

Integrating Strategic Environmental Assessment into Transport Planning Process in China

Zhiyan Zhang^{1,a}, Fenghong Shi¹, Fang Li¹

¹Tianjin Binhai New Area Environmental Monitoring Station, Tianjin, China

^a Email: 26227928@qq.com

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Abstract: With the special legal assessment requirements in the EIA Law in China for environmental effects of the transport plan, some provisions have been made to facilitate the implementation of transport SEA to integrate environmental considerations into transport decision-making process. Following the popularisation of SEA in recent years, there have been hundreds of examples of transport SEA practice. A number of successful case studies are provided and well illustrated by scholars and organizations. This paper discusses the relevance of the international experience to the development of transport SEA in China. The evolution of transport SEA legislations in China is also presented and analyzed in this paper.

Introduction

The road density increased from 37.33 km/10²km² in 2007 to more than 50 km/10²km² in 2015 as well (Moc.gov.cn, 2015). It is also obvious that the construction activities of transport development have caused a number of negative social and environmental consequences. A large number of systems, frameworks and decision support tools have been developed to balance the social, economic and environment impacts to establish the sustainable transportation systems in China. Strategic Environmental assessment (SEA) is one of several frameworks that have been developed to support decision making for sustainable development all over the world (Therivel et al., 1992; Wood and Djeddour, 1992; Sadler and Verheem, 1996; Dalal-Clayton and Sadler, 2005). The development of transport SEA in China has its own special context and the researches in this field is still far away sufficient. This paper discusses the relevance of the international transport SEA experience to China and the necessity to implement transport SEA.

Relevance of the international transport SEA to China

The transport sector has been one of the most common applications of international SEA, especially in the European regions (Sheate, 1992; Heich, 1999; Barker, 2001; Bina, 2001; Fischer, 2002; Fischer, 2004). For example, Heich (1999) described the methodologies and approaches for the assessment impacts of the Trans-European Transport Network and Fischer (2004) evaluated transport policy making and SEA practice in three European cities. There is evidence that it is the prevalence of important cumulative environmental impacts, such as greenhouse gas emissions and local air pollution, and induced environmental impacts, such as the impact on urban land use and urban planning, that facilitate the integration of SEA into the transport planning process. It is also often suggested that the transport sector has good opportunities for 'tiering', whereby recommendations from SEA can influence project EIA in an effective manner. Compared with the previous case-study-based SEA assessments (Therivel et al., 1992; Therivel and Partidario, 1996;

Bina, 2001), Fischer (2002) provided the first systematic comparative analysis of SEA in the transport sectors focusing on the underdeveloped area. Following the popularisation of SEA in recent years, there have been hundreds of examples of transport SEA practice. A number of successful case studies are provided and well illustrated by scholars and organizations, i.e., the European Commission and the World Bank. Based on the review of SEA literature, some useful lessons can be drawn to the transport SEA in China.

(1) Three forms of SEA practice are concluded from the current case studies to be applied to transport SEA in China, namely impact-centred SEA, objective-based SEA and institution-centred SEA (Partidário, 2007; Ahmed, Sánchez-Triana, 2008). When environmental effects and opportunities can be readily identified and predicted, impact-centred SEA is most common applied which essentially follows the same procedure as project based EIA. However, the form is less effective in decision-making context characterised by high degrees of complexity and uncertainty. Objective-based SEA study focuses on the extent to which different proposals meet the stated policy objectives. This approach is most useful in transport plan and programme level SEA where there is a clear an agreed set of environmental policy. To date, the institution-centred approach has mostly been applied at the policy level of SEA. There are opportunities to apply institution-centred SEA at the plan and programme level, particularly where institutional capacity (environmental management capacity) and the development of capacity building recommendations are a key focus.

(2) A stakeholder is any entity with a declared or conceivable interest or stake in a policy and plan concern. As transport development always involves multiple agencies, suggestions from the stakeholders related the assessed policies and plans are essential for transport SEA. Best case studies invariably emphasis the importance of stakeholder consultation and participation in the SEA process.

(3) The scoping phase of transport SEA is critical. The appropriate scoping can provides important opportunities to inform and involve stakeholders in discussion on objectives, indicators, initial ideas on alternatives and data availability. Most researches illuminated that it is neither feasible nor useful to aspire to cover every possible environmental, social and economic impact of the transport plan. Rather, SEA is most effective when it identifies and explores the most significant issues, impacts and linkages of the plan.

(4) The complexities related to transport planning system highlight the need for the SEA methodologies to deal with uncertainties. More attentions have been attracted but still few effective approaches were established. Moreover, the allocation of tasks within the systematic tiering SEA framework would be paid more attentions in the transport SEA process. Fischer (2006) argued that the systems-based SEA framework in European regions consists of the following main assessment tiers: transport policy related SEA, transport network plan related SEA, transport corridor plan related SEA and transport project related SEA. The focal points for the SEA (including key tasks, types of impacts, indicators and administrative levels) differ for each later.

The international experience is a good reference for transport SEA in China. However, it is believed that there is no “one size fits all” model for conducting transport SEA practice. Further researches would be made to facilitate the development of sustainable transportation within the special context of China.

The evolution of transport EIA legislations in China

China first stipulated its EIA system required by the Environmental Protection Act of the People’s Republic of China (On trial) enacted in 1979 and this legal foundation was specially reiterated in the Environmental Protection Act of the People’s Republic of China issued in 1989. From then on,

the project EIA became a binding principle of environmental management in China and one of the important cornerstones for feasible studies of construction projects. In the following decades, several supplementary provisions and regulations related to EIA were promulgated by the state council and authorities to improve the project EIA system in China until the promulgation of the EIA Law in 2002. As for transport projects, the Ministry of Transport issued the Environmental Protection Administrative Measures for transport projects (On trial) in 1987 to formally start up the transport EIA practice. In 1996, the Specifications for Environmental Impact Assessment of Highway (On trial) were formulated to standardize the procedure and framework of transport EIA in the view of legal point which greatly advance the transport EIA practice in China. Consequently, the transport EIA, in company with the Three-Simultaneous Regulation in order to put into effect the measures proposed in the EIA report, has been playing an important role in balancing the social, economic and environment impacts caused by the mass transport constructions.

What's more is that there are also jurisdiction clauses related project EIA in the relevant laws in China, such as the Marine Environmental Protection Law, the Law on Prevention and Cure of Water Pollution and the Law on the Prevention of Air Pollution, which are also play an essential role in the transport EIA system. However, at the beginning of establishing project EIA system, SEA has not been brought to the transport environmental protection legislation yet. At that time, regional environmental impact assessment (REIA), the product in the period of specific economic development in China, reflects the nature of SEA (Zhu, 1995; Xu et al., 2000) and was regarded as one form of SEA and the prototype of SEA in China. But still no transport-related REIA practice was concerned.

The Need for transport SEA in China

The necessity of extending EIA to SEA has been widely argued by a lot scholars and professionals (Therivel, 1992; Alshuwaikhat, 2005; Sanchez, 2008). The project EIA is usually carried out at the stage of the feasibility study of certain construction project in China required by the EIA law. As the environmental evaluation is requested after the completion of the strategy-making, transport EIA is limited to traditional environmental issues, i.e. water, air and noise pollution, and often loses sight of, even unable to deal with, the cumulative and indirect impacts to ecological system and human environment at regional and global level. In most cases an EA process responds to a well-developed project proposal, however, more ambitious accounts of EA suggest that it has the potential to influence the policies, plans and programs or development proposal throughout the various stages of its design, development, implementation and review. It is urging for transport authorities to integrate environmental considerations into the transport strategy-making process through SEA.

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