order to implement this decision opportunity into the national right and procedures, the member states have to take into consideration the criteria of annex II of the directive.

The Directive names the prerequisites for *compulsory* environmental assessments as mentioned above (plans and programmes with likely significant effects on the environment, which set a framework for environmental impact assessments for certain projects, and which require an assessment pursuant to FFH-Directive) Furthermore, the Directive offers the opportunity to carry out *facultative*

environmental assessments. The member states are e.g. not obliged to carry out environmental assessments, if plans and programmes determine only the use of small areas at local level or if they are minor modifications of existing plans and programmes. (Article 3 nr. 3)

The Member States can determine, whether they decide either through case-by-case examination or by specifying types of plans and programmes or by combining both approaches. (Article 3 nr. 5)

If an environmental assessment is necessary, the following steps have to be carried out:

Scoping

In the scoping process, the procedure and the elements of the environmental assessment have to be made precise. This concerns e.g. the investigation area, the environmental effects, which require detailed investigation, the alternatives to be examined, and the institutions and the public to be involved and consulted.

Environmental Assessment

The environmental assessment consists of several elements: a) the preparation of an environmental report, b) consultations, c) the decision-making process and d) the provision of information on the decision. (Article 2 b). The sequence of these parts doesn't imply a subsequence or order of steps, because several of these elements shall accompany the assessment and planning procedure (see fig. 2).

Figure 1: Examination steps

The environmental assessment shall contain the following elements (see fig. 2):

Preparation of an environmental report

In the environmental report, the *likely significant effects* on the environment of implementing the plan or programme and *reasonable alternatives* of the plan or programme with respect to the objectives and the geographical scope of the plan or programme, shall be identified, described and evaluated. (Article 5) (see fig. 3)

Consultations

The authorities with environmental responsibilities and the affected and the interested public are to be consulted *during* the assessment of plans and programmes. Appropriate time frames shall allow for sufficient time for consultations and the expression of opinions. Where the plan or programme in question will likely have transboundary effects, transboundary consultations have to be carried out. (Article 6 and 7)

Decision making: taking into account the results *during* the planning process

The results of the environmental report, the opinions expressed, and the results of any transboundary consultation shall be taken into account during the preparation and before the adoption of the plan or programme. (Article 8)

Provision of information on the decision

The institutions and people involved in the decision making process shall be informed on the decision. This information has to contain a) the plan or programme as adopted, b) a statement summarising how environmental considerations have been integrated, how the environmental report and the opinions expressed have been taken into account, the reasons for choosing *this* plan or programme in the light of other reasonable alternatives dealt with, and c) the monitoring measures, which shall allow for evaluating the results of the environmental assessment while realizing the plan or programme. (Article 9)

Figure 2: Elements of the environmental assessment

The environmental report is a central element of the environmental assessment. If the basic aim of the Directive, the optimisation of plans and programmes during their preparation or amendment process, shall be realized, also the preparation of the environmental report has to be procedural, and the results of the environmental report should be considered subsequently during the planning process. According to Annex I and Article 5 (1), the environmental report shall contain the following contents (see fig. 3):

- a) Contents and main objectives of the plan or programme and relationship with other relevant plans and programmes, The “Zero-alternative”: current state of the environment and their likely evolution without implementation of the plan or programme;
- b) Environmental characteristics of areas likely to be significantly affected,
- c) Existing environmental problems relevant to the plan or programme, esp. if “FFH-areas” are likely to be affected;
- d) International, European or national environmental protection objectives relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;
- e) The likely significant effects on the environment, esp. on biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage, landscape and the interrelationship between the above factors;
- f) Measures to prevent, reduce and offset significant adverse effects on the environment of implementing the plan or programme;
- g) An outline of the reasons for the selection of the alternative(s) dealt with, and a description of how the assessment was undertaken including any difficulties;
- h) A description of the envisaged monitoring measures and
- i) A non-technical summary.

Figure 3: Contents of the environmental report

3. Implementation of Environmental Assessments of Plans and Programmes in Germany – Challenges for Spatial and Landscape Planning

Between the requirements of the directive with respect to methodology and contents of assessments of plans and programmes and the German spatial and landscape planning exist many points of contact. On the one hand, environmental aspects have to be taken into consideration in spatial planning according to the Regional Planning Law and the Federal Building Code. On the other hand, landscape planning is – beyond her function as sectoral planning for nature protection and recreation – an essential environmental contribution to spatial planning.

Nevertheless, the implementation of the Directive is connected with several challenges with respect to procedural, methodical and material aspects. Spatial and landscape planning have to be developed further in order to fulfil the requirements of the Directive. Existing experiences can and should be used; environmental assessments for plans and programmes are carried out e.g. in the US, Canada and Australia, in a few Asian states as well as in several European countries. They cover various sectors (e.g. traffic, regional and spatial planning, waste management, agriculture and forestry, tourism, energy supply and water management; see ITA 2000).

Several potential effects on spatial and landscape planning while implementing environmental assessments of plans and programmes are already analysed (see e.g. Bunge 2001, Scholles 2001, Jacoby 2001, Weiland 2001, Haaren et al. 2000); the results of these studies are the starting point of this presentation.

Basically, the way in which and where environmental assessments will be realized, is not yet decided. Several variations of the interrelationship of spatial and landscape planning are possible.

Carrying out environmental assessments by and within the spatial planning requires only few changes of the planning system. This variation could be described as “trend scenario” (Scholles 2001). But this variation leads also to several questions, especially with respect to the relationship and differentiation between landscape plans and environmental assessments. The controlling, i.e. how to guarantee comparable quality standards, requires a continuing communication between all planning institutions, which carry out environmental assessments – a considerable effort.

In a second variation, a so-called “contrast scenario” (Scholles 2001), landscape planning takes on the assignments of environmental assessments. Because the requirements of environmental assessments can also be integrated into existing procedures, and because a new planning instrument like a separate environmental assessment for plans and programmes will be hardly accepted by authorities and planning actors, it is obvious to examine, to what extent landscape planning can fulfil the functions of an environmental assessment.

3.1 Challenges for Spatial Planning

Environmental assessments will have to be realized – besides for sectoral plans – also for formal plans and programmes, e.g. Regional Development Plans adopted by a Land, Regional Plans at regional level and Zoning Plans.

The requirements of the Directive can probably fulfilled within the framework of spatial planning, although the spatial planners discuss this controversially. Largely independent of the chosen variation, how environmental assessments will be imple-

mented in the planning system, a need for further development exists with respect to the following procedural and methodical aspects:

- **Introduction of a screening and scoping** including the consultation of administrations and associations concerned with environmental aspects and of the public; screening and scoping and the documentation of their results for the environmental report according to the Directive aren't regular steps of spatial planning to date (Bunge 2001);
- **Consultation of the public**, including the public affected or likely to be affected by, or having an interest in, the decision-making subject; this requires to enlarge the participation of the public, especially to introduce the consultation of the interested public, and to introduce their consultation at *Land*- and regional level in most of the *Länder*. While implementing the Directive at national level, one will have to decide, whether the interested public will already consulted in the screening and/or the scoping phase. If they will be only consulted while putting the plan or programme and the environmental report on public display, will be probably to late in order to fulfil the requirements of the Directive (Weiland 2001);
- **Consideration of reasonable alternatives** with respect to the objectives and the geographical scope of the plan or programme and the statement of the reasons for selecting the alternatives dealt with in the environmental report;
- **Subjects to the assessment in detail**, i.e. the requirements of Annex I, especially: which aspects of the current state of the environment are considered "relevant", which effects on areas likely affected are considered "significant", which existing environmental problems are considered "relevant" to the plan or programme in question and which are the "likely significant" effects on the environment including biodiversity, population, human health, fauna, flora etc. (Weiland 2001);
- **Gradation of environmental assessments** for subsequent plans in the planning hierarchy; it is to decide, which degree of abstraction or detail will be considered adequate to the different planning levels (Jacoby 2001);
- **Development and procedural consideration of the environmental report**; in this connection is to decide, at which extent landscape plans can contribute to the environmental report, i.e. whether they can use as environmental report or at which extent they can use as basic information for the environmental report. Another question is, whether the spatial planning authorities have sufficient capacities in order to develop environmental reports. (see also chapter 3.2)
- **Information on the decision**; a formal information on a planning decision including a statement summarising how environmental considerations have been integrated and how the environmental report and the opinions expressed have been taken into account, a documentation of the reasons for choosing the plan compared to other reasonable alternatives and a documentation of the measures decided concerning monitoring is not a standard procedure in spatial planning;
- Also a **monitoring of the significant environmental effects of the implementation of the plan or programme** is not standard; the existing monitoring arrangements may be used if appropriate, but it is likely, that they are not everywhere and not at every planning level sufficient with respect to the objectives of the Directive.

The implementation of the Directive coincides with major debates on adequacy, efficacy and efficiency of spatial planning. Regional and local planning shall both set general frameworks and be implementation-orientated; they shall both consider the long-term perspective and allow for short-term action. Furthermore, spatial planning especially at regional level gets more and more the character of a spatial management; increasingly joint objectives of a larger number of actors are realized by concrete measures and actions, also by many actors. Short time planning of projects and contracts between public and private actors (PPP) gain importance compared to formal comprehensive plans. Thus, spatial planning becomes more process-oriented. Because many local problems are no longer to solve at local level, the regional action and planning level gains importance (Weiland 1999). New participative and cooperative planning and management forms are applied and discussed, e.g. regional management, regional conferences, regional development concepts, and new organization forms are established, e.g. regional parliaments. Both the further development of Regional plans and of zoning plans is under discussion. These changes in spatial planning should be taken into consideration while implementing the Directive on the environmental assessment of certain plans and programmes.

3.2 Challenges for Landscape Planning

Landscape planning has been strengthened in central aspects by the amendment of the law on nature protection (BnatSchNeuRegG) from 4-2-2002. Landscape plans shall be drawn up exhaustively from now on, and the ecosystems approach of protection, renewal and development of the ecological balance, which is included in the objectives and principles of landscape planning, shall be emphasized clearly.

Landscape plans shall describe the existing and the predictable state of nature and landscape, they shall put the objectives and principles of nature protection and landscape conservation in concrete terms, they shall evaluate the existing and the future state of the environment with the aid of the objectives and targets, and they shall describe conflicts between existing and future land use (as far as known) and the nature protection objectives and principles. Beyond that, they shall present the requirements and measures in order to avoid, reduce or remedy adverse effects on nature and landscape, measures for establishing habitat systems and especially for the European habitat system "Natura 2000".

The following aspects illustrate the nearness of landscape planning to environmental assessments (Haaren et al. 2000):

- Landscape plans, especially exhaustive plans, hold out essential information for the screening and scoping;
- They aim at the protection of the whole natural household and the natural balance – in contrast to the sectoral plans as e.g. the clean air plans or the water framework plans.
- They contain environmental quality objectives, which serve or can serve as benchmarks for the evaluation of environmental quality, existing environmental problems and environmental effects of plans and programmes.
- Especially local landscape plans comprise already today essential subjects of the environmental report, i.e. the description of the existing and the predictable state of nature and landscape, the objectives and principles of nature protection and landscape conservation, the evaluation of the existing and future

state of the environment and the description of conflicts between land use and the nature protection objectives and principles.

Nevertheless, the implementation of the Directive is connected with essential procedural and methodical challenges to landscape planning:

- **Procedural nature of environmental assessments:** Because environmental assessments shall be developed parallel to the development or amendment process of the plan or programme, also landscape planning has to be developed in a procedural way. "Flexible modules" shall meet these requirements (Haaren et al. 2000).
- **Enlargement of public participation:** Communicative phases with hearings and negotiations will have to be integrated in the development process of landscape plans and programmes – similar and parallel to spatial planning – especially at the higher planning levels (*Land* level and regional level);
- **Temporal coincidence:** Landscape plans and programmes should be developed with a little margin (of only a few months) before the spatial plans and programmes, in order to represent present-day information and a present-day state of planning (Haaren et al. 2000);
- **Spatial coincidence:** Landscape plans and programmes should cope the same area as spatial plans and programmes; this is mostly, but not everywhere the case (Haaren et al. 2000);
- **Coordination with the sectoral environmental plans and weighting of different concerns:** If a landscape plan or programme shall take over the functions of an environmental report, it has to be coordinated with the other sectoral plans, and it has to present a weighed result of this coordination process. But the weighting requirement clashes with the nature and landscape protection function of landscape plans, a major conflict for landscape planning;
- Also the **assessment of reasonable alternatives** of the plan or programme with respect to its objectives and geographical scope will have to be introduced;
- A part of the **environmental effects**, which have to be taken into consideration, are already subject to landscape plans or will be subjects after the amendment of the nature conservation act: biodiversity, fauna, flora, soil, water, air, climate and landscape have to be protected by landscape plans. According to annex I of the Directive, also population and human health, material assets, cultural heritage including architectural and archaeological heritage and the interrelationships between the above factors have to be considered in the environmental report. The issues to be protected by the Directive are more comprehensive than those of landscape plans. It is an open question, whether these issues can be dealt with on the basis of the nature conservation act;
- The **comprehensive definition of environmental effects to be considered** make high demands on the analysis, prognosis and the assessment of environmental effects and environmental interrelationships. Not only direct effects, but also secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects have to be taken into consideration (Annex I f). This can only be handled with a systems approach and on the basis of adequate and detailed information (see Weiland 1998).

In summary: according to their legal assignment, landscape plans and programmes are suitable to take over the functions of an environmental report to a great extent. But in order to implement the requirements of the Directive, their development or

amendment processes have to get a more procedural character with integrated phases of consultations. Open questions remain with respect to the

- Weighting and coordination with the sectoral plans,
- Consideration of alternatives and
- Comprehensive consideration of environmental effects.

Also landscape planning is – similar to spatial planning - in a process of reorientation. The approaches to a communicative and cooperative planning are not yet standard (Luz/Weiland 2001), and the debate on reaching a consensus on the “good professional practice” has just begun. This debate on the further development of landscape planning should be used for and combined with the debate how to implement environmental assessments for plans and programmes.

4. Conclusions

The implementation of the Directive should be used as motive for coordinating the future development of spatial and landscape planning. This procedure can contribute to reconcile and optimise the different forms of regional and landscape planning, and to diminish the differences in the planning forms between the *Länder*. A reconciliation of the Land-specific planning forms could contribute to an increase of their efficacy and efficiency.

In summary, neither spatial planning nor landscape planning are able to meet the requirements of the Directive without major changes and developments. If environmental assessments will be integrated into the existing planning procedures without their further development, a greater part of requirements will remain unfulfilled. A modification of planning procedures, the development of separate environmental reports, which supplement the landscape plans and programmes, and the provision of a non-technical summary will probably be necessary in order carry out environmental assessments for plans and programmes according to the Directive. Thus, they can contribute to a sustainable spatial planning at a greater extent than today.

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