

Environmental Impact Assessment in Green Procurement and Partnering Contracts

Looking for environmental performance beyond EIA

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Introduction

There are several ongoing trends, which will influence the future practice of Environmental Impact Assessment (EIA) in infrastructure development projects:

- i) Many decisions that influence the design and environmental performance of the project are made after the EIA process has been completed;
- ii) There is a lack of transfer of information (follow-up) from the planning stage to the construction and implementation;
- iii) The issue of the effectiveness of EIA – is EIA delivering the outcomes expected and needed?;
- iv) A trend towards more collaborative relationships between various parties (governmental, private, public);
- v) Authorities and companies increasingly use procurement and contracting as an environmental policy instrument to further the environmental performance of products and services.

However, there has been limited research on the role of how these different trends are influencing practice of EIA and how they can interact with each other in order to achieve more effective EIA. The next three sections will address the five issues mentioned above. Subsequently, the paper discusses how these trends might be combined in order to enhance environmental performance throughout the project life cycle. Finally some conclusions are drawn. This paper aims at exploring how green procurement in relation to public private partnerships could be used in order to deal with some of the problems that previously have been identified in relation to safeguarding an effective EIA that contributes to environmental sustainable development. The paper provides an introduction to the session devoted to Partnerships and Impact Assessment, and sets the context for further discussion.

Effectiveness of EIA

EIA is a key element in decision-making, providing information to the decision-maker (i.e. the competent authority) about the environmental implications of a proposed project (Sadler, 2004). In most countries, EIA is a tool for decision-making about project approval, permitting. In essence the question is whether a project is acceptable, in which formal (environmental) standards play usually a central role. To this end information is required about the project being taken forward, in addition to data on the receiving environment and measures that can be taken to mitigate negative impacts. Accordingly, the EIA tends to be based on the project design available at the consent stage. In traditional approaches design information should be relatively concrete to allow for a certain level of confidence in the prediction of impacts and identification of mitigation measures (Arts et al., 2007).

However, a number of implementation and effectiveness challenges have been identified by different researchers:

- The linkage between the assessment of environmental impact (predicting effects and appraise whether these are acceptable) and project development (optimisation of design and implementation);
- Linkage between the various stages of the EIA process (and also the stages of decision-making). There seems to be 'different worlds' relating to different parties, procedures, tools and activities. Traditionally the planning stage and the construction and operation stages are undertaken as separate activities (EIA and planning/environmental procedures vs. contracting and procurement procedures), by separate organisations from both market and government (Faith-Ell and Arts, 2009, Arts et al., 2007);
- Transfer of environmental information and requirements from impact assessment to construction and operation from EIA to contractors (Faith-Ell, 2007); and
- More in general, follow-up of EIA in order to safeguard outcomes (Arts et al., 2008, Faith-Ell, 2005, Morrison-Saunders and Arts, 2004, Wood, 2003).

A central issue in the EIA effectiveness studies is that it does not only relate to process and procedural criteria and outcomes (that is, does the EIA process conform to established provisions and principles) but also substantive outcomes

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(that is, whether the EIA process achieves the (environmental) objectives set). Until now, however, much of the research effort concerning EIA effectiveness has been focusing on the procedural criteria (Sadler, 1996; Cashmore et al., 2004).

Collaborative relationships in contracting

Traditional contracting methods for infrastructure projects have often resulted in problems of cost overruns, project delay and quality issues. As a result, approaches have changed in recent years, moving towards the integration of project design and assessment, construction, operation and maintenance (Lenferink and Arts, 2009, Arts et al., 2007). Therefore government has sought for ways to improve management of risks. Apart from project control, there is also need for more innovation in infrastructure projects in order to deal with growing complexity of infrastructure and environmental planning – this is especially true for urbanised areas with little open space, many environmental pressures and conflicting interests between stakeholders. Traditional approaches to planning and contracting procedures leave little room for innovation and adaptation by market parties, which is needed to deal adequately with complexity (Nijsten et al., 2008, Van Valkenburg et al., 2008).

As a consequence, there has been a growing interest in the infrastructure and construction sectors considering alternative forms of contracting such as different forms of partnering e.g. Early Contractor Involvement, Design & Build (D&B), Design, Build (Finance) & Maintenance (DB(F)M), Build, Operate & Transfer (BOT) and performance contracts. Traditional contractual arrangements, where the clients specifies the design in detail and the contractor is only responsible for construction, might still be used for simple projects but for more complex projects these are becoming less common and are often replaced by a form of design-build arrangement with functional specifications (Arnek et al., 2007, Nilsson and Pyddoke, 2007, Kadefors, 2004). This trend is matched by a transition from traditional ‘arms-length’ contracting towards an approach of more open cooperation and trust, which proves to be important in order to deal in the long-term adequately with the dynamic and complex context of projects (Bresnen and Marshall, 2000). Collaborative relationships between client and contractors within the infrastructure sector are commonly referred to as *partnering* (Ngowi, 2007) or *Public Private Partnerships (PPP)* (Bennet and Jayes, 1995).

Green procurement

In accordance to the extended scope of contracts and the complexity of projects, also, innovations can be seen in many procurement regulations. First, a more stepwise interactive approach to the process of tendering and awarding contracts such as the so-called ‘competitive dialogue’ has been introduced specifically for complex situations/projects (European Union, 2004). This allows for more close interaction between government (client) and market parties (contractor) in a stepwise process and links up with contract forms oriented to partnering. Secondly, more and more, contracts are not granted on basis of lowest price but on the criterion of the “economically most favourable bid” (which is *not* per se the lowest price!). This means that, apart from price, quality issues can be taken into account (e.g. time, risks as well as environmental performance, landscaping) but also life cycle costs (costs of construction as well as operation and maintenance). This is essential in order to reconcile environmental requirements with the contract award criteria in procurement procedures (Van Valkenburg et al., 2008, Arts et al., 2006, Lenferink et al., 2008).

Thirdly, and related to previous, is the broader development of ‘green procurement’. As mentioned before, authorities and companies are increasingly using procurement as an environmental policy instrument to further the environmental performance of products and services (Marron, 2003, Carter and Carter, 1998, Commission of the European Communities, 2004). By expressing environmental preferences, purchasers can improve the environmental performance of products and services and thus reduce the adverse impacts of their activities (Verschoor and Reijnders, 1997, Carter and Carter, 1998, Carter et al., 1998, Walton et al., 1998, Zsidisin and Hendrick, 1998, Preuss, 2001, Zsidisin and Siferd, 2001). This is often called green purchasing or green procurement and is often described as: “the integration of environmental considerations into purchasing policies, programmes and actions” (Russel, 1998). Environmental procurement is justified as a way to internalise the external costs (or benefits) of goods purchased by governments (Marron, 1997). Green procurement is also justified as for promoting the development of green innovation (Commission of the European Communities, 2004).

Follow-up of the environmental performance of contracts can be directed either towards requirement fulfilment or toward the environmental outcomes (Faith-Ell, 2005). Likewise assessment of the environmental effectiveness in green public purchasing can be focused on meeting environmental criteria (‘acceptable’ project) or on achievement of pre-defined environmental objectives (objective-led ‘optimisation’) (Siemens, 2003). Performance measures need to be specified in order to assess the effectiveness of procedures for environmental purchasing (Green et al., 1998). In green procurement both elements seem to be usually relevant (Varnäs et al., 2009a):

- i) Basic environmental requirements which at least have to be met and that are already laid down in the draft contract (often based on standard contract requirements, environmental regulations); and

- ii) Extra criteria / ambitions related to environmental objectives, which might relate to context-specific issues and for which the bidding market parties can gain ‘extra points’ (sometimes these are called critical success factors) – Figure 1.

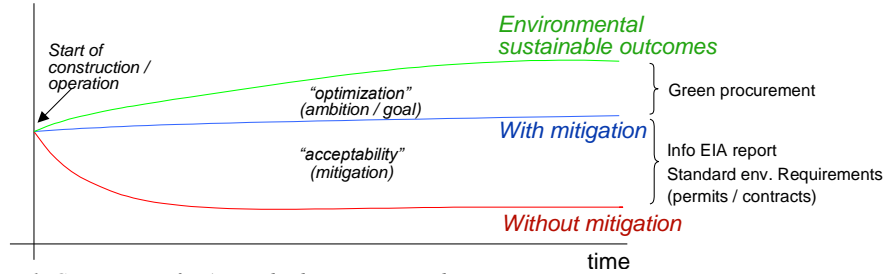


Figure 1: Comparison of EIA, standard contracting and green procurement

Towards new approaches integrating EIA, green procurement and partnering?

The various trends discussed in the previous sections have developed rather separately but nevertheless seem to head in the same direction – i.e. achieving more environmental sustainable outcomes of (infrastructure) projects. Various relationships can be developed between the different ‘tracks’ of impact assessment, green procurement and partnering contracts. The expected result is a more integrated approach, which relates to the following elements (see also Figure 2):

- i) First of all, *linking explicitly the information of EIA and the requirements of contracts*. All too often contract requirements are not related to EIA, although it has formed the basis of the consent decision. Environmental requirements in contract are usually primarily based on standard set of requirements for the type sector / project and in addition to requirements that result from formal environmental regulations (Varnäs et al., 2009a, Faith-Ell, 2005). There is still ‘room for improvement’ to enhance the context-specificity of requirements in contracts by including issues brought forward in the EIA report and process. Vice versa, in EIA studies little attention is given to the standard set of environmental requirements used in contracting;
- ii) *More integrated contracts* that include the stages of planning as well as (final) designing, construction, maintenance and/or operation. This trend can be seen in practice with the emergence of e.g. DC, DB(O)(F)M, BOT contracts. However, the relationship of these contracts with concepts as EIA follow-up and Environmental Management Systems (EMS) is usually not yet made. During the last decade, such innovative contracts have become common practice in infrastructure development in several countries – USA, UK, The Netherlands etc. (Pakkala et al., 2007; Lenferink, 2009; OECD, 2008);
- iii) *Green procurement* could provide for a mechanism to overcome some weaknesses of EIA. This relates to go beyond the assessment of acceptable impact and make the transition towards optimising design, construction and operation as well as addressing issues raised in the EIA process that are not addressed in the consent decision. These could relate to quality ambitions that above formal environmental standards, to gaps in knowledge or uncertainties left. The EIA (scoping) could provide for the issues to be addressed in the green procurement process (e.g. award criteria). Examples of green procurement in the infrastructure sector can be seen in various countries such as Sweden and The Netherlands (Nijsten et al., 2010; Varnäs et al., 2009a). Moreover, there seem to be a potential to coordinate EIA follow-up and green procurement issues – green procurement might be a route to address further follow-up issues (Morrison-Saunders and Arts, 2004). Green procurement can be seen as process in which is strived for achieving extra environmental quality added to the normal process of procurement and contracting that already include ‘standard’ environmental requirements (relating to mitigation measures and meeting formal norms) – see Figure 1. In addition, green procurement and integrated contracts link well and might reinforce each other; contracts that comprise various project stages might provide good opportunities to safeguard the results of green procurement processes;
- iv) *Partnering*: as contracts will relate to more inclusive scope of issues (not only substantive, technical project issues, but also social, process, context-related elements) as well as to longer time periods (sometimes 30 years or even more), there is need for more flexibility in contract requirements. In traditional contracting rather detailed requirements have been used. However in order to deal with dynamics and complexity over a long time period not only clear ‘contracts’ but also open ‘contacts’ are important (Faith-Ell and Arts, 2009, Van Valkenburg et al., 2008) – Figure 2. Partnerships should be flexible and aimed at establishing long lasting cooperative relationships. By its nature, partnering should be a flexible process that can be adapted throughout the project cycle to ensure it remains relevant and the current needs of all the partners are met. The content of the partnerships, as well as the procedures to follow and the process must be considered. Here, partnering by cooperation with local subcontractors in the supply chain is relevant (Esteves, 2009);
- v) In addition to the previous, *early contractor (or market) involvement approaches (ECI, EMI)* might enlarge the scope even more for innovation and further integration of EIA with project design and implementation (see Figure 2). In this approach contractors are invited to undertake also the planning and design phase of the project as well as the detailed engineering and construction. Its core is that the market party undertaking construction is also involved *before* the

formal planning consent decision – e.g. in preparing the design and EIA. This can be done by a) preparing bids before the consent decision by competing companies of which one is awarded the final contract (as in The Netherlands) or b) it might be by even awarding the contract before the consent decision (as is in the UK) (c.f. Van Valkenburg et al., 2008, Lenferink and Arts, 2009). The advantage of ECI approach is the room for innovation left to the contractor. As one party (the contractor) is responsible for all project stages this may enhance an early interaction between design and EIA processes balancing better trade-offs relating to design, construction and operation and maintenance. Environmental mitigation then covers the design, construction *and* maintenance phases as it can result in substantial reduction of costs and risks for the contractor. This is especially relevant to more large and complex projects (Nijsten et al., 2008, Arts et al., 2008). In effect, it would involve earlier start of the green procurement process and a further enlarged scope of partnering contracts discussed before.

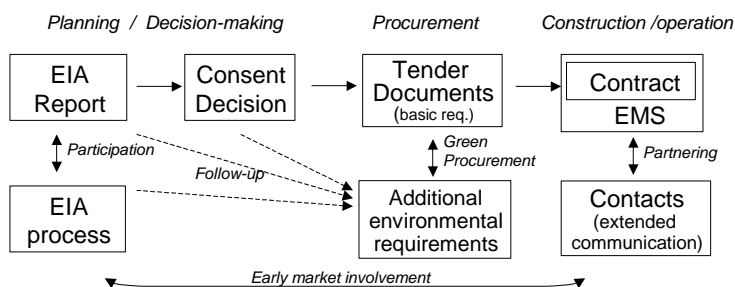


Figure 2: Integrating EIA, procurement and partnering contracts.

Discussion and conclusions

On basis of the previous discussion above, a transition from traditional contracting arrangements towards more green procurement processes and collaborative relationships can be seen in the planning of infrastructure. This can and will influence the practice of EIA in different ways. Recent studies have showed that new, more innovative procurement and contracting processes can help to improve the performance of EIA (Faith-Ell and Arts, 2009). Varnäs et al. (2009b) indicate also a need to understand the scope for improving the coordination between green procurement and EIA in order to initiate discussions on and planning for green procurement at the EIA stage itself. On the other hand, EIA can provide information and scope issues that are relevant for green procurement and partnering contracts, thereby strengthening environmental outcomes of infrastructure projects.

The role of government and business in EIA may change as well as the scope and timing of EIA (see for a discussion Arts et al., 2008). As a consequence, careful attention is needed for issues such as: a clear division of roles and responsibilities; committed management and training of staff; a professional organisation from both government and contractor side; and inclusiveness and transparency for third parties (other than government and contractor – the ‘public’). In order to prevent an obscure process between government and contractor, there is need for ongoing public involvement and scrutiny after planning consent. To this end, a consult and comply requirement can be included in contracts. More in general, the challenge is to create organisational and institutional arrangements for partnering with sufficient checks and balances that use the strength of both government and market, allow for sufficient flexibility while safeguarding weak and long-term interests.

Good transfer of (environmental) information between different stages of the project development process is essential to successful EIA as well as green procurement and partnering. Partnering and green procurement may help to overcome the fragmentation between project stages by adopting a life-cycle approach, using concepts such as early market involvement, corporate social responsibility strategies, supply chain management or EIA-related concepts like follow-up (see also Figure 2). An important challenge is to create arrangements that are adaptive to future (unforeseen) development. In order to follow-up carefully for assuring environmental performance throughout the whole life-cycle of a project one might place requirements on the contractors to: adopt an Environmental Management System (EMS), carefully monitoring and auditing of contract requirements, periodically evaluate environmental performance (measures), and subsequently to use adaptive environmental management. By integrating green procurement, partnering and EIA an approach might be developed that enables ongoing communication, learning from experience and adaptive environmental management in order to safeguard environmental performance beyond EIA.

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