Strategic Environmental Assessment and Sustainability Appraisal: The Story of the Chicken and the Egg?

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Abbreviations

AA	Appropriate Assessment
DPD	Development Plan Document
EIA	Environmental Impact Assessment
EU	European Union
IAIA	International Association for Impact Assessment
ISO	International Standardisation Organisation
LDD	Local Development Documents
LDF	Local Development Framework
OECD	Organisation for Economic Co-operation and Development
PPP	Plans, Projects, Programmes
PPS	Plans, Projects, Strategies
SA	Sustainability Appraisal
SEA	Strategic Environmental Assessment
SIA	Sustainability Impact Assessment
SPD	Supplementary Planning Documents
TBL	Triple Bottom Line
UNCSD	United Nations Commission for Sustainable Development
UNEP	United Nations Environment Programme

Abstract

The established tool of Strategic Environmental Assessment (SEA) seems to be bitten by the 'sustainability bug', with Sustainability Appraisal (SA) and Assessment gaining popularity in environmental planning. In the UK (England), SA preceded SEA in town and urban planning. The introduction of SEA in the UK, could possibly have led to a conflict between SA and SEA, the former being a tool to advocate sustainable development and the latter of environmental assessment. This paper analyses the co-development of these two instruments in England and Germany followed by a discussion on whether sustainability has usurped the limelight from environmental concerns.

Abstract German:

Das etablierte Umweltprüfungsinstrument Strategische Umweltprüfung (SUP) scheint mit zunehmender Popularität von Nachhaltigkeitsprüfungen (NP) in der Umweltplanung von diesen eingenommen zu werden. In England und Wales ist die Nachhaltigkeitsprüfung (Sustainability Appraisal) in der Stadt- und Regionalplanung der Etablierung der SUP zeitlich vorausgegangen. Die Einführung der SUP in Großbritannien, hätte möglicherweise zu einem Konflikt zwischen NP und SUP führen können, da die erste ein Instrument der nachhaltigen Entwicklung und die zweite der Umweltverträglichkeitsprüfung darstellt. Diese Studie analysiert die gemeinsame Entwicklung der beiden Instrumente in Großbritannien und Deutschland und führt zu einer Diskussion darüber, ob Nachhaltigkeit von der Betrachtung der Umweltbelange wegführt.

Key Words: Sustainability Appraisal, Strategic Environmental Assessment, Co-development, Trade-offs, Regional Development Planning, Integration, Spatial Planning

1. Introduction and Background

Sustainability is in. 'Sustainability', like climate change has become one of the most recognised scientific concepts by the public' (Therivel 2009). At the same time, it is a loosely used term that has flooded not only our literature, but also our day to day lives and contexts such as corporate strategy, production and consumption, development and resources, as well as impact assessment. Our solid, over-a-decade well-regulated, traditional tools of environmental impact assessment (EIA) and strategic environmental assessment (SEA) have seen a deluge of sustainability appraisals, assessments, action plans, included within their scope and claiming to incorporate sustainability principles. This paper has been conceived from the basic thought of whether sustainability in environmental assessment is just 'jargon' taking the focus way from environmental issues or if there is more depth to the hype? Could the tools and methodologies of sustainability appraisal be beneficial to the practice of SEA or are environmental considerations losing out in the wake of sustainability?

Countries that have been reported to apply sustainability assessment in planning are Canada, Hong Kong (evaluation of urban infrastructure options) and Australia; as well as Namibia, South Africa and North America in the context of planning mining operations (Gibson 2006). Seven countries consider sustainability issues within the scope of SEA, namely, the Czech Republic, Denmark, Netherlands E-test, New Zealand, Portugal, South Africa, and the UK (Chaker *et al.* 2006). Regional spatial planning in the UK and Germany has been chosen as a focus for this paper. In the UK, England and Wales have been following the practice of regulated SA in regional development planning since the 1990s. While Germany has no official SA regulation, federal legislation has nevertheless expressed the need for sustainable spatial development since 1998/1999 (Umweltbundesamt 2000). Both countries regulate SEA through the EU SEA Directive.

While Sustainability Appraisals are used to assess the sustainability of development plans in regional development, infrastructure and policy, SEA has been conceived to assess the significant impacts and possible mitigation of environmental concerns on a strategic level. The UK has been applying Sustainability Appraisal to its regional development plans since 1999 (Therivel 2004). The two types of instruments are used in an integrated manner in England and Wales, i.e. an SEA is a sub-part of an overall Sustainability Appraisal, intended to assess the sustainability of development plans. In Germany however, SEA is carried out as a complementary process to spatial development planning, producing a specific environment report along with the spatial or regional development plan. Assessing the sustainability of projects is a rapidly developing field (Therivel 2009). Even for plans, policies and programmes (PPP), methodologies used for impact assessment have broadened and new tools have emerged. The policy background for SEA in Germany and SA/SEA in England is presented in this section followed by a brief insight into the methodologies of SA and SEA. These set the base for the discussions in section 2.

There have been indications that the integration of SEA and EIA with SA will ultimately favour trade-offs toward socio-economic benefits, causing adverse environmental impacts (Morrison-Saunders *et. al* 2006, Pope *et al*. 2004). The following questions are addressed in the light of these observations: Which Laws govern the implementation of SEA and SA in Germany and the UK? Which methodologies are used for analysis of impacts in SA and SEA? And, does integration take the focus away from environmental issues, leading to trade-offs that are more friendly toward socio-economic issues in planning?

The methodology followed for the paper includes: literature review, interviews with 7 SEA/SA experts and analysis of 15 case studies. This input is consolidated to inform the discussions in the paper. A list of the selected case-studies is available in the appendix. The questions posed for this paper limit the analysis to the

application of SA/SEA on spatial and urban development planning in England and Germany. The scope of this paper does not include SEA or SA carried out on governmental legislation and policy, or on international trade agreements or conference proceedings (known as Sustainability Impact Assessment). Additionally, this paper steers away from providing a review of all the possible 'species' of impact and environmental assessment.

1.1 Regulation Governing SEA and SA in England and Germany

The SEA Directive 2001/42/EC[1] is the backbone of SEA regulation in the European Union, while internationally SEA is regulated by the UNECE Protocol of 2003. There are some differences between the two documents (Therivel 2004). Firstly, the UNECE Protocol includes human health under environmental conditions; it promotes public participation more that the SEA Directive, the Protocol also addresses policies and legislation and includes more requirements. Experts have commented that rather than SEA being a tool to influence decision making in planning, the EU SEA Directive has led to SEA becoming an end in itself- more of a tool for compliance and checking the boxes; the bigger picture is being missed (Expert 5, oral interview 2011).

Germany transposed the EU SEA Directive to national law in June 2005 (*Strategische Umweltprüfungs-Gesetz*) while the UK transposed the EU SEA Directive to national law on July 20th, 2004 under the Environmental Assessment of Plans and Programmes Regulations 2004. In Germany, experience with SEA-type assessment practice is extensive and predates formal SEA Directive requirements in various fields including land-use planning where most of the procedural aspects of SEA were reflected in plan making itself (Fischer in Jones 2005). According to Brown and Therivel (2000) SEA in the UK developed out of an understanding of environmental assessment practitioners of the need to upstream EIA concepts and intended SEA to serve as a design tool and less as a document, its real value being a creative tool in the cycle of PPP formulation and reformulation. The concept of assessing the environmental consequences of land use plans was not unfamiliar to UK planners. Previously, through environmental appraisal and the more recent sustainability appraisal, the UK developed considerable experience in assessing the effects of development plans (Jones 2005).

For Sustainability Appraisal there is no binding directive on EU or international level as there is for SEA. Requirements for SA in regional planning in the UK are now governed by the Planning and Compulsory Purchase Act, 2004 which requires a Sustainability Appraisal to be carried out for Regional Spatial Strategies, on Development Plan Documents (DPDs) and on Supplementary Planning Documents (SPDs) (ODPM, 2005). Therivel *et al*. (2009) criticise that the Planning and Compulsory Purchase Act, 2004 is impressively vague on sustainability appraisal requirements as compared to the detailed SEA process proposed in the EU SEA Directive. England and Wales practice SA for spatial planning; however Scotland and Northern Ireland have no requirements for SA. The complexity of SEA/SA implementation in the UK is increased by the political context in the UK, and the planning system cannot be generalised across all the countries in the UK (Expert 4, oral interview 2011). In 2010, the British Parliament expressed its intention to abolish all regional development bodies and the regional planning requirement; this however has not been implemented through regulation and is expected to come into force in 2011 (National Archives UK, 2011 online).

In Germany, there is no exclusive regulation for Sustainability Appraisal. However, federal legislation has expressed the need for sustainable spatial and urban development as a basis for all spatial planning activity since 1998/1999 (Umweltbundesamt 2000) and continues to focus on balanced social, infrastructural,

economic, ecological and cultural conditions (Raumornungsgesetz 2009, Article 2). SEA must be included for regional and spatial urban development planning in all German states according to the Spatial Planning Law of 2009 (*Raumordnungsgesetz*). It is reported that sustainable spatial development is not adequately operationalized and implemented in the field of regional planning in Germany (Umweltbundesamt 2000). It could well be that Germany is carrying out sustainable development measures in spatial planning, but just not formally labelling it so, as done in England and Wales. In addition to urban development planning, SEA in Germany also applies to transport planning.

Based on evidence from SEA/SA practice in England and Wales, both SEA and SA can be carried out in parallel and from a regulatory point of view; the SEA forms a part of the overall SA. From observations of the case studies from England, a SEA framework is often used as a basis to inform a SA. This potentially presents a conflict: Assuming that SEA is integrated into the overarching framework of a SA; which one should be carried out first? Or should they be carried out in parallel? And would integration lead to a depreciated focus on environmental factors? The discussion attempts to answer this. First however, an insight into the methodologies adopted for SA and SEA is presented.

1.2 Methodologies and Tools of SA & SEA

Varied and diverse methodologies deployed in SEA and SA. The focus of the methods varies between those maintaining an environmental perspective and those encompassing the three pillars of sustainable development (Chaker *et al*. 2005). German SEA favours the fact-sheet approach while English SEA/SA most commonly uses matrices. SEA is said to be primarily focused on environmental effects; SA, however, widens the scope of the appraisal to assess the effects of a plan to include social and economic, as well as environmental topics and the methods used are similar to those used in SEA.

From simple check lists to detailed and specialised software, a number of tools can be deployed as aides in a SA or SEA process. According to Eales *et al.* (2005) impact appraisal tools share fundamental aims, but differ in terms of their focus, the rationales adopted for scoring gains and losses, and the degree to which these involve stakeholders.

Checklists provide targets for achievement of certain goals, against which performance indicators can be tested as the project develops. These are however described as un-integrated and unsophisticated, generally advocating a broad brushed approach to appraisal (Morrison-Saunders and Therivel 2006; Therivel *et al.* 2009). Matrices are also a very common tool used in SA, where the policies of a plan are assessed against a set of sustainability objectives. Many of the case studies included extensive tables on matrices (see case studies 1, 2, 3, 6, 7). According to Expert 5 (oral interview 2011) it is possible to reduce bulky matrix studies in smaller scale plans and assess groups of policies as opposed to single policies.

Indicators and targets are other tools deployed by SA and SEA (Ness *et al.* 2006; Therivel *et al.* 2009). Sustainability databases are often linked to a number of indicators on a spread sheet, examples are worksheets provided by the UNEP (UN 2001), OECD, UNCSD and Eurostat. Indicators generally cover all components of traditional development goals and conventional political debate (George 1999) such as pollution control, waste management, biodiversity conservation, resource scarcity, health, education, social welfare, employment, standard of living and more recently climate change and energy security. The use of sustainable development indicators has even been reported in SEA of plans and policies to test whether these have led or are likely to lead to sustainable development (George 1999; Ness *et al*. 2006). However, indicators and targets alone are not enough to inform decision-makers unless they are compared with environmental standards, compared with other options or suggest off-sets to neutralise negative effects. In

order to be effective, indicators need to be supplemented by testing against environmental standards, quantification and modelling and need to distinguish between 'less-bad' and 'good' impacts (Therivel *et al.* 2009). Among the weaknesses in the SEA/SA process is a lack of quantitative targets and truly critical assessments. For example, SEA/SA rarely blames the governments' regional and national planning policy for negative impacts (Therivel *et al*. 2009).

Sustainability rating methods in planning include the World Wide Funds' One Planet Living Index and the Dow Jones Sustainability Index (rating for companies). Sustainability reporting guidelines are provided by the Global Reporting Initiatives' Sustainability Reporting Guidelines' G3 and the Natural Step. Carbon and Ecological Footprinting, also highly promoted by Expert 5 as a tool for SEA/SA (oral interview, 2011) could be included in SA. Other SA methods include life-cycle or cradle to cradle assessments. These techniques have traditionally focussed on environmental issues but now also consider the 3 dimensions of sustainability and include cost -benefit analysis, cost-effectiveness analysis, multi-criteria analysis and risk analysis (Eales *et al.* 2005). Green Building assessments (such as LEED/ BREEAM) have also become part of the EIA/SEA reporting in some countries. Environment Assessment might employ computer modelling techniques, geographic information systems (GIS), field survey or expert testimony to evaluate impacts (*Eales et al.* 2005). Proponent activities related to internal operating policies and procedures include sustainable procurement, certification with International Standard Organisation (ISO) standards and equity in employment (Morrison- Saunders and Therivel, 2006).

Sustainability assessment efforts are accompanied by a host of methods such as scenario building, systems analysis, community mapping, multi-criteria evaluations, risk-assessment, multi-stakeholder negotiation, and flow analyses. Gibson (2006) proposes a set of core generic criteria for sustainability assessments that should not be compromised in spite of the variety of tools that are available. Some of these tools have been developed to make formal decisions on trade-offs. However, Pope *et al.* (2004) suggest that sustainability criteria alone are not enough to form the basis of an assessment for sustainability and these criteria ought to be operationalized for them to have meaning. Sustainability oriented deliberations include efforts such as urban planning, collaborative resource management, corporate greening, alternative national accounts, industrial ecology and growth management. SAs also go beyond conventional law and policy tools, using mechanisms such as certification schemes, corporate behaviour codes, ethical investment criteria, sustainable livelihood analyses and multi-stakeholder collaborations (Gibson, 2006).

The case studies analysed for this paper, mostly follow the requirements of the SEA Directive in terms of approach and methodology but the weight given to certain factors varies. In some reports, public consultation is highlighted, in others it is only mentioned briefly; cumulative and interrelated effects are also dealt with to varying degrees, so is the consideration of alternatives. The SEA/SA format from England is more comprehensive on a strategic level, as it covers socio -economic impacts in addition to environmental ones and seems to follow an objectives-led approach. Yet SA is broad as compared to the in-depth, thorough SEA format of the German case studies. The German SEA case studies seem to follow more of a baseline-led approach. This is also a point of differentiation of SA and SEA; SA is often perceived as using more of an objectives-led approach while SEA is perceived as using more of a baseline-led approach (Expert 5, oral interview 2011). Germany however has a totally different approach to land-use planning than the UK (Expert 7 and Expert 3, oral interview 2011). Therefore a further comparison of SEA of English and German regional spatial development plans is not made at this stage because the planning systems are considerably different and a closer look at the planning set-up would be required to further compare the SEA and/or SAs.

2. Discussion

In general, the view is that SEA promotes environmental concerns in decision-making while SA attempts to holistically represent all aspects of sustainable development (Smith and Sheate, 2001). However is there a conflict among sustainability and environmental goals when SEA is integrated into SA? Does integrated SA/SEA adequately take into account environmental factors or are there trade-offs toward socio-economic issues? These two questions are addressed in the following sections.

2.1 Is there a conflict in SEA/SA integration?

According to Smith and Sheate (2001) the sustainability appraisal process outlined in the UK's DETR Guide and the requirements of the SEA Directive arguably differ in terms of their overall aims and certainly in terms of their procedural and methodological requirements. Therivel (2004) points out that the requirements of the EU SEA Directive make the difference of SEA to SA clear. SEA requires greater rigour, more quantitative analysis and more collection of baseline data, it has exclusions in terms of the plans and programmes it applies to and it does not apply to policies. Also, most importantly, SEA considers effects on the 'environment' not sustainability (although it refers to sustainable development). It could also be observed from the case studies that in general, environmental issues are considered in the final SA report, however not as thoroughly dealt with as in environmental issues in an SEA. SEA outdoes SA in that it requires; firstly, the designation of environmental authorities to be consulted on the scope of the assessment and final report; secondly, public consultation is to be built into the report; thirdly, information must be provided on integration of environmental considerations into the final plan or programme; and finally, SEA requires consultation responses of other Member States where appropriate (Smith and Sheate 2001).

In the UK, SA preceded SEA in urban and spatial planning. Planners were familiar with the requirements of an SA since the late 1990s. The ODPM Guide integrates the requirement of SEA into SA, making SEA a core part of the SA process. When the SEA Directive was introduced in 2001 in the EU, there was concern in the UK that the prescriptive requirements might stifle the sustainability appraisal process (Smith and Sheate, 2001). Some experts interviewed for this study agreed that the prescriptive nature of the SEA Directive has focussed the attention on compliance with the Directive rather than improving the actual plan, and that the administrative hurdles associated with SEA compliance are seen as a burden (Expert 1, Expert 3, Expert 5, oral interviews 2011).

Trends toward integration (of SEA into SA) were not favoured by all proponents of environmental impact assessment and are criticized in literature (Therivel *et al*. 2009; Sheate *et al.* 2003). Morrison-Saunders and Fischer (2006) mention trade-offs in favour of social and economic concerns. The so called 'smoothie' model which blends all the ingredients of environment, economic and social aspects of decision-making into an SEA and SA, is not in the best interests of the environment as the 'flavour' of the economy dominates. Morrison-Saunders and Fischer (2006) contend that integration in impact assessment runs the risk that certain elements will be downplayed, and remind that SEA and SA have different objectives and should be kept separate. They reach the conclusion that SA is not an effective tool for supporting environmentally sustainable decisions and should not be integrated into the practice of EIA and SEA. Therivel *et al*. (2009) also identify that SA/SEA only partly contribute to integration of environmental considerations into the preparation and adoption of plans, making the [core] strategies only less environmentally damaging or less-bad.

However, not all was amiss with the SEA Directive when it was introduced in 2001 though. In interviews conducted by Smith and Sheate (2001) when the SEA Directive was adopted into national law in the UK, the majority of their interviewees favoured a modification of existing SA processes, to incorporate the specific requirements of the SEA Directive. This was because SA provided a means to *"simultaneously examine economic, social and environmental implications of regional development, and therefore contribute to more sustainable decision-making*". Some interviewees in the Smith and Sheate study suggested that incorporating the requirements of the SEA Directive (into SA) could even serve to strengthen the existing sustainability appraisal process and enhance its legitimacy.

The fact that SEA deals with a broader scope of topics (for example transport, agriculture, land-use, energy) than SA might lead to the assumption that SEA is applicable to a wider variety of fields than SA. Therivel (2004, page. 9) points out that SEA applies to strategic actions, covering a huge range of activities from legislation, treaties, to plans for coastal management, agriculture, transport or waste. On the other hand, SA being mainly associated with regional development strategies and especially only for England and Wales (and to the mining sector in some countries outside the EU) one could reach the conclusion that SEA has more international outreach to a wider variety of sectors than SA. Gibson (2006) however reports that sustainability assessment is additionally used in land-use planning, site restoration, corporate greening, community-level development assistance and trade-option evaluation. However, whether this sustainability assessment is regulated and carried out formally in these sectors still remains unknown. Therefore, more clarification on the scope of SA should be sought. It might be that countries are carrying out some form of sustainability appraisal, however not calling it so under regulated conditions. Chaker *et al.* (2005) report that seven countries (Czech Republic, Denmark, Netherlands E-test, New Zealand, Portugal, South Africa, and the UK) consider sustainability issues within the scope of SEA. It has taken a long time to firmly engrain SEA for plans and programmes in the EU. Introducing formally, sustainability appraisal as an overarching system to SEA in the EU (as practiced in the UK) might prove be a difficult task. Further research on the acceptance of such a system would have to be undertaken before a decision to change the SEA system is taken.

Furthermore, there is little clarity and consensus on the use of the term '*integration*'. In some cases, a joint effort of combining SA and SEA is referred to as 'Integrated' appraisal which considers economic, social and environmental impacts of plans. The result of such integrated appraisal is however different from SA and SEA. Morrison-Saunders and Therivel (2006) discuss the term 'integration' more closely and discuss what integration in EIA/SEA could mean and comment that there is no single definition of "integrated" assessment. Integrated appraisal and sustainability appraisal should not be viewed as synonymous according to Eales *et al*. (2005) as integrated appraisal forms an overarching approach to appraisal; sustainability appraisal is seen as a specific tool for undertaking detailed appraisal of economic, social and environmental impacts resting on sustainable development. Therefore there ought to be no confusion regarding the goals of these tools. The UK's procedure of subsuming the SEA within the system of sustainability appraisal is also an example of integrated assessment (Morrison-Saunders and Therivel 2006; Eales *et al*. 2005). Eales *et al.* (2005) report that even catchment abstraction management strategies and river basin management plans prepared by the Environment Agency in the UK have been subject to integrated assessment. The move from SEA to SA/SEA is seen by Therivel *et al.* (2009) as moving the focus from the current problems to future ambitions and from environmental considerations toward an approach that considers all aspects of sustainable development in decision-making.

In light of this critique of '*integration*', certain facts must be clarified early in the planning process. Firstly, definitions and terminology within the SA/SEA context should be specified. Secondly, the scope of application of SA /SEA should be very clear. Thirdly, to avoid trade-offs that harm environmental conditions,

due attention should be given to fix ecosystem and community considerations deeply into the core of decision-making. Fourthly, decision-rules must be transparently available to the decision maker and the assessor in order to avoid serious environmental damage. Finally, a system of third-party verification must be carried out to check whether the implementation of measures to avoid or minimise impacts has truly been transferred on the ground. Badly designed SA could resurrect the old dominance of narrow economic and technical considerations thus erasing some of the hard-won gains for environmental concerns of the past three decades (Gibson 2006).

Morrison-Saunders and Therivel (2006) propose a concept that could resolve the incompatibility between SA and SEA. They discuss that social issues are more likely to go hand in hand with environmental issues than with economic ones and that the social 'leg' is typically more supported by promoting an environmental rather than an economic agenda. They surmise that SEA does not conflict with SA, since they both aim to provide the best quality of life for people; the role of the economic system being to support the socio-economic objectives.

In the UK, SEA has successfully been integrated into SA and the transition from a SA to a SA/SEA format, in spite of being criticised heavily, has been accepted in regional development planning in the UK. An example of SA in infrastructure planning has been presented in the case studies (see case 15) and it has been established that sustainability appraisal is being carried out in an informal setting, without being labelled as 'sustainability appraisal' (Umweltbundesamt 2000; Pope *et al.* 2004; Expert interviews 2011). How successful the SA/SEA format is and would be in its application to other fields such as transport planning or energy planning, still remains an open question.

2.2 The trade-off dilemma

The issue of trade-offs among the three pillars of sustainability i.e., environment, economy and social has often been discussed in literature (in Therivel *et al.* 2009; Morrison-Saunders and Fischer 2006; Fischer 2004; Pope *et al.* 2004; Therivel 2004). Sustainability assessments could be regarded as a means for economic requirements to override environmental or social ones. In this context, an unnecessary elevation of economic matters at the cost of diminished considerations of environmental matters (Morrison-Saunders and Fischer 2006), '*discretionary'* environmental considerations compared to '*mandatory'* economic and social considerations (Dovers 2002), and marginalised environmental concerns owing to institutional powers vested in economic interests, have been referred to (Therivel 2004). In a study of SEA/SA of 45 core development strategies in the UK, Therivel *et al*. (2009) report that even where a positive appraisal on sustainability is presented; the total outcome on the environment is negative when a [core] strategy is tested on its own impacts, rather than the reduction of total environmental impacts. Interviews with planners also confirm that the planning process (at least in the UK) is biased towards social and economic factors and that staff at development authorities are better trained in assessing socio-economic issues than environmental ones (Therivel *et al*. 2009; Expert 1, oral interview, 2011). Case study 4 reports that "*the economic or social advantages of a proposal, for example, might be judged to be more important than negative impacts on the local environment, so the development may be supported*" (Greater London Authority 2002, p. 11).

A '*double trading-off*' (Dovers 2002) or '*double-dipping'* (Morrison-Saunders and Fischer 2006) is referred to in terms of integration of the 3 pillars into SEA where environmental concerns, already disadvantaged, would lose out doubly if social and economic aspects were integrated into a traditionally biophysical environmental focus. The integration concept, say Pope *et al*. (2004), can be seen as overly promoting the prevailing

economic agenda and could thereby undermine 30 years worth of hard-won environmental policy gains. SEA, just as EIA was initially introduced because environmental aspects ought to have an equal treatment in plans and programmes as social and economic issues, but in reality this was far from the truth (Kirkpatrick *et al*. 2001). Environmental issues were often subordinate to economic issues in local planning in the UK. Many supporters of integration of sustainability aspects into SEA expected a 'mainstreaming' of environmental aspects into planning, whereas critics predicted an 'erosion' of environmental aspects (Fischer 2004).

The issue of power games, played by the proponents of economic issues in the context of local development planning has also been reported (Morrison-Saunders and Fischer 2006; Fischer 2004). Local authorities in the UK, competing for funding would probably not propose unfavourable recommendations for investment, even if this was environmentally beneficial. Fischer (2004) has reported that local sustainable development strategies in the UK have included more and more economic and social aspects at the expense of environmental ones. Both SEA and SA (in the context of UK spatial planning) have been criticised as significantly underestimating negative environmental impacts by Therivel *et al*. (2009) too. Furthermore, both SEA and SA do not explain how or why trade-offs are made (Therivel *et. al*. 2009).

Critics of the 3 pillar approach (such as Gibson 2000) state that the pillars could never be balanced, as one pillar will always be pitched against the other. Fischer (2004) indicates that there are methodological problems in the integration of the 3 aspects of sustainability. He argues that the 3 aspects can only be approximated qualitatively, and existing quantitative methodologies such as the economically weighted cost-benefit analysis, which is rejected by ecologists, remain controversial.

While socio-economic aspects such as poverty reduction or raising the GDP of a district might justifiably be more important than the protection of certain species, the interrelationships between the 3 could be sought in order to mitigate the effect of trade-offs. For example, the reduction of poverty could be achieved at the same time as a programme for protection of species, or implementation of a biodiversity strategy could have indirect or direct social benefits; the goals could be intertwined. After all, sustainability is not about balancing, which implies compromise; instead the aim should be multiple reinforcing gains (Gibson 2006). Even SA could strongly support environmental goals by identifying synergies among the three pillars of sustainability. An SA approach could be so formulated as to firmly anchor biodiversity and environmental protection from the beginning of the planning process. The sustainability appraisal of the London Draft Plan takes the concept of sustainable development to imply the creation of “win, win, win” solutions, where there is a net gain (or at least neutral effect) for the social, environmental and economic interests, stating that integrated policies could help to achieve this goal (Greater London Authority, 2002 page 11). However, this might not always be practically feasible for spatial and land-use planning.

An additional factor to be considered in trade-offs is timing. According to Morrison-Saunders and Therivel (2006), early decisions, mostly made by the developer, are almost certain to involve trade-offs of environmental and social factors against economic ones. Morrison-Saunders and Therivel (2006), opine that trade-offs should occur late in the decision-making process; and social, environmental and economic assessments should be carried out separately and integrated at the end. When assessments are carried out in aggregate, trade-offs between the separate aspects remain hidden according to George (1999). A worsening of one case might not reveal the worsening of another aspect as the cumulative effects are hidden in the aggregated trade-off.

Solutions to overcome trade-offs have been provided by Sadler (1999) who identifies minimum thresholds for economic, social and environmental criteria, and by Gibson (2000, 2006) in the form of trade-off decision

rules, core decision criteria and process requirements that successfully include these rules into SA. However, Gibson (2006) also states that trade-offs are acceptable only as a last resort when all other options have been found to be worse. Nevertheless, it must be borne in mind that, in a practical sense, some form of trade-off is unavoidable (Morrison-Saunders and Therivel 2006; Morrison-Saunders and Fischer 2006; Gibson 2006) and that sustainability is after-all a compromise (Expert 3, oral interview 2011).

Therefore, it is essential that trade-offs are transparent[2] and be governed by rules or guidelines[3] that do not compromise the fundamental objective of net sustainability gain. Trade-offs must also be iterative making them revisable throughout the planning and implementation process, and a set of rules for sustainability assessment trade-offs should be set in place (Gibson 2006). The right policy setting is as important as the formulation of sustainability or environmental goals. Trade-offs could be minimised and made transparent, provided the regulatory and policy framework requires this. Planning priorities and objectives must be set-out early in the process.

Finally, the question still remains, is SEA a tool to highlight environmental factors or one to balance out the 3 pillars of sustainability? SEA is not expected to balance the 3 pillars of sustainability; it was conceived as a tool to raise the profile of environmental considerations in planning. SEA and SA are tools to inform decision-making, they are expected to balance out environmental and/or sustainability impacts, through recommendations for avoiding or minimising negative impacts. What is not expected from SEA/SA is that they propose measures that compensate for negative impacts (Expert 3, oral interview 2011). SEA, and to some extent SA, insure that environmental considerations have been taken into account in planning and have not been left disregarded. The true practical value of SA/SEA can only be measured through its influence in decision-making and finally on the outcomes of development planning itself. The path of development chosen - environmental or sustainable – lies then, in the hands of the decision-makers.

3. Conclusion

An evolving paradigm might imply a move from EIA to SEA and toward SA and environmental sustainability assurance (Chaker *et al*. 2005, Dalal-Clayton and Sadler 2003) and thus a more integrated form of assessment which takes into account the full economic, environmental and social impacts of plans. England and Wales have integrated the requirements of SEA fully into SA in regional planning. However whether this will represent the trend for SEA in other sectors such as energy, transport, waste and water management is yet to be seen. In light of the fact that the UK Parliament has abolished regional planning bodies and thereby the regional spatial planning strategies, it remains to be seen if SA will continue to be practiced in urban spatial development planning and if the requirements of the SEA Directive will continue to be fulfilled under the umbrella of the SA in England and Wales.

The wide berth of methodologies adopted for SEA and SA are similar, however the focus of the methods should be the purpose that they serve within the impact assessment tool (Expert 7, oral interview 2011). One could use the same methods to reach various concluding statements. Another important factor is the administrative practice in a country. In Germany, some bureaucrats would consider integration of sustainability into SEA as a great hurdle, as this could pose an additional burden to the already overladen administration, viewing SEA as a setback to planning, costing more time and financial investment (Expert 3, oral interview 2011).

SEA in the EU was birthed from the need to apply environmental assessment to plans and policies, while SA was introduced in the UK to highlight the environmental priorities of local development planning. The UK managed to integrate SEA into SA requirements, however critique shows that the integration was not so smooth. It is difficult to say whether SEA in other EU countries will be 'dusted out' of the cupboards to make way for a more integrated sustainable development approach, however it can be said that the practice of carrying out SEA within an overarching SA, will not be implemented in a regulated form in the EU or internationally very rapidly.

Integration of SEA into SA in the UK was relatively smooth owing to the SA requirements in place before the SEA Directive applied. A similar set-up is not available across the EU. Smith and Sheate (2001) see integration as being straightforward in the UK, with the SEA Directive providing the framework for the appraisal procedure while the DETR Guide supplying appraisal methodologies appropriate to the regional level. At the same time, the authors see problems with issues such as designation of consulted experts, application of baseline information and transparency. According to them, specific changes such as public consultation or monitoring of appraisal findings would be needed to facilitate such an integration of SA and SEA.

SA proponents consider a return to a purely environmental assessment approach as a retrograde step (Smith and Sheate, 2001). Environmental proponents claim that a move toward traditional planning (without SEA) will place the highlight back on economic issues in planning. However the future of SEA and SA is not dependent on the questions of conflict and trade-offs alone. As the results from the analysis of SEA/SA practice in Germany and England show, and as confirmed by Chaker *et al.* (2005); the legal and regulatory framework of a nation, the history and means of legal enforcement and the approach to governance are all factors that affect SEA implementation and there is no optimal way to implement SEA. This is true for SA as well. Transparency, competency of the administration and acceptance of the public are other factors that play a role in SEA/SA implementation (Expert 3, oral interview 2011).

Decision-making is a complex process and could be unfavourable toward environment/sustainability principles. Finally, after all the hard work and agony put into SEAs, they still end up being only one input into the decision (Therivel 2004, Chaker *et al*. 2005). SEA in Germany has the status of an obligatory expert advisory and consultative tool. SEA obliges the planning authority to identify and mitigate environmental conflicts that arise from plan-making. Even if the environmental conflicts remain unresolved, an SEA alone would not have the power to stop a certain planning decision. Also, the final decision on whether and how to reveal the contents of the SEA to the public, remains in the hands of the authorising body (Expert 3, oral interview 2011). Political motivations and agenda, institutional frameworks, financial constraints, regulatory deadlines and a host of other factors affect decision making where the final SEA report plays only a small role in planning. This is true for all forms of environmental planning tools, whether SEA, SA or EIA. This is also where the limitations of this study become clear. This study also does not evaluate in-depth the effectiveness of SA and SEA. Nor does it analyse the role of SEA/SA in the various steps of decision-making. Additional limitations lie in the choice of case studies and are this could be seen as areas for further research.

A review of the case studies establishes that reporting on SA and SEA is standardised only up to a certain degree and there are differences in terms of mitigation, consideration of alternatives, monitoring and assessing interrelationships among impacts. Most of the experts interviewed for this paper agreed that there is an abundance of impact assessment tools and methodologies, which could be confusing. However, this abundance is necessary for all aspects of planning to be taken into consideration, according to some.

Finally, whether the story of the chicken and the egg is a parody for SEA/SA still remains an unanswered question. The important question is not whether one tool can ‘survive’ without the other, but what roles SA

and SEA play in decision-making and how they influence planning. It is in the nature of spatial and urban planning that all aspects of sustainability would not be treated with equal measure. Environmental issues might bear the brunt of the tendency to skew planning around a socio -economic agenda; however, is this necessarily a negative sign? To enhance the conclusions of this study, the actual effectiveness of SEA and SA (and other impact assessment tools) in the practice of planning on a wider scale than the EU could be researched. After all, both SEA and SA have advantages in their respective fields of application, qualifying both the chicken and the egg as vital ingredients in the 'buffet' of impact assessment tools.

Notes

1. The EU Directive 2001/42/EC on the assessment of effects of certain plans and programmes on the environment (the 'SEA Directive').
2. Morrison-Saunders and Therivel (2006) provide a concrete example where a sustainability assessment failed owing to an intransparent decision process, in the case of a gas field proposed to be located on a nature reserve in Western Australia.
3. Trade-off rules are provided in papers by Gibson (2006) and Morrison-Saunders and Therivel (2006).

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Expert 1- Carys Jones (University professor, UK) oral interview, 21.06.2011

Expert 2- Cristina West (SEA/SA consultant, UK) written response to interview questions, sent on 16.06.2011

Expert 3- Marie Hanusch (SEA/SA consultant Germany) oral interview, 28.07.2011

Expert 4- Samuel Hayes (PhD candidate, UK) oral interview, 29.06.2011

Expert 5- Sean Nicholson (SEA/SA consultant, UK) oral interview, 13.07.2011

Expert 6- Thomas Bunge (Impact assessment expert, Germany) oral interview, 12.07.2011

Expert 7- Thomas Fischer (University professor, UK) oral interview, 13.07.2011

Appendix

Selected Case-studies (authors compilation, 2011)

England SA/SEA	1. St Edmundsbury Borough Council Local Development Framework: Core Strategy Document Sustainability Appraisal Report (2010)
	2. East Midlands Regional Plan Consolidated Sustainability Appraisal Report (2009)
	3. Walker Riverside Area Action Plan Final Sustainability Appraisal Report (2006)
	4. Greater London Authority Sustainability Appraisal of the Draft London Plan (2002)
	5. Northampton Borough Council Central Area Action Plan Sustainability Appraisal Report (2010)
	6. Peterborough Core Strategy Development Plan Document Draft Submission: Sustainability Appraisal Report (2009)
Germany SEA	7. Umweltbericht zum Regionalen Entwicklungsplan der Planungsregion Halle (2007)
	8. Umweltbericht zum Landesentwicklungsplan des Landes Sachsen-Anhalt (2010)
	9. Regionalplan Umweltbericht Region Stuttgart (2008)
	10. Umweltbereicht zum Vorentwurf des Regionalen Flächennutzungsplans der Planungsgemeinschaft Städteregion Ruhr (2007)
England, Ireland, Scotland SEA	11. Draft Cork County Development Plan Strategic Environmental Assessment Environmental Report (2007)
	12. Environmental Report relating to the Strategic Environmental Assessment of the Proposed Irish National Hazardous Waste Management Plan 2008-2012 (2007)
	13. Environmental Report for the Aberdeen Local Housing Strategy 2006-2011, Aberdeen City Council, Scotland (2005)
	14. Final Environmental Report Cambridgeshire County Council: Local Transport Plan and Long Term Transport Strategy Strategic Environmental Assessment Cambridgeshire County Council, UK, (2006)
Project SA	15. HS2 London to the West Midlands Appraisal for Sustainability (2011)