



High speed rail comparative strategic assessments in EU member states



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ABSTRACT

This paper explores the role and capacity of strategic level assessments in addressing the strategic dimension of High Speed Rail (HSR) proposals and influencing decision-making processes. The overall research objective was to find out to what extent opportunities for strategic thinking are being undertaken in HSR. Three different cases of high speed rail were compared – High Speed Rail 2 (HS2) in the UK, High Speed Rail Network (RFAV) in Portugal and European Gauge Railway Line Kaunas in the Lithuanian-Latvian Border (Rail Baltica 2). Strategic environmental assessment (SEA) effectiveness literature was reviewed to draw on criteria that could establish a comparative framework to explain how environmental and sustainability assessments were undertaken in the three aforementioned European high speed rail case studies. Research results allow us to conclude that an SEA or a sustainability assessment/appraisal (SA) will be most beneficial if developed before any HSR project to first determine if HSR is really necessary and strategically justifiable to the achievement of both environmental and sustainability objectives. Results achieved suggest that even though the SEA and SA in the three cases studied can be said to have influenced the planning process mostly at project-level decisions, it also shows a missed opportunity to contribute to developing a high level strategy for HSR that addresses several strategic issues, assessing options before they are undertaken.

1. Introduction

Thanks to transport systems, accessibility and mobility have vastly improved enabling the development of modern societies and economic growth. However, these transport activities come with negative impacts related to CO₂ emissions, accidents, land take, landscape fragmentation, land use changes and others. Current major challenges, such as demographic evolution, urbanisation, the scarcity of natural resources, increases in oil and energy prices and increase in travel demand, mean there is a need for more efficient, sustainable transport solutions, one of which could be rail, especially High Speed Rail (HSR) (Jehanno et al., 2011).

The European Union promotes the rail network to reinforce the economic, social and political cohesion of the Union by integrating peripheral regions in the longer term, as part of an EU-wide transport policy to improve territorial integration (Jehanno et al., 2011).

A European HSR network is an infrastructure of such magnitude, and with such repercussions on the environment, economy and population's lives that the importance of strategically assessing its sustainability and environmental issues can be hardly questioned. And indeed,

instruments such as strategic environmental assessment (SEA) and sustainability assessment/appraisal (SA)¹ have been used with the intention to support the decision-making processes.

Scholars on SEA have agreed that the purpose and aims of SEA change depending on the planning and decision-making context in which it is applied (Partidario, 2000; Sheate et al., 2003; Hilding-Rydevik and Bjarnadóttir, 2007; Bina, 2008; Tetlow and Hanusch, 2012; White and Noble, 2013). Fischer (2007) states that the role of SEA is to take environmental and possibly other sustainability aspects into consideration in policy, plan and programme (PPP) making above project level, while João and McLauchlan (2014) believe SEA “has as its broad aim the inclusion of environmental considerations into strategic decision-making” (João and McLauchlan, 2014: 87). With a more strategic approach, Partidário (2015) believes SEA should be “an instrument of change towards more sustainable patterns of behavior and development, by following strategic thinking and constructive approaches” (Partidário, 2015: 1). The author also states that SEA must incorporate environmental issues earlier on, integrating them in the strategic decision-making process and formulating and discussing strategic alternative options. Furthermore, if ‘strategic thinking’ SEA

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¹ In the UK the term ‘Sustainability Appraisal’ is used for the more internationally accepted term of sustainability assessment (Morrison-Saunders et al., 2015).

could be attained, it could “facilitate decision-making by involving key actors, enabling dialogues towards mutual understanding, offering flexibility, [and] ensuring a long-term and large scale perspectives when considering development options that help to meet sustainability aims” (Partidário, 2015: 6).

Therefore, instead of focusing on assessing environmental or sustainability impacts of proposals, a strategic nature SEA or SA would instead identify and address strategic issues that could enable the integration of long term broader sustainability issues at early stages in view of preventing potential impacts. In line with this thinking, conducted research has explored which strategic issues could be important to help understand the strategic dimension in a transport system such as HSR in the context of the application of SEA and SA.

The main goal of this paper is therefore to explore to what extent opportunities for strategic level assessments have been explored in the HSR network in Europe, in particular, how SEA and SA have incorporated the strategic dimension in HSR transport system. In order to do so, three different strategic level assessment cases of HSR were selected for a comparative analysis, from Portugal, Lithuania-Latvia, and the UK. A common framework for comparative analysis was adopted, attempting to answer two research questions: 1) Is SEA/SA addressing strategic issues? and 2) How is SEA/SA influencing the decision-making process? In order to answer these questions, we seek to determine if there were only operational issues considered, or if there were also strategic issues addressed, and if the SEAs/SA were useful for making a decision regarding the respective HSR plans.

2. Research methodology

The research was driven by the overall research objective to find out to what extent opportunities for strategic assessment are being undertaken in HSR, with the single purpose of comparing the *nature* of SEA/SA in the three case studies using two research questions: 1) how strategic issues were addressed and 2) what influence they had in decision-making. The research methodology (Fig. 1) was based on a literature review and case-study analysis to enable answering the two research questions as above.

Different SEAs/SAs could also be compared in relation to the *effectiveness* of SEA/SA in delivering intended outcomes in each of the cases, however that would imply covering a much larger number of factors and considering a plurality of perspectives (Cashmore et al., 2010; Sheate and Eales, 2016) which this paper deliberately did not want to address. It would also require a very different evaluation methodology and logic model, as well as access to actors/practitioners and other stakeholders involved in the specific cases, which can be the object of a subsequent paper. The literature review addressed three different aspects. A review of environmental and sustainability assessment in order to better understand concepts and challenges in implementing instruments such as strategic environmental assessment (SEA) and sustainability assessment/appraisal (SA) in policies, plans and programmes. A literature review was also undertaken to identify what would be strategic issues in HSR that presumably should be addressed in strategic level assessments. Additionally, a review of SEA effectiveness understanding was undertaken with the sole purpose to appreciate how a range of authors characterise an ‘ideal’ or ‘effective’ SEA process, and which criteria or factors are used to promote good or best practice. As the review of effectiveness literature was not intended to build a comprehensive effectiveness evaluation framework it did not seek to be comprehensive.

Based on this review, a simplified framework of environmental and sustainability assessment criteria was adopted, and a range of HSR strategic issues identified, to enable a comparative assessment of the *nature* of SEA/SA undertaken in the three case studies. The criteria were selected based on the extent they could be used to answer this paper's research questions: how strategic was the SEA/SA, and what influence the assessments had on decision-making.

The selection of case studies also followed three criteria: 1) all case studies should be European; 2) have their assessment reports publicly available; 3) have reports available in English or in Portuguese.

As a result, three different environmental and sustainability reports of high speed rail from EU member states were collected and analysed:

- Portugal: strategic environmental assessment of the high speed rail network (RFAV);
- UK: appraisal of sustainability (AoS) of HS2 (London to the West Midlands);
- Lithuania-Latvia: strategic environmental assessment report of the European Gauge Railway Line Kaunas – Lithuanian-Latvian Border (Rail Baltica 2).

While the UK case study is an AoS² and the other two are SEAs, they were considered comparable instruments in this context, with similar object and scope of assessments, as well as general methodological approaches. All three cases follow the requirements in the SEA Directive, with the AoS being the assessment with the most strategic and integrated perspective of the three cases considered given the nature of AoS. But in the context of the research question of this paper, different detailed methodological aspects were considered not relevant to distinguish the cases. A comparison of the three case studies was conducted using the adopted framework of criteria and the results analysed.

3. Comparative assessment framework on the strategic nature of SEA/SA in HSR

Based on the review of the criteria used in existing best practice frameworks in the literature, a selection was made based on the potential of the respective criteria to assess the extent to which a strategic and influential SEA process would have been carried out in each of the three selected case studies, including the reflection in changes to the PPPs.

The focus was a comparison of core components of best practice. It was found that one of the most fundamental criteria for best practice SEA is **Public Participation**, which contributes to the quality of the SEA process (Wang et al., 2012) and must occur as early as possible (Zhang et al., 2013). An open participative process with both stakeholders and affected public throughout the decision-making process assures their interests and concerns will be reflected in the final PPP (Acharibasam and Noble, 2014; van Buuren and Nooteboom, 2009; IAIA, 2002), improving the legitimacy of the PPP proposal, affecting the assessment and influencing the decision (Hanna and Noble, 2015). The interaction between stakeholders with different interests and strategies allows a stronger SEA (Lobos and Partidário, 2014) with a shared vision and a discussion on strategic priorities, problems and rules for sustainable development (Partidário, 2012). This is also consistent with the need under the 1998 UNECE Aarhus Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters for ‘early and effective’ public participation when options are still open, in part reflected in the SEA Directive.

There is also widespread agreement that the **Entry point** and the **Timing** of the SEA are crucial for its best practice (Wang et al., 2012; Acharibasam and Noble, 2014). If SEA is initiated at the start of the planning process, stakeholders can be engaged in providing inputs which can be integrated in the process, and changes in the PPPs more likely to be made (van Buuren and Nooteboom, 2009). The information

² The term ‘Appraisal of Sustainability’ (AoS) in the UK is normally reserved for a specific form of Sustainability Appraisal in relation to National Policy Statements that provide the framework for nationally significant infrastructure projects (NSIPs), governed by the Planning Act 2008 (see Sheate, 2017). The use of the term in the case of HS2 appears to have been to distinguish it from the normal use of Sustainability Appraisal which is for local authority development plans. Both AoS and SA in the UK are normally expected to meet the requirements of the SEA Directive.

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