Institution: University of Liverpool

Unit of Assessment: 17A Geography, Environmental Studies and Archaeology: Geography and Environmental Studies

Title of case study: Strategic Environmental Assessment

1. Summary of the impact

Strategic Environmental Assessment (SEA) research conducted in the Spatial Planning and Impact Assessment Research Group (SPIA) since 2004 has examined how policy makers can support a high level of environmental protection through integration of environmental considerations into the preparation and adoption of policy. Research has made a key difference to the capacity of policy makers to shape more environmentally sustainable policy through evidence based policy making which is informed by environmental assessment procedures and techniques. Research findings have fed into guidance and other documents of national and international organisations in relation to designing environmentally sustainable policy.

2. Underpinning research

SPIA SEA research has resulted in over 25 refereed journal articles, over 30 books, monographs and book chapters since 2008. SEA is a decision making support instrument of public policies, plans and programmes (PPPs). It is formally applied in over 50 countries, with 1000s of SEAs being conducted in numerous sectors every year. SEA consists of common and specific elements that vary, depending on the situation of application. Whilst common elements are routinely included in SEA systems world-wide, specific elements require a tailor-made approach which is difficult to achieve and there are numerous options that may be followed. It is within this context that SEA theory and practice has been made a core research area in SPIA (Prof Fischer since 2002; SL Kidd since 2004; Lecturer Jha-Thakur since 2006; Lecturer Jay since 2011). Activities started with Fischer's (2004) evaluation of three best practice SEAs, generating empirical evidence for what contributes to SEA's effectiveness in influencing transport policy making in the UK, the Netherlands and Germany. Based on an evaluation of context conditions (institutional structures, decision making cultures), recommendations were made to policy makers and national/international institutions operating at different decision making levels for the most suitable format of SEA procedures, assessment methods and institutional set-ups (including important support elements and an understanding of when key decisions are made) Fischer, 2005).

This initial project has been followed by over 10 research projects since 2002, led by Fischer and Kidd, funded by the ESRC (RES-182-25-0018, ES/J013757/1), British Academy (Sino-British Fellowship Trust 2006-7), EC Erasmus Mundus (Action 3, 2008-2010), EC ESPON (http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/EATIA.html; 2009-11) and others. These projects critically reviewed existing SEA knowledge, looking at ingredients for making SEA more effective in supporting more environmentally sustainable decisions (Fischer, 2006). The validity of three main theories was tested on the basis of concrete empirical evidence in numerous countries with regards to SEA's effectiveness, including Bartlett and Kurian's 1999 'information processing model' (i.e. SEA is changing decisions by providing information), Culhane et al's 1987 'external reform model' (i.e. SEA is changing decisions by changing perceptions of those involved in systematic SEA procedures; Jha-Thakur et al, 2009) and Taylor's 'institutionalist model' (i.e. SEA changes established routines by being formally required and by introducing various institutional elements into PPP systems, e.g. expert accreditation). Opposite to what had previously been suggested, all three theories were found to be valid, thus resulting in three associated functions of SEA. Their implications need to be considered when designing effective SEA systems. An 'indicator toolkit' was subsequently designed (Fischer, 2007), helping policy makers to understand what elements in their respective systems need to change / be introduced to support effective SEA, leading to an improved consideration of those substantive elements that make up the environment (e.g. physical and living environment, health) and ultimately to an

environmentally sustainable development. 8 SEA-related PhD projects have been conducted in SPIA (Gazzola 2002-6, Jha Thakur 2002-6, Posas 2006-11, Hegazy 2007-11, Phylip-Jones 2005-12, Muthoora 2011-, Aderiye 2013-, Jerome 2011-), strengthening the empirical evidence base (Fischer and Gazzola, 2007).

3. References to the research

1. Fischer, T.B. 2004. Transport Policy-SEA in Liverpool, Amsterdam and Berlin - 1997 and 2002. *Environmental Impact Assessment Review,* 24(3): 319-336. **Peer reviewed**
2. Fischer, T.B. 2005 Having an impact? – Context elements for effective SEA application in transport policy, plan and programme making, *Journal of Environmental Assessment Policy and Management* 7(3): 407-432. **Peer reviewed**

These two publications are connected with the initial small project starting SEA research in SPIA in 2002, as described above ('Progress in Environmental Assessment Tiering in transport planning in the UK, the Netherlands and Germany: 1997-2002'; 2002-2003; £3,000)

3. Fischer, T.B. 2006. SEA and transport planning: towards a generic framework for evaluating practice and developing guidance, *Impact Assessment and Project Appraisal*, 24 (3): 183-197. **Peer reviewed**

This publication is the outcome of Fischer's involvement in an EC FP5 project led by Arcadis, called BEACON – Building Environmental Assessment Consensus on the Trans European Networks – Project; in 2005, Fischer was asked to contribute two reports on 'The Impact of assessment on transport decision making' and 'Types of SEA and scope of assessment tasks in Trans-European-Network planning' (value including various travels about £10,000)

4. Fischer, T.B. and Gazzola, P. 2006. SEA good practice elements and performance criteria – equally valid in all countries? – the case of Italy, *Environmental Impact Assessment Review,* 26(4): 396-409. **Peer reviewed**

Based on an ORS funded PhD project at the University of Liverpool by the second author; 2002-2006 (about £45,000)

5. Fischer, T.B. 2007 Theory and Practice of Strategic Environmental Assessment – towards a more systematic approach, Routledge, London (also published in Chinese and Albanian).

Based on the EC Erasmus Mundus project PENTA – Promotion of European Education on Environmental Assessment for Third Country Audience' (European Commission, 2005-2008, Departmental share £80,000)

6. Jha-Thakur, U.; Gazzola, P.; Fischer, T.B.; Peel, D. and Kidd, S. 2009. SEA effectiveness – The Significance of Learning, *Impact Assessment and Project Appraisal*, 27(2): 133-144 (2010 Best Paper Award of IAIA). **Peer reviewed**

This is one of the outputs of the ESRC project 'Developing the learning potential of appraisal in spatial planning' (2007- 2008, £75,247).

4. Details of the impact

The **Environment Agency of England and Wales** (EnAg) has benefited from SPIA's SEA work, in particular with regards to the importance of SEA's institutionalist function, including accreditation and SEA's role in enabling reform and for producing environmental information, thus acting as an effective environmental management instrument. This was confirmed by Dr Ross Marshall, Head of EnAg's National Environmental Assessment Service (NEAS) (reference 1):

'...our relationship with Liverpool helped NEAS achieve a set target to be one of the first UK organisations to be accredited to IEMA's Charter Mark for EA. To date we remain the only public sector team to be awarded this accolade, and in recognition the EA has made the retention of the Charter Mark part of its corporate scorecard in respect of customer service.'

Furthermore, Marshall praised SPIA's impact on the usefulness of SEA in incidence (emergency) environmental management. Referring to an event jointly organised with Tokyo Tech in 2012 he stated that:

'*Liverpool's [...] lead in organising [the] seminar on the role of Impact Assessment in Disaster Management [...] has been the only serious attempt [so far] to critically analyse this field of study and to provide an opportunity to pool and publish practice between practitioners, academics and government staff involved in disaster management. The event provided an opportunity for NEAS to re-analyse its internal services [...] and using knowledge from the seminar to develop a new rapid assessment SEA tool and approach to help [...] senior management identify and filter options for their social and environmental impact, and reputational consequences, during an emergency.*'

SPIA's impact with regards to the evidence produced on what makes SEA effective (again referring to all three functions of SEA) was confirmed by Rob Verheem, Director International of the **Dutch EIA Commission** (reference 2):

'Fischer has greatly impacted SEA development globally. Particularly in questioning whether 'flavours of the day' actually are improvements or not have been crucial'.

With regards to the importance of SEA's information generating function, SPIA's SEA research impact on an international organisation was highlighted by Marco Martuzzi, Programme Manager, Environment and Health Intelligence and Forecasting of the **World Health Organisation (WHO).** Referring to an improved consideration of one specific substantive element considered in SEA, namely health, he stated that (reference 3):

'We have benefited greatly from Fischer's invaluable contribution in the domain of SEA. His findings, i.e. that health is most of the time under-considered [or ignored entirely]*, remain a key issue for us. His work on SEA practice substantiated this state of affairs, and continues to be an essential reference, several years on, to make the vital case for a more meaningful consideration of human health.'*

Further evidence of impact has been provided by policy documents and guidance produced by national and international institutions, referring to SPIA's SEA research outputs:

Scotland declared its ambitions to be a global leader in SEA at the beginning of the new millennium. In a policy review on SEA effectiveness report of the **Scottish Environmental Protection Agency (SEPA)** (2011), recommendations provided by Fischer (*refs. 4, 5 and 6 from section 3 above)* were followed with regards to how SEA should be implemented in specific situations, here with regards to a geographical unit, i.e. Scotland (reference 4).

Further evidence comes from Canada, a country that started applying SEA as one of the first in the 1980s. It has been considered a leader in its development since then. A Regional SEA (RSA) methodological guidance and good practice document was prepared by the **Government of Alberta, Canada** in 2008 (reference 5). This made suggestions for more systematic and effective local SEA processes (i.e. SEA's information generating function), following a commitment made under the Lower Athabasca Regional Plan (covering 30,000 km^2). SPIA research outputs were used (*ref. 3 from section 3 above)* and this document resulted in various subsequent policy documents, including an RSEA guidance document of the **Canadian Council of the Ministers** from 2009 (reference 6). Associated recommendations are currently being implemented in practice, as Dr Dallas Johnson, Section Head, Assessment and Evaluation of **Alberta Environment** explained (reference 6):

'we are looking for real results - our objectives are to better understand and manage cumulative effects in the area (which is expected to see significant in situ oil sands development in future) and if we do it right, improve the effectiveness and efficiency of our regulatory review system, which right now is heavily dependent on project-level EIA for information on cumulative effects'.

5. Sources to corroborate the impact

Reference 1: The Head of the National Environmental Assessment at the Environment Agency of England & Wales can be contacted to corroborate that they have benefited from SPIA's SEA work, in particular with regards to the importance of SEA's institutionalist function, including accreditation and SEA's role in enabling reform and for producing environmental information, thus acting as an effective environmental management instrument.

Reference 2: The Director International of the Dutch Environmental Impact Assessment (EIA) Commission can be contacted to corroborate SPIA's impact with regards to the evidence produced on what makes SEA effective (referring to all three functions of SEA).

Reference 3: The Programme Manager for Environment and Health Intelligence and Forecasting, World Health Organisation (WHO), can be contacted to corroborate corroborate the importance of SEA's information generating function, specically how SPIA's SEA research impacted on an international organisation, referring to an improved consideration of one specific substantive element considered in SEA, namely health.

Reference 4: The Scottish Sea Review corroborates that, in a policy review on SEA effectiveness report of the **Scottish Environmental Protection Agency (SEPA)** (2011), recommendations provided by Fischer (*refs. 4, 5 and 6 from section 3 above)* were followed with regards to how SEA should be implemented in specific situations, here with regards to a geographical unit, i.e. Scotland.

Reference 5: A regional SEA (RSA) methodological guidance and good practice document, prepared by the **Government of Alberta, Canada** in 2008. This made suggestions for more systematic and effective local SEA processes (i.e. SEA's information generating function), following a commitment made under the Lower Athabasca Regional Plan (covering 30,000 km^2). SPIA research outputs were used and this document resulted in various subsequent policy documents.

Reference 6: An RSEA guidance document of the **Canadian Council of the Ministers** from 2009 which outlines recommendations currently being implemented in practice, and can be corroborated by the Section Head, Assessment and Evaluation of **Alberta Environment**.