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Quality of federal level strategic environmental assessment – A case study analysis for transport, transmission grid and maritime spatial planning in Germany

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ABSTRACT

Strategic environmental assessment (SEA) emerged from Environmental Impact Assessment (EIA) and was developed based on the procedural steps and understanding thereof, but with the goal to fulfil a more 'strategic' function. Federal level plans and programmes constitute the highest planning levels in Germany subject to SEA, as SEA for policies is not compulsory.

In this article, we analyse the quality and procedural effectiveness of federal level SEA in Germany with the underlying hypothesis that federal level SEA might be more strategic than SEA at other planning levels, as it represents the highest tier. Therefore, we analysed three federal level SEA case studies in Germany according to a set of criteria and indicators based on international research outcomes, including SEA integration into decision-making, tiering, scoping, selection and assessment of alternatives, cumulative effects assessment, public participation, and monitoring.

Results demonstrate that the procedural effectiveness of SEA practice at the federal level is limited in Germany, and the making of SEAs proved not to be as 'strategic' as its important role prior to subsequent planning processes and outcomes would suggest. Reasons include an alternatives assessment restricted to macro-siting instead of assessing scenarios of demand or system alternatives, tiering limited to general advice without specific guidance for subsequent planning levels, cumulative effects assessment limited to intra-plan effects, a lack of monitoring, and public participation limited to consultation on the environmental report. These findings support results from a variety of international studies. Reasons for limitations have been identified in current SEA regulations, prior policy-making, institutional settings, the institutions' willingness to learn and limited quality management by the German Federal Environmental Agency. Thus, our recommendations aim to improve quality management and learning by initiating a federal level SEA forum to discuss federal level planning and SEA practice and related issues, expanding the federal EIA portal to SEAs, quality management by the German Federal Environmental Agency in every federal level SEA scoping process and for every federal level environmental report, and further research and development to improve SEA practice.

However, the general question for SEA research might be whether SEA contributes to long-term institutional learning processes beyond individual SEA processes, and how those learning processes can be supported, for instance by quality management and capacity building.

1. Introduction

The concept of strategic environmental assessment (SEA) evolved from EIA, was developed based on the procedural steps and understanding thereof (Fundingsland Tetlow and Hanusch, 2012), and various authors have argued that SEA needs to be more 'strategic' than EIA

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(e.g. Bidstrup and Hansen, 2014; Fischer, 2007; Lobos and Partidario, 2014). However, it has been recognised that SEA is a single concept which comprises multiple forms (e.g. Dalal-Clayton and Sadler, 2005; Verheem and Tonk, 2000). Noble and Nwanekezie (2016, p. 6) introduce four conceptual groups of SEAs from less strategic to more strategic: "compliance-based SEA", "EIA-like SEA", "strategic-futures SEA" and "strategic-transitions SEA".

Federal level SEAs are conducted under the responsibility of federal level agencies and usually deal with plans and programmes that apply to an entire country, potentially including its territorial waters. Federal level SEAs are situated at the highest level of federal plan-making, subsequently followed by state level, regional level, and local level planning. Federal level SEA can set paths and frameworks for subsequent planning and SEA. This involves, for instance, consideration of a broader range of alternatives (cf. Noble, 2000). Therefore, federal level SEA is expected to have great potential to be more strategic than other tiers.

Federal level, or national level SEA, is practiced in various countries all over the world. For example, in Sweden, a National Transport Plan subject to SEA is prepared every four years (Travikverket, 2018). In the Netherlands, a National Water Plan was prepared in 2014 and subject to SEA, which was designed to comply with the EU Water Framework Directive, the EU Floods Directive (2007) and the EU Marine Strategy Framework Directive (Ministry of Infrastructure and the Environment and Ministry of Economic Affairs, 2015). National grid plans have been prepared for both Ireland and Portugal (EirGrid, 2013; Rede Eléctrica Nacional, 2011). In the U.S., nationwide PEIS (Programmatic Environmental Impact Studies), such as the PEIS for the Nationwide Public Safety Broadband Network and for the Biomass Crop Assistance Program, further illustrate relevant applications (First Responder Network Authority, 2018; United States Department of Agriculture, 2010). In addition to these examples, some SEAs for large-scale programmes have been prepared in the U.S., such as a PEIS for Solar Energy Development in Six Southwestern States (U.S. Department of Energy and Bureau of Land Management, 2012) and the National Energy Programme in Slovenia was subject to SEA (Aquarius, 2011).

SEA has already been evaluated in various contexts. Most often, SEA practice is either evaluated in a specific country or administrative system (e.g. Bina et al., 2011; European Commission, 2016, 2009). For instance, the European Commission (2016, p. 122) concludes that "positive trends in the progress made in the implementation of the SEA Directive can be observed" but "evaluating the effectiveness of the SEA Directive is complicated" because the individual SEA context is an influencing factor. Other studies examine specific aspects of SEA, such as cumulative effects assessment or public participation. For instance, Walker et al. (2014) found that in two SEAs from Kenya, marginalised populations were invited to participate, but the participation was announced inadequately, documents were inaccessible, and the selection of alternatives was not subject to public participation. Bidstrup et al. (2016) found that cumulative effects assessment is restricted by the plans' topical boundary, which means that for mining plans non-mining actions are not considered in cumulative effects assessment.

Various authors have analysed federal level or national level SEAs along with other case studies (e.g. Geißler, 2013; Runhaar and Driessen, 2007; White and Noble, 2013b) or limited to one specific sector, such as the transport sector (Fischer, 2006), but without focusing on federal level SEA in detail. Runhaar and Driessen (2007) tested a framework for analysing the impact of SEA on decision-making using the Dutch Second National Plan on Mineral Resources along with three other case studies. The authors conclude that, despite the fact that the National Plan on Mineral Resources was not finally decided, "the SEA has had an impact on later policy decisions" (Runhaar and Driessen, 2007, p. 8) as later decisions followed outcomes of the SEA. The early start of SEA and the broad acceptance of SEA outcomes were factors that contributed to that impact (Runhaar and Driessen, 2007). White and Noble (2013b) analysed the UK Draft National Policy Statements for Overarching Energy and the Portugal National Transmission Grid Plan amid four other case studies. Both SEAs included an alternatives assessment, cumulative effects assessment and also assessed social, environmental and economic impacts (White and Noble, 2013b). For the Portugal National Transmission Grid Plan the SEA was reported to have "led to increased understanding of the environmental issues associated with the PPP" (White and Noble, 2013b, p. 16) and for both SEAs interview participants reported that SEA improved collaboration and communication (White and Noble, 2013b). Geißler (2013) analysed eight U.S. case studies along with three federal level SEAs in Germany and another three German case studies. The author concludes that the German SEAs had "little chance of influencing the planning process due to a lack of alternatives and cumulative effects assessment" (Geißler, 2013, p. 27). Fischer (2006) introduces a systematic tiering framework for transport sector SEAs which relies on the premise of policy SEA where transport visioning and policy-making is subject to SEA.

However, in contrast to numerous papers on SEA evaluations federal level SEA has only marginally been the subject of SEA evaluations. The aim of this article is to analyse the quality and procedural effectiveness[1] of federal level SEA in Germany as experience has increased in recent years. Our research questions are: (1) Does federal level SEA conform to international SEA high quality standards? (2) What limits the current federal level SEA's good practice? (3) How can relevant shortcomings be addressed and improved? In more detail, we pursue the hypothesis that federal level SEA making may be more strategic than other tiers as it constitutes the highest planning level.

In the following, we introduce the case study context of federal level SEA in Germany (Section 2). Section 3 introduces the methodological approach and Section 4 constitutes the centrepiece of the case study analysis: the application of the analytical framework to three significant federal level plans. Finally, we discuss the overall findings (Section 5), draw recommendations (Section 6), and provide lessons learned for an international audience (Section 7).

2. Case study context: federal level SEA in Germany

As is the case in many other EU Member States, no formal SEA existed in Germany before the EU SEA Directive came into force. The EU SEA Directive was transposed into German federal law in 2004 and 2005. First into the spatial and land-use planning laws, namely the Federal Building Code and the Spatial Planning Act, and second, into the extended EIA Act as well as the EIA Acts of most of the German states. Prior to the national implementation of the EU SEA Directive, federal level agencies had not been involved in any voluntary SEAs and even for the Federal Transport Infrastructure Plan 2003, developed after adoption of the EU SEA Directive, only a voluntary environmental risk analysis without public participation was conducted (Fischer, 2006). In parallel to SEA for plans and programmes federal level legislative initiatives are subject to impact assessment including a sustainability assessment (Section 5.3).

Conducting a federal level SEA in Germany is usually the responsibility of federal authorities, e.g. Federal Ministries, or subordinate agencies such as the Federal Network Agency which is subordinate to the Federal Ministry for Economic Affairs and Energy. The plans and programmes often cover the entire country or the entire EEZ (Exclusive Economic Zone) of the North and Baltic Sea. The German Federal Environmental Agency is the federal agency responsible for health and environmental issues. It also holds specific SEA expertise, and therefore must be involved in federal level scoping and in consultations on environmental reports according to the EIA Act (2017). Hence, the Agency plays a crucial role in the field of federal level SEA in Germany.

[1] Bond et al. (2018) consider quality, namely optimacy, as an input to procedural effectiveness.