

**Capacity Development for Environmental Protection:**  
Towards Better Performing Environmental Impact Assessment  
Systems in Low and Middle Income Countries

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Capacity Development for Environmental Protection:  
Towards Better Performing Environmental Impact Assessment  
Systems in Low and Middle Income Countries

Capaciteitsontwikkeling voor milieubescherming:  
Naar beter presterende milieueffectrapportagesystemen  
in lage en middeninkomenslanden  
(met een samenvatting in het Nederlands)

**Proefschrift**

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# Chapter 1: Introduction

## 1.1 The performance of EIA in low and middle income countries: a brief problem analysis

Environmental Impact Assessment (EIA) is a legal tool used to support government decisions on projects that could harm the environment. EIA is generally considered to be a tool that, prior to government approval of projects, studies the possible environmental effects and any mitigating measures necessary to minimize these effects. EIA has been legally adopted by 185 out of the 193 United Nations member states (NCEA, 2015). International donors have supported low and middle income countries (LMCs<sup>1</sup>) extensively with the introduction and development of EIA, through capacity development (World Bank, 2006; ADB, 2012; Slunge and Cesar, 2010). As EIA needs to be applied to nearly all proposed major projects, it is an important tool for governments, allowing them to ensure that when implemented, projects do not disproportionately harm the environment. In low and middle income countries, especially in the latter, the economy is growing and large investments are being made, for example in the mining, energy, infrastructure and industrial sectors. These investment projects can have considerable negative impacts on the environment if they are not adequately designed and managed. EIA can assist the investor or project proponent and the responsible authorities to design and implement a project that meets environmental standards. Moreover, EIA can prevent or stop projects that do not meet these standards. Therefore, EIA has great potential to contribute to environmental protection.

In high income Western countries this potential is utilized to a considerable extent and public involvement is mentioned as one of the main factors, although there are differences between countries (Sadler, 1996, Barker and Wood, 1999; Gibson, 2002; Cashmore et al., 2004; COWI, 2009; Pölonen et al., 2011; Arts et al., 2012; Runhaar et al., 2013; Lyhne et al., 2015). This is illustrated in table 1.1 for three Western high income countries. It shows, for example, that limited changes to the projects were mentioned by 43% to 51% of the respondents of the survey and more extensive changes to the project were mentioned by 8% to 13% of the respondents of the survey.

For LMCs, quantitative information on EIA performance such as presented in table 1.1 has not been found, but scholars agree that in most LMCs the potential of EIA has not yet been utilized or in other words have a generally low performance. Often mentioned reasons for underutilization are, EIA starts too late when the project site and design are already agreed upon, and the role of the public is limited (Lee and George, 2000; Wood, 2003; Kakonge, 2006a; World Bank, 2006; ADB, 2012; Wells-Dang et al., 2016). The variation between LMCs is however large. Thailand is for example doing relatively better than their neighbors due to the EIA authority having better capacity and to the general public having recourse to a trusted court and making use of this (Wells-Dang, 2016). There are also countries that are doing worse than average,

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<sup>1</sup>In this thesis countries have been classified according to the World Bank categories. Based upon the Gross National Income per capita the World Bank distinguishes three main groups of countries: low, middle and high income countries; the classification is carried out anew every year (World Bank, 2015).

where EIA has hardly any effect; these are mainly countries affected by serious corruption, where EIA has become a ritual process, undertaken to comply with the rules (Khadka and Shresta, 2011; Kakonge, 2013).

Table 1.1 Perceived main effect of EIA on decision-making in Denmark, the Netherlands and the UK.

	Denmark	Netherlands	UK
The explicit considerations of environmental values, without changing the consent decision	25%	30%	30%
No effect	6%	7%	4%*
Changing a project to a limited extent	51%	45%	43%
Changing a project more extensively	8%	9%	18%*
Choosing the most environmentally friendly alternative	1%	9%	4%

Explanation: Based upon surveys held under actors involved in EIA in Denmark in 2012 (100 respondents); The Netherlands in 2010 (443 respondents) and The UK in 2011 (181 respondents). For more information see Arts et al. (2012) and Lyhne et al. (2015). In this table, copied from Lyhne et al. (2015) I noticed two mistakes. Lyhne et al. (2015) has copied the figures for the Netherlands and the UK, and for two of these figures mark (with an \*) a mistake has been made and has been corrected.

Source: Adapted from Lyhne et al., 2015.

The following factors are frequently mentioned as reasons for low performance: the formal rules for EIA as reflected in the regulatory framework are sometimes not fully applied because they are too ambitious or unclear, the capacity of the EIA authority to fulfil its task is weak, the commitment of the proponent and sector authorities to EIA is often low. Moreover, the context of many LMCs is considered as a factor constraining the use of the potential of EIA: for example, because public involvement in EIA is limited and as a consequence the government cannot be held accountable for its decisions (Kakonge, 2006a, 2013; World Bank, 2006; ADB, 2012).

Despite extensive capacity development by donors (such as the World Bank), it seems that large gap remains between the actual and potential level of EIA performance in LMCs, (UNECA, 2005; ADB, 2012; Wells-Dang, 2016). Besides supporting capacity development, the international finance institutes such as the World Bank are funding projects requiring EIA according to their policies. The IEG (2010) concluded that EIA has helped to avoid or mitigate large-scale social and environmental risks in the projects financed by the World Bank Group. Box 1.1 provides an example of EIA practice in Georgia.

Box 1.1: EIA in practice: the BTC oil pipeline project in Georgia

<p><b>Context</b></p> <p>In 1994 British Petroleum (BP) initiated the construction of the Baku-Tbilisi-Ceyhan oil pipeline with a length of 1760 km and an investment of 3.6 billion US\$, aiming to transport 1 million barrels of crude oil per day. Oil is extracted in Azerbaijan and conveyed to the port of Ceyhan in Turkey via Georgia over a distance of 250 km. An EIA is mandatory in the three countries. In 2000, before the start of EIA, the presidents of the three countries signed an agreement in which a 10 km wide corridor for the construction of the pipeline was agreed upon, to avoid Armenia and Armenian communities in Georgia for geopolitical reasons. In this box, the focus is on the environmental issues of the EIA in Georgia that supported the selection of the exact route of the pipeline within this corridor.</p> <p><b>Main actors</b></p> <p>The Georgian EIA authorities had limited experience with projects of this type and were confronted with influential actors like BP and the Georgian International Oil Company (GIOG) which facilitated BP. They requested the Netherlands Commission for Environmental Assessment (NCEA) to ensure the quality of the EIA study and process met international good practice. The NCEA prepared advisory reports during scop-</p>
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ing, reviewing and compliance monitoring. The World Bank and the EBRD were the main funding organizations, together with commercial banks. NGOs were active and supported by experienced international NGOs like Bankwatch.

#### **EIA in practice**

Scoping: The public debate and focus of the EIA study was on the crossing of the sensitive and valued Borjomi-Bakuriani area by the preferred BP route. This area (i) lies in the buffer zone of a national park, (ii) is said to be the source area of mineral and spring water extracted by the Borjomi company, which feared its reputation was at risk (iii) is used for recreation in summer and winter. The EIA authority followed the NCEA advice, which was supported by NGOs and in order to avoid this sensitive area, recommended to study an alternative route outside the corridor.

Reviewing: The alternative route outside the corridor had not been elaborated in the EIA report because according to BP it was too costly and time-consuming and because the EIA had demonstrated that the source area of the Borjomi mineral water would not be affected by the preferred BP route. Under pressure from domestic and international NGOs, the EIA authority requested BP to elaborate additional mitigating measures for the preferred route crossing the sensitive area and to include these in a supplement to the EIA. BP suggested further minimizing the risks of an oil spill by (i) laying the pipe at a depth of 2 meters instead of 1 meter; (ii) installing advanced technology to detect and warn of damage to the pipeline and; (iii) creating a rapid response unit that would take action in case of a spill.

Environmental approval: The minister of environment, it is thought under pressure from the president, approved the project subject to the provision that (i) the proposed mitigating measures would be implemented and (ii) that BP would deposit a considerable sum in a bank account, to be used by parties such as the Borjomi mineral water company as compensation for any financial loss incurred as a result of damage to reputation and/or actual oil spills. National NGOs supported by international NGOs played a role in persuading BP to adopt the abovementioned mitigating measures.

#### **Performance of EIA**

Concluding, the effect of the EIA on the “greening” of the project can be considered as positive but small. This is the result of three main factors. Firstly, the selection of the 10 km corridor was not subjected to EIA but had already been agreed upon at the highest political level, and as a consequence the most environmentally friendly route could not be selected. Secondly, the EIA authority was aware of its limited capacity in terms of expertise to secure the quality of the EIA, and at the same time showed its determination to strengthen its leading role vis-à-vis strong actors as BP and GIOC, through its cooperation with the NCEA. Thirdly, the pressure from domestic and international NGOs exerted on BP and GIOC via the media further strengthened the EIA’s authority. As a result of these two factors, the EIA authority was able to encourage BP to make use of the potential of EIA to select, design and implement an environmentally friendly route within the corridor.

Source: Kolhoff (2009), CAO (2010) and IOB (2011).

What can be done to improve performance of EIA in LMCs? Before guidance can be provided on how the gap between the actual and potential level of performance might be narrowed, it is necessary to better understand the factors affecting the actual level of performance. The level of performance is in my view, the result of a country-specific EIA system. The EIA system is defined as an association of actors involved in EIA, each with their own capacities and often opposing interests, who are linked through the regulatory framework that sets “the rules of the game” that in principle these actors need to follow. The aims of this thesis, therefore, are to contribute to a better understanding of the factors affecting performance of the EIA system in LMCs and to provide guidance for capacity development that contributes to improved performance.

This chapter is organized as follows. In the next section the key features of EIA will be described. In section 1.3, EIA performance will be defined in more detail and problematized. In section 1.4

the research objective and research questions will be described. The methodology will be addressed in section 1.5. In section 1.6 the EIA system will be defined in more detail and the conceptual model is presented that guided the research. The structure of the thesis is presented in section 1.7.

## 1.2 Key features of EIA

### Definition and objectives

A distinction can be made between long-term and short-term objectives of EIA. There is common agreement among scientists and practitioners that the short-term objective of EIA is to support well-informed decision-making that is based on scientifically sound information and open and relevant to debate with the public (Caldwell, 1989; Erickson, 1994; Wood, 1995; Sadler 1996; Glasson et al. 2005). It is also generally agreed that environmental protection through maintaining or restoring environmental quality is considered to be the long-term objective of EIA (Caldwell, 1989, Meredith, 1991; Therivel et al., 1992; Wood 1995; Sadler; 1996; Glasson et al. 2005). Since the publication of the Brundtland report in 1987 and the UNCED conference in Rio in 1992, a growing number of authors have stated that EIA should also contribute to sustainable development and that therefore the scope of EIA should be broadened to include social and economic aspects (Smith 1993; Wiesner, 1995; Mostert, 1995; Sadler, 1996; Cashmore et al., 2004; Glasson et al., 2005; Nootboom, 2007). This means that the short- and long-term objectives, as reflected in the EIA regulatory framework, might differ between countries. A growing number of LMCs are including provisions to study social and health aspects as part of EIA (Lohani et al., 1997a, 1997b; Esteves et al., 2012).

The debate on objectives is reflected in the debate on definitions of EIA. The International Association for Impact Assessment (IAIA) defines EIA as “a process to evaluate and mitigate the environmental, social and other relevant effects of development proposals prior to major decisions being taken and commitments made” (IAIA, 1999). Since this definition is widely used, it has been adopted in this thesis.

### The EIA process

EIA is a process in which a number of activities are implemented consecutively. Scholars studying the performance of EIA generally distinguish the following three EIA phases in this process: pre-EIA, EIA and EIA follow-up (see table 1.1) (Christensen et al., 2005). In an evaluation of EIA in Denmark, Christensen et al. (2005) found that EIA influences the project design in all three phases.

The pre-EIA phase is defined as the phase in which the ideas for a project occur and are elaborated into a draft project. This phase is not part of the statutory EIA process but is important because EIA may already play a role. In anticipation of the assessment of a project’s environmental impacts, the project’s proponents have been known to change the project design prior to the formal start of the EIA process, or even to terminate the initiative when they are aware they have to conduct EIA yet cannot meet the required standards (Christensen et al., 2003; Arts et al., 2012). This is the so-called preventive effect (Ten Heuvelhof and Nauta; Pölonen et al., 2011; Lyhne et al., 2015). The EIA phase and the EIA follow-up phase are formal phases prescribed in the EIA legislation of most countries; they commonly encompass process activities listed in table 1.2.

Table 1.2: The EIA process: phases and main activities

The EIA process	
Phases	Main activities
A. Pre-EIA phase	a. Initial design of the project.
B. EIA phase	<ul style="list-style-type: none"> <li>b. Screening is the process in which it is determined whether EIA is mandatory.</li> <li>c. Scoping is the process in which guidelines are provided about which alternatives, impacts and other issues should be studied.</li> <li>d. Reporting is the step in which the scoping guidelines are followed and the EIA study is executed, resulting in an EIA report.</li> <li>e. Reviewing is a technical assessment of and decision on the acceptability of the EIA study and the report's quality.</li> <li>f. Public participation is not a separate step but can be executed during each of the abovementioned steps.</li> <li>g. Environmental approval is a political decision on the acceptability of the project ("consent decision") and under what conditions, as reflected in an environmental permit or license.</li> </ul>
C. EIA follow-up phase	<ul style="list-style-type: none"> <li>h. Compliance monitoring, inspection and enforcement together make up a process in which compliance with the environmental permit or license is controlled and actions are taken in the event of non-compliance.</li> <li>i. Impact monitoring or environmental impact auditing means comparing the impact predicted in the EIA study with the actual impacts that occur after implementation.</li> </ul>

Based on: Glasson et al., 2005; Christensen et al., 2005; Marshall et al., 2005.

The specific provisions for the EIA and EIA follow-up phases differ between countries in terms of level of detail and level of ambition. Georgia, for example, has no provision for scoping and compliance monitoring (activities c. and h. in table 1.2) (Kitiashvili and Konjaria, 2010), whilst Taiwan (an LMC when it adopted EIA) has included provisions for all activities b. to i. in its EIA regulatory framework (Leu et al., 1996).

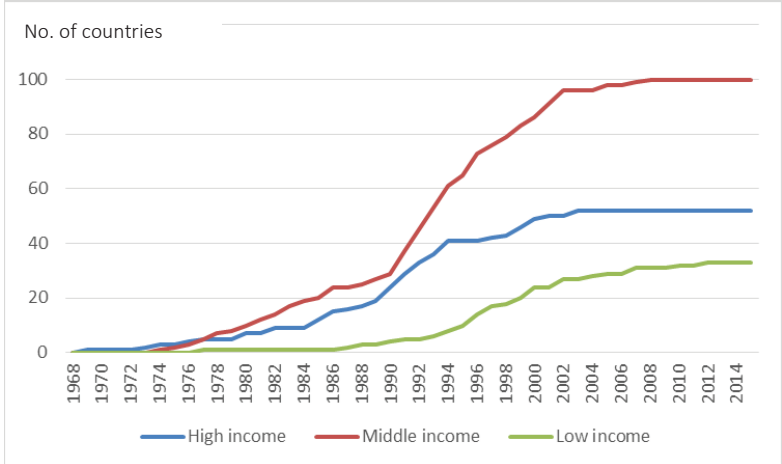
### Worldwide adoption of EIA

The worldwide adoption of EIA started with the creation of EIA in the US in 1969. Early adopters of EIA were Canada (in 1973), Australia (in 1974), West Germany (in 1975) and France (in 1976); the majority of Western high income countries (HICs) followed in the period 1980–1995 (Glasson et al., 2005). A number of LMCs were among the early adopters: e.g. Thailand (in 1975), the Philippines (in 1978) and Pakistan (in 1983) (Glasson et al., 2005). Most LMCs incorporated EIA in legislation in the 1990s; late adopters followed in the 2000s (see figure 1.1). At present, EIA has formal legal status and has been applied in nearly all LMCs; three LMCs (Surinam, South Sudan and Somalia) are in the process of developing EIA legislation, and the situation in Nauru is unknown (NCEA, 2015).

In 1989 the World Bank was the first international finance institute to adopt EIA, under pressure from non-governmental organizations (NGOs); all other development banks followed in the years thereafter. In parallel, EIA was adopted by the international development agencies: e.g. the Swedish International Development Agency (SIDA) did so in 1991 (Glasson, et al., 2005). The private sector also started to acknowledge EIA in the 1990s by developing generic guidance

documents (WBCSD, 1996; IPIECA, 2013). Public and private finance institutes were the last group of organizations to adopt EIA; they have done so since 2003, via the Equator principles, that are voluntary principles for the banking sector. This means that an EIA is now a prerequisite for funding of projects by these organizations. So, currently, nearly all countries and most of the relevant international organizations and finance institutes have adopted EIA.

Figure 1.1: Adoption of EIA in legislation, by countries per income category



Source: Netherlands Commission for Environmental Assessment (unpublished, 2015).  
 Explanation: Legal status of EIA for UN countries in 2015, N=193: 185 adopted, 4 under development, 4 unknown. High income countries N= 52; Middle income countries N= 100; Low income countries N= 33. Classification by the World Bank based upon the Gross National Income per capita, the classification is carried out anew every year, reference year 2015 (World Bank, 2015).

The worldwide adoption of EIA is a response to the growing international concern about the state of the environment since the 1960s (Hironaka, 2002). The United Nations Conferences on Environment and Development (UNCED) in 1992 and 2002 are considered to be milestones, as they recognized the importance of EIA as a tool that can contribute to more sustainable development. As a result, guidelines for the integration of biodiversity in EIA were adopted in 2004 by the signatories to the Rio convention of 1992 (Slootweg et al., 2010).

The adoption of EIA in HICs can be explained as a response to growing awareness of environmental degradation and to civil society demanding that their governments take action to combat degradation (Hironaka, 2002). In LMCs the International Union for the Conservation of Nature (IUCN) and the United Nations Environmental Program (UNEP) are considered to have played a crucial role in encouraging the adoption of EIA in the 1980s (Hironaka, 2002). After UNCED adopted EIA in 1992, international finance institutes and international donors were especially active in supporting and sometimes coercing LMCs to adopt EIA (Mokhele and Diab, 2001; Janka, 2013). According to Hironaka (2002), in LMCs, NGOs hardly played a role in this process; this in contrast to the situation in HICs.

## 1.3 The performance of EIA in LMCs

### 1.3.1 EIA performance defined and operationalized

Ever since the introduction of EIA, scientists, decision-makers and practitioners have been discussing the performance of EIA (sometimes referred to as effectiveness<sup>2</sup>). According to Morgan (2012) and Retief (2010), performance – what are we achieving through the EIA process? – is even one of the main topics in the scientific literature on EIA.

The following scholars contributed to the discourse on EIA performance in LMCs (Ortolano et al., 1987; Hirji and Ortolano, 1991; Lee and Colley, 1992; Boyle, 1993). In the EIA performance study by Sadler (1996) a clear distinction was made between procedural, substantive and trans-active performance. Procedural performance is defined as the extent to which the EIA regulatory framework has been complied with. Substantive performance refers to the extent to which objectives of EIA have been achieved. Trans-active performance is about the costs and time used to achieve the objectives (Sadler, 1996). These terms have been broadly accepted and are still widely used to study performance (Cashmore et al., 2004; Jay et al., 2007; Chanchitpricha et al., 2013).

Since the overall objective of EIA is to protect the environment, this thesis studies substantive performance because this has hardly been studied in LMCs yet research is necessary to provide better guidance to improve it and hence contribute to environmental protection. Procedural performance is only studied in this thesis in relation to substantive performance, and the third form has not been studied as this requires an economic – instead of a governance perspective.

Cashmore et al. (2004) distinguish two forms of substantive performance related to the two main EIA objectives: one form determines to what extent the short-term objective, informed decision-making, will be achieved, and another form determines to what extent the long-term objective, environmental protection, will be achieved. Cashmore et al. (2004) state that substantive performance of informed decision-making can be measured through the contribution of EIA to “the consent or approval decision” which is the decision on whether a project is approved or authorized and, if so, on what conditions. According to Devlin and Yap (2008), in LMCs it is rare for a project to be rejected because of the EIA; they consider this to be an indication of poor EIA performance. Substantive performance of environmental protection can also be measured through the contribution of EIA to “project change or design” during the EIA process (Cashmore et al., 2004). This thesis primarily focusses on the long-term objective, as this has received less research attention (as will be shown in the next section) although it is ultimately the overall objective of EIA.

The following scholars argue that consideration should be given to the possibility that EIA performs in ways other than by directly influencing the project design and project decision (Bartlett and Kurian, 1999; Bond, 2003; Cashmore et al., 2004; Jay et al., 2007; Arts et al., 2012; Van Doren et al., 2013). According to Jay et al. (2007), awareness raising and learning by individuals and organizations involved in EIA may contribute to substantive performance in a more subtle

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<sup>2</sup> In the EIA literature the terms “effectiveness” and “performance” are both used, often synonymously. In this thesis the term “performance” is used because three forms of performance have been distinguished and defined and this thesis studies one of the forms in particular, namely substantive performance.

and possibly long-term way, resulting in institutional development. A distinction can be made between learning at organizational and at system level. An example of organizational learning is that the organization provides opportunities for knowledge sharing among the people in the organization. An example of system learning is the adjustment of the EIA regulatory framework as a result of the evaluation of EIA system performance. Bartlett and Kurian (1999) and Bond (2003) and Cashmore et al. (2004) assume that the learning process influences society and therefore even contributes to the change of the value system, but that is difficult to prove.

Summarizing, for the operationalization of substantive performance the following four main criteria are used (i) the preventive effect (ii) the contribution of EIA to the consent or approval decision and (iii) the contribution of EIA to project design or change for the three phases of the EIA process, including withdrawal of the project by the proponent, and (iv) the contribution to institutional development through e.g. awareness raising and learning.

### 1.3.2 A review of selected substantive performance studies

Wood (2003) and Cashmore et al. (2004) concluded that the majority of EIA performance studies in LMCs focus on procedural performance. According to these authors, substantive performance is studied less frequently because it is more difficult to evaluate, a conclusion that they do not elaborate. It is assumed that the difficulty arises not only because of the cost and time involved and the difficulty of accessing data, but also because of what IOB (2011) has called the attribution problem, i.e. the difficulty of proving the actual contribution of EIA, as other factors also have an influence on environmental conditions. Another possible reason for focusing on procedural performance rather than substantive performance could be that Wood (2003) and Cashmore et al. (2004) seem to think that the assumption for HICs that good procedural performance is a condition for good substantive performance is also applicable in LMCs (Wende, 2002; Zhang et al., 2012; Arts et al., 2012).

To get better insight into the number and representativeness of studies on substantive performance of EIA systems in LMCs, the literature was reviewed. Articles studying procedural and or substantive performance in LMCs<sup>3</sup> were selected from the three most prominent scientific journals publishing on EIA over the last two decades, namely *Environmental Impact Assessment Review*, *Journal of Environmental Assessment and Policy Management* and *Impact Assessment and Project Appraisal*. Articles studying only one case or one aspect of EIA system performance such as public participation are widely available but were excluded (Kakonge, 1996; SAIEA, 2003; UNECA, 2005; Tang et al., 2005; Gunes, 2005; Devlin and Yap, 2008; Niyaz and Storey, 2011) as these do not focus on the performance of EIA systems as a whole. This resulted in forty-eight articles being selected, forty-four of which focus exclusively on procedural performance; the remaining four articles examine substantive performance. A brief overview of all articles is presented in Appendix 1. In table 1.4 the characteristics of the latter four articles are presented. The review is limited to the three aforementioned English-language scientific journals and therefore the four studies identified can be considered as indicative but not representative for the studies on EIA substantive performance conducted in LMCs.

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<sup>3</sup> World Bank country classification for the reference year 2015; World Bank, 2015).



Table 1.3: Classification of the 4 selected articles\*)

Criteria to measure EIA substantive performance			
Prevention effect	Contribution to project change / design	Contribution to consent or approval decision	Contribution to awareness raising & learning
- No articles	Pre-EIA phase	- Banham et al. 1996 - Marara et al. 2011	- Bitondo et al. 2007
	- No articles		
	EIA phase		
	- Bitondo et al. 2007		
	EIA follow-up phase		
	- Banham et al. 1996 - Kabir et al. 2013		

\*) The articles selected were published in the period 1996-2015 in the scientific journals *Environmental Impact Assessment Review*, *Journal of Environmental Assessment and Policy Management*, *Impact Assessment and Project Appraisal*. In 1998 the latter journal replaced two journals (*Impact Assessment* and *Project Appraisal*) that were assessed for the years 1996 and 1997.

Table 1.4: Characteristics of the 4 selected articles

Author and year of publication	Country	Type of performance studied	Level of substantive performance		
			Method	Indicators and results	Conclusion *)
Banham et al. 1996	India	Procedural and substantive	Statistical information	Of all projects appraised: - 2% rejected on environmental ground - 18% rejected for lack of information Over 50% of the projects fail to fully comply with permit conditions	Low
Bitondo et al. 2007	Cameroun	Substantive	Case studies N=2 (1 funded and 1 donor supported)  Interviews N=unknown	"As a consequence of the pressure from NGO's, the initial route of the pipeline was modified" "...request for an EIA for mining project was considered a consequence of the EIA for the pipeline project. Increase of public awareness about EIA was one of the major results ..."	Low to moderate
Marara et al. 2011	Kenya, Rwanda, Tanzania	Procedural and substantive	Questionnaire N=105  Interviews N=12	Influence of the EIA in the D-M process: - high for all three countries Quality of follow-up activities incl. enforcement: - low for all three countries	Low to moderate
Kabir et al. 2013	Bangladesh	Procedural and substantive	Case studies N=3 (funded by donors)  Interviews N=25	Implementation of mitigation measures: - recommended mitigation measures for predicted impacts are not addressed adequately for all projects	Low to moderate

\*) The level of substantive performance is scored on a three-point scale (low, moderate, high) and is based upon an interpretation, as in the articles, different criteria were used and the level as such was not measured.

Table 1.3 specifies the criteria employed in the four articles that address substantive performance. The prevention effect has not been considered in any of the articles. Three articles consider the contribution to project change. Two articles consider the contribution to the consent or approval decision. The contribution to awareness raising or learning has been addressed in one article. Two articles refer to two criteria. The four articles show that the level of substantive performance ranges from low to moderate (Banham et al., 1996; Bitondo and André, 2007; Marara et al., 2011; Kabir et al., 2013). An explanation is given in the next section.

Although these studies are valuable, only a few countries have been studied and therefore it is expected that they are not representative of all LMCs. Their contribution to the scientific body of knowledge on substantive performance in LMCs is therefore considered to be limited.

### Explaining substantive performance

To explain substantive performance in LMCs, four of the above mentioned selected articles have been consulted. The article by Banham et al. (1996) was excluded because this study does not provide explanations. In addition, one more study on substantive performance that is used in this section has been found (Mwalyosi and Hughes, 1998). On the basis of these five studies the low to moderate level of substantive performance in LMCs can be explained by the following main factors that have been combined into three categories: the EIA regulatory framework, the capacities of the actors and contextual factors. As an illustration, box 1.2 that shows that political pressure by the EIA authority is executed to increase EIA substantive performance in China.

Box 1.2: EIA performance in China. The online version of the *Shanghai Daily* recently contained the following piece

#### **“China to improve environmental impact assessments”**

Feb 24, 2016

BEIJING, Feb. 24 (Xinhua) -- The Ministry of Environmental Protection is pinning its hope [sic] on laws and regulations to ensure that projects are regulated by environmental impact assessments.

In a ministry statement released Wednesday, Vice Minister Pan Yue was quoted as saying that environmental impact assessment hasn't been adequately enforced, and in some cases, they do not happen at all. Even when the assessment is carried out, the results play hardly any role in evaluation and approval. 'Projects unhindered by environmental impact assessment have become the main cause of pollution, environmental emergencies, chaotic distribution, overcapacity and disorderly development,' Pan said. The statement said the ministry is working to amend the Law on Environmental Impact Assessment to set specific responsibilities for companies and government agencies with appropriate sanctions for poor enforcement. The draft amendment, including stipulations on 'far greater fines' for the construction of projects not yet [been] officially approved, are [sic] already on the agenda of legislative authorities. Among a series of rules already released by the ministry, one specifies punishment for officials who fail in enforcement, while another orders construction companies to repeat assessment for complicated and large-scale projects after a certain time of operations. Pan revealed that an assessment campaign is already under way in the Beijing-Tianjin-Hebei region, Shanghai and Pearl River Delta in southern China."

Source: [http://www.shanghaidaily.com/article/article\\_xinhua.aspx?id=321156](http://www.shanghaidaily.com/article/article_xinhua.aspx?id=321156)

**EIA regulatory framework:** In four of the five studies, it is concluded that the EIA regulatory framework is neither clear nor comprehensive (Mwalyosi and Hughes, 1998; Bitondo, 2000; Marara et al. 2011; Kabir et al., 2013). The explanation put forward in three studies is that the EIA regulatory framework has not yet been adjusted since its introduction or the procedure is not yet elaborated (Mwalyosi and Hughes, 1998; Bitondo, 2000; Kabir et al., 2013). Marara et al. (2011) conclude that quality of the EIA regulatory frameworks is considered to be high in Kenya and Tanzania and moderate in Rwanda. However, according to Marara et al. (2011), the EIA process is not well integrated in project decision-making and as a result EIA often starts late and work has already started, and the project design has already been elaborated. Weak integration is also found by Mwalyosi and Hughes (1998) and Kabir et al. (2013).

**Actors and their capacities:** Kabir et al. (2013) found that the capacity of the EIA authority to execute its task during the EIA phase and EIA follow-up phase is limited by lack of stable leadership, understaffing, high staff turnover and lack of resources. Kabir et al. (2013) concluded for the country he studied that staff members are susceptible to corruption and their autonomy is low and as a result they are vulnerable to political intervention. Mwalyosi and Hughes (1998), Bitondo and André (2007) and Marara et al. (2011) acknowledge the lack of resources of the EIA authorities in the countries studied and they consider political interference especially of powerful private proponents as a factor hampering EIA substantive performance in the countries they studied. According to Marara et al. (2011), this is a result of the low autonomy of the EIA authorities in these countries. Weak interagency cooperation is mentioned as a limiting factor by two studies but is not further substantiated (Marara et al., 2011; Kabir et al., 2013).

Three studies mention that in general the quality of the EIA report is inadequate and that this affects the planning and approval of projects (Kabir et al., 2015). Poor databases are considered to hamper the preparation of good quality EIA studies (Bitondo, 2000; Kabir et al., 2015). However, it seems that an even more important factor in addition to lack of data is low commitment or political will, as proponents often consider EIA to be a costly process that delays project approval (Mwalyosi and Hughes, 1998; Kabir et al., 2013).

Two studies mention that the involvement in and influence of the general public on EIA is minimal and that this because of the negative attitude of the EIA authority, project proponents and EIA practitioners towards the general public, whom they perceive as ignorant and unable to contribute usefully (Mwalyosi and Hughes, 1998; Marara et al., 2011).

International donors are mentioned in two studies as playing an important role in the EIA phase but then not showing interest during the EIA follow-up phase, with the result that mitigation measures agreed upon in the EIA phase are not always implemented (Mwalyosi and Hughes, 1998; Kabir et al., 2013).

Besides identifying the direct impacts of EIA, the studies in Cameroon and Tanzania identified the indirect impacts that resulted in increased environmental awareness of all actors involved (Mwalyosi and Hughes, 1998; Bitondo and André, 2007). In the Cameroon study, Bitondo and André (2007) show that EIA has been institutionalized primarily in the road sector due to the long involvement of donors and international NGOs in road-building projects of national importance involving roads going through the internationally highly valued primary rainforest.

**Contextual factors:** Marara et al. (2011) found a low level of public involvement in the three countries studied and this is explained by a low level of environmental awareness due to illiteracy and other priorities in a situation where poverty prevails. In a context in which civil society is barely able to hold the government accountable and in a political-administrative system in which political interference is common, the level of substantive performance is considerably influenced by those contextual factors (Marara et al., 2011 and Kabir et al., 2013).

### 1.3.3 Capacity development to improve EIA system performance

Capacity development is an important factor that might contribute to substantive performance. Since the UNCED conference in 1992, bilateral donors such as SIDA and international finance

institutes such as the World Bank have broadly supported the development of the EIA regulatory framework and enhancement of the capacities of the actors involved in EIA in the majority of LMCs (OECD, 1996; UNEP, 1996, 2002a; Doberstein, 2003; Slunge and Cesar, 2010; IOB, 2011). There is no agreed definition of capacity and capacity development (Morgan, 2006). In this thesis, capacity is defined as the ability of the EIA organizations to achieve their interests and objectives. Capacity development is defined as the process that aims to improve EIA system performance by developing the regulatory framework, enhancing the capacities of the EIA organizations, and developing and applying mechanisms to secure the maintenance or further development of the enhanced capacities. There is growing understanding that capacity development is in principle a collaborative organizational learning process (Armstrong, 2013; Dijkstra et al., 2016). This process can be supported by domestic actors who are part of the EIA system, as well as by external actors such as SIDA and the World Bank.

The scientific literature on capacity development to improve substantive performance of EIA systems in LMCs as well as in HICs is limited. Pearson states (2011) that capacity development is a three-stage process and the first stage is to understand what capacities exist, what capacities need to be developed and the context in which the need occurs. The second stage is design and implementation, including monitoring, and the third is evaluation. Grindle (2007) states that there is relatively much guidance on the process conditions for capacity development (i.e. "how to do it"), but that there is a great need for guidance on the content (i.e. "what to do": which capacities can and need to be enhanced and in which order?). In addition, Armstrong (2013) states that guidance is required on "what to do", to ensure that capacities that have been enhanced are maintained and further developed and do not erode when a capacity development program ends. According to Dijkstra et al. (2016) capacity development does not always achieve its objectives, especially when ownership or commitment for change is low, as then the objectives will not be achieved or may even reduce performance.

In the EIA literature consulted there is no elaborated and broadly accepted theory of change on improving the performance that could guide the development of EIA actors and their capacities in LMCs. The recently published "EIA systems approach to capacity development" by the NCEA (2014) can be considered as the most elaborated theory of change but it does not take the variety of country contexts into consideration and neither has been tested systematically in LMCs.

In this thesis, two groups of actors are distinguished that may have a role in capacity development: domestic organizations and international organizations. Domestic organizations are organizations that are based in the country in question and are involved in the EIA system; the EIA authority or a knowledge actor (producing knowledge for EIA) are common organizations that fulfil this role. International organizations surely "do not have their headquarters in the country in question" and may or may not be involved in the EIA system as an investor or funding agency.

This thesis research will provide a contribution to guidance for the first two stages of the capacity development process that focusses on the development of the regulatory framework and on enhancing and securing the capacities of the main organizations involved in EIA.

## 1.4 Research objective and questions

The previous section mentioned that research on the substantive performance of EIA systems primarily focusses on HICs that in general are performing well. Only a small amount of research has focused on understanding and improving the substantive performance of EIA systems in LMCs in which performance in general is considered to be poor. Moreover, bilateral donors and international finance institutes have considerably supported the introduction and development of the EIA system through capacity development programs that seem to have had little effect on EIA substantive performance in LMCs. The main research objective of this thesis is therefore:

**To provide a better understanding of the factors that explain the substantive performance of EIA systems in LMCs, in order to provide guidance for capacity development that contributes to improved performance of EIA systems in LMCs.**

The main object of the research is the substantive performance of the EIA system in LMCs. The EIA system consists of the regulatory framework plus the actors and their capacities involved in EIA. Explanations for substantive performance are explored within the EIA system and in contextual factors. Capacity development is a distinct factor that will be analyzed, to ascertain its contribution to the substantive performance of the EIA system. The conceptual framework in which these factors and their linkages are presented is described in section 1.5.

This thesis aims to achieve the abovementioned objective by answering four research questions that are related to four chapters in this thesis.

**Research question 1:** How can the *factors* influencing *EIA system performance* in LMCs be conceptualized?

The aim of this theoretical research question is to develop a conceptual model and identify the main factors or concepts and causal relations that need to be studied to better understand and improve EIA system performance. This model is based on an extensive literature review and illustrated with cases from LMCs. The conceptual model is elaborated in chapter 2.

**Research question 2:** How and to what extent is the *EIA system* influenced by its *context*?

To answer this question, empirical research was conducted. The aim of this empirical research is to identify the importance of the contextual factors as well as the other factors that explain the development of the EIA regulatory framework. This is important because the ambitions a country wants to achieve with EIA are reflected in the EIA regulatory framework and that framework provides the formal rules that determine the tasks of the actors involved in EIA. Moreover, the country in question provides some guidance, in order to develop the regulatory framework that contributes to improved EIA system performance. The empirical research was conducted in three LMCs. The findings of this research are presented in chapter 3.

**Research question 3:** Which *capacities* of the EIA organizations explain *EIA system performance*?

This question was also addressed by conducting empirical research. The aim of this empirical research was to identify which key actors and which of their capacities most contribute to the substantive performance of the EIA system. In this study the contextual factors have been taken into consideration. In addition, some guidance notes about the development of the capacities

of the main EIA organizations have been provided, in order to help improve EIA system performance. This empirical research was conducted in two LMCs. The findings of this research are presented in chapter 4.

**Research question 4:** In what way is it possible to *enhance* and to *secure key capacities* of the main organizations involved in EIA in order to contribute to *improved substantive performance* of EIA systems in LMCs.

The aim of the empirical research conducted to answer this question was to provide guidance for enhancing and securing the capacities of the main organizations involved in EIA in order to contribute to improved substantive performance of EIA systems in LMCs. This research built upon the insights of the second empirical study presented in chapter 4. The findings of this research are presented in chapter 5.

### **Societal relevance**

This thesis is relevant from a societal point of view because every day, millions of people in LMCs can be negatively affected by a variety of proposed project investments, even though in many cases these projects have undergone EIA. Moreover, EIA can give a voice to the people affected and can contribute to acceptable solutions for them by elaborating alternatives and mitigating measures. EIA can fulfil this potential in nearly all LMCs, as they have legally adopted EIA. However, in most LMCs there is still a gap between the potential and the practice of EIA. This thesis aims to help close this gap through research on EIA systems in LMCs, using a two-step approach. In the first step the factors explaining EIA substantive performance were analyzed. In the second step, the lessons learned from this analysis were used to develop guidance for internal and external actors that aim to improve the performance of the EIA system. By so doing, the thesis contributes to the development and implementation of potentially more effective capacity development programs that are expected to contribute to better performing EIA systems in LMCs.

## **1.5 Conceptual model**

The analytical framework presented in figure 1.2 consists of five components that are briefly explained in this section and further elaborated later in this thesis.

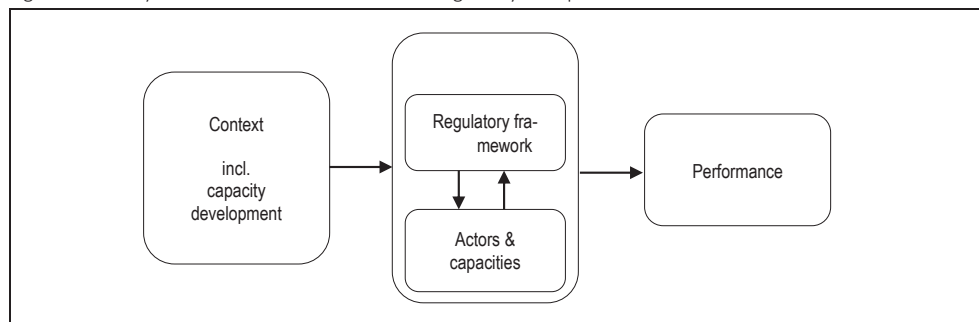
### **Substantive performance**

As stated in section 1.3 substantive performance of an EIA system is defined as the extent to which the objectives of EIA have been met (Sadler, 1996). The short-term objective is informed decision-making; the long-term objective is environmental protection. As stated in section 1.3, this thesis focusses primarily on the extent to which environmental protection is achieved.

### **The EIA system**

In this thesis, the central object of study is the national EIA system. It is defined as an association of actors involved in EIA, each with their own capacities and often opposing interests, which are linked through the regulatory framework that sets “the rules of the game” (see figure 1.2).

Figure 1.2: Analytical framework: Factors influencing EIA system performance



### Regulatory framework

The EIA regulatory framework consists of the EIA legislation, procedures and guidelines that provide formalized or legal guidance to the EIA process. This means that the EIA regulatory framework consists of all EIA formal rules and supporting guidance documents adopted by a government institution such as the parliament, the cabinet or a minister. In practice, informal or unwritten rules are norms and customs that can be applied by the EIA actors involved. The formal and informal rules together are known as the institutions that provide “the rules of the game” (North, 1990) for the EIA system.

### Actor capacities

As stated in section 1.3, in this thesis, capacity is defined as the ability of the EIA organizations or actors to achieve their interests and objectives. The capacities of the actors involved in an EIA system largely determines whether the objectives and ambitions as set in the regulatory framework will be achieved. For this research, six main groups of actors were distinguished (but note that other actors may also be involved):

- The proponent or developer of the project subject to EIA. This may be a private investor or a government authority;
- Knowledge organizations (e.g. a consultant or a university) that conduct EIA studies on behalf of the proponent;
- The government organization(s) responsible for EIA;
- The government organization(s) that have a role or interest in EIA;
- NGOs or individuals involved in EIA;
- Donors and international finance organizations that fund or support the proponent.

The performance of these organizations in the EIA system is determined by their level of ownership of EIA, which is considered as a key capacity that is defined as the “the will” (organizational capacities) and “the ability” (technical capacities) of an organization to achieve the EIA objectives (Stoeglehner et al., 2009). According to Cashmore et al. (2004) the difference in the level of ownership and influence between the main actors largely determines the performance of the EIA system. Box 1.2 illustrates the importance of political will to improve performance through introducing new rules and better compliance.

### Capacity development

Capacity development is defined as the process that aims to improve EIA system performance by developing the regulatory framework, enhancing the capacities of the EIA organizations and

developing and applying mechanisms to secure the maintenance or further development of the enhanced capacities (see section 1.3).

### **Contextual factors**

Contextual factors are defined in this model as all those factors that influence EIA system performance, are not part of the EIA system and can hardly be influenced by the actors of the EIA system or through capacity development by domestic or international organizations. Many scholars have recognized the influence of the contextual factors on EIA system performance. These contextual factors include the political system, the socio-economic situation, the state of the environment, and the institutional / legal framework (Kakonge, 1996, 1998; Cherp, 2001; Annandale, 2001; Mao and Hills, 2002; Bitondo, 2000, 2007; Clausen et al., 2011; Wells-Dang et al., 2016). In the EIA literature, no commonly accepted framework to study context factors has been agreed upon, however.

## **1.6 Research design, strategy and methodology**

### **Selection of countries**

As a result of the constraints of time and funding, the maximum number of countries was limited to three LMCs. For the selection of those countries the following criteria were applied: EIA adopted and applied for some time, key resource persons at the EIA authority support the research and allow the author access to primary data, involvement of the author in EIA capacity development in different contexts. Based on those criteria, Ghana, Georgia and Yemen were selected. These countries definitely differ in their contexts. Yemen is still a non-democracy whilst Georgia and Ghana are young democracies with a totally different history. All three countries have had EIA in place for some time, as they all enshrined EIA in legislation in 1994. The directors of the respective EIA authorities in Ghana, Georgia and Yemen were very supportive of and cooperative in this research and therefore they provided access to primary and secondary data. The author was involved as a part-time adviser in several EIA capacity development activities in Ghana (2007–2012), Georgia (2004–2016) and Yemen (2004–2010). This advisory work was financially supported by the Netherlands, which had a bilateral development cooperation relationship with these countries. Unfortunately, the research in Yemen had to be halted in 2011 due to the deteriorating safety situation.

### **Scope of the research: EIA system and EIA project level**

EIA can be applied in a spectrum of development proposals including policies, plans, programs and projects. EIA for policies, plans and programs is also known as Strategic Environmental Assessment (SEA). This thesis focuses on EIA for projects because that is mandatory in nearly all LMCs, whilst SEA is relatively new and mandatory in only a small number of these countries.

According to the IAIA definition of EIA (1999) quoted in section 1.2, as well as studying the environmental impacts, EIA can study the social and other effects. This thesis focusses primarily on the environmental effects, because in two of the three countries studied, EIA legislation only prescribed the assessment of environmental impacts.

In this research two levels of analysis are distinguished: the EIA system level and the EIA project level. The focus on system level makes it possible to assess the level of EIA substantive performance in general. The focus on project level provides insight into the factors involved in the substantive performance of an individual project that is probably not representative of the level



of substantive performance of the EIA system in general. An analysis at EIA system level was conducted for two phases of the research and the results are presented in chapters 3 and 5. In the research presented in chapter 3, data on the EIA regulatory framework in the three selected countries (collected primarily through interviews) was analyzed. In the research, presented in chapter 5, data were gathered at system level, focusing on substantive performance and the main actors, and a prototype of a diagnostic tool was validated by making use of two expert panels. The first expert panel represented 11 LMCs and the second expert panel had work experience in about 30 LMCs. Chapter 4 presents the findings of an analysis at project level that aimed to provide insight into the level of substantive performance of the EIA system in Ghana and Georgia, and the explanatory factors. To do so, four EIA cases in Ghana and eight cases in Georgia were selected and a comparative analysis conducted at project level. Due to the limited number of cases studied, the results of this analysis are not considered to be representative of the substantive performance of the EIA system in both countries, but merely illustrative. In this research, substantive performance, in terms of the contribution of EIA to environmental protection, was measured in terms of the perceived changes in the project design during the three phases of the EIA process. It was assumed that there is a causal relationship between the project changes made during the three phases of the EIA process and the change in the environmental quality. Depending on the project changes made, the EIA project therefore contributes to the long-term EIA objective of environmental protection.

#### **Research method and data collection**

A combination of methods was used to collect quantitative and qualitative data. In chapters 2 to 5 the research method in question is justified in detail.

**Desk research:** Desk research was done in the library and archives of the EIA authorities in Ghana and Georgia, to study all relevant project documentation of the selected cases: see chapter 4.

**Site visits:** In each of the selected countries (Yemen, Georgia and Ghana) several project sites were visited together with the EIA authorities, to better understand the factors that influence performance of EIA in practice. These visits were instrumental for the articles presented in chapters 2 and 4.

**Interviews:** Key respondents were interviewed to collect information for the article published in chapter 3. For the article published in chapter 4, respondents involved in one or more of the selected cases were interviewed.

**Expert panels:** Expert panels were appointed to validate the data gathered and analyzed of cases in Ghana and Georgia: see chapter 4. Two expert panels were organized to validate the diagnosis tool: one at the annual conference of the International Association for Impact Assessment (IAIA) in Italy (April, 2015) and the other at the Netherlands Commission for Environmental Assessment (June, 2015): see chapter 5.

**Conferences:** Earlier versions of two published articles (chapters 3 and 4) were presented at annual conferences of the IAIA: chapter 3 in Mexico (2011) and chapter 4 in Canada (2013) and Chile (2014). The feedback from the audience at the conferences resulted in further refinement of these articles.

## 1.7 Structure of the thesis

The structure of this thesis is presented in figure 1.3. Chapters 2, 3, 4 have been published as articles. Chapter 5 has been submitted and is under review after revisions have been made. Chapter 2 provides the conceptual framework applied for the empirical part of the research. The results of the empirical studies are presented in chapters 3, 4 and 5. Chapter 6 provides a synthesis of the research findings as presented in chapters 3, 4 and 5. Figure 1.4 gives details on the three published articles that were co-authored by the author of this thesis and indicates to which chapters they have contributed.

Figure 1.3: Structure of the thesis

Articles presented in the respective chapters and references to the publications
<p><b>Chapter 2:</b> The contribution of capacities and context to EIA system performance and effectiveness in developing countries: towards a better understanding.</p> <p>Published as: Kolhoff AJ. Runhaar HAC. Driessen PPJ. The contribution of capacities and context to EIA system performance and effectiveness in developing countries: towards a better understanding. <i>Impact Assessment Project Appraisal</i> 2009:271-281.</p>
<p><b>Chapter 3:</b> An analysis framework for characterising and explaining development of EIA legislation in developing countries – illustrated for Georgia, Ghana and Yemen.</p> <p>Published as: Kolhoff AJ. Driessen PPJ. Runhaar HAC. An analysis framework for characterizing and explaining development of EIA legislation in developing countries – illustrated for Georgia, Ghana and Yemen. <i>Environmental Impact Assessment Review</i> 2013:1-15.</p>
<p><b>Chapter 4:</b> The influence of actor capacities on EIA system performance in low and middle income countries – Cases from Georgia and Ghana.</p> <p>Published as: Kolhoff AJ. Runhaar HAC. Gugushvili T. Van der Leest B. Driessen PPJ. The influence of actor capacities on EIA system performance in low and middle income countries – Cases from Georgia and Ghana. <i>Environmental Impact Assessment Review</i> 2016:167-177.</p>
<p><b>Chapter 5:</b> Overcoming low EIA performance - A diagnostic tool for the deliberate development of EIA system capacities in low and middle income countries.</p> <p>Submitted as: Kolhoff AJ. Driessen PPJ. Runhaar HAC. Overcoming low EIA performance - A diagnostic tool for the deliberate development of EIA system capacities in low and middle income countries (Status: under review).</p>
<p><b>Chapter 6:</b> Conclusions and reflections.</p>

Figure 1.4: Co-authored published articles

Published co-authored that are supportive to the thesis:	Supportive to chapters of the thesis
<p>1. Published as: Van Loon L. Driessen PPJ. Kolhoff AJ. Runhaar HAC. An analytical framework for capacity development in EIA. The case of Yemen. <i>Environmental Impact Assessment Review</i> 2010:100-107.</p>	<p>Chap. 3; Chap. 4; Chap. 5; Chap. 6.</p>
<p>2. Published as: De Jong AA. Runhaar HAC. Runhaar PR. Kolhoff AJ. Driessen PPJ. Promoting system-level learning from project lessons. An analysis of donor-driven indirect learning about EIA systems in Ghana and the Maldives. <i>Environmental Impact Assessment Review</i> 2012:23-31.</p>	<p>Chap. 3; Chap. 5; Chap. 6.</p>
<p>3. Published as: Glücker AN. Driessen PPJ. Kolhoff AJ. Runhaar HAC. Public participation in environmental impact assessment: why, who and how? <i>Environmental Impact Assessment Review</i> 2013:104-111.</p>	<p>Chap. 6.</p>

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# Chapter 2: The contribution of capacities and context to EIA system performance and effectiveness in developing countries: towards a better understanding<sup>4</sup>

## Abstract

EIA has the potential to contribute towards more sustainable development through well-informed decision-making. Evaluation studies conclude that this potential is utilized to a considerable extent in rich western democratic countries such as Canada and the Netherlands, but hardly in developing countries. EIA capacity development programmes have not been able to structurally change this situation in developing countries, where is lack of insight into the root causes for low EIA performance. There is growing evidence that context specific characteristics such as the political system and the capacities of the key stakeholders are insufficiently considered in evaluations of EIA system performance. Most evaluations focus primarily on procedural shortcomings. As a consequence, capacity development activities that arise from EIA system evaluations do not tackle the underlying constraints. The aim of this article is to identify factors influencing EIA system performance in developing countries, and a conceptual model was developed to provide insight into those factors, building on a review of the current approaches and insights. A thorough assessment of EIA system performance is considered a necessary first step before capacity development activities can be identified, aiming to develop EIA systems that utilize the potential for EIA in a country.

Key words: EIA system, performance, context, capacities and analytical framework.

## 2.1 Introduction

Evaluation studies in a large number of countries conclude that EIA systems are performing reasonably well in western countries and that performance in developing countries is generally weak (e.g. Cherp 2001; Wood 2003). The shortcomings of a weak EIA system in developing countries are often identical. The findings of an evaluation of the EIA system in Sudan by Ali (2007) can be considered as indicative for many developing countries. The EIA regulatory framework is incomplete, and scoping for example, is no obligatory. EIA is often applied too late after implementation of projects already started. Public participation is encouraged by legislation but hardly practiced. The quality of consultants executing EIAs is often poor. Once an EIA report is adopted, no follow up is undertaken and inspection and enforcement are almost absent. Ali (2007) concluded that, because of these findings, EIA system performance in Sudan is weak, and identified the following recommendations: improve the EIA regulatory framework, train EIA stakeholders, allow for public participation in the EIA process and install a system to secure funding of EIA. Evaluations of EIA system performance in, for example, Nigeria by Ogunbo (2004) and in Cameroun by Alemagni et al. (2007) came to similar conclusions and recommendations. These studies have in common that they focus on the regulatory EIA frame-

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work and implementation in practice in order to explain EIA system performance. Yet, assessments of the *feasibility* of such solutions in the light of the specific national context are typically not addressed in such studies. The studies by Ali and Alemagni are indicative for a group of approaches developed in western democratic countries and transplanted to developing countries. In western democratic countries these approaches are adequate because context factors are a less constraining for EIA system performance compared to developing countries.

The aim of this paper is to identify context and other factors that influence EIA system performance in developing countries. The model presented provides guidance for analysis of EIA system performance. This is considered a first necessary step to develop more effective EIA systems in developing countries. In this article an EIA system is defined as the “rules of the game”, consisting of the EIA regulatory framework and informal rules applied in practice, and the capacities of the actors involved. Capacity is defined as the ability of individuals, institutions and societies to perform functions, solve problems, and set and achieve objectives in a sustainable manner (UNDP, 2007).

In next section EIA system performance is defined. In the following section the literature on evaluation of EIA is reviewed. This information provides building blocks for the conceptual model that provides insight in the factors that influence EIA system performance. In the fourth the main components of the EIA system and the context are described. Furthermore, the causal relations between the EIA system components and performance, and the influence of the context on the performance of EIA system components, as well as on the feasibility of further developing these components, are described and illustrated by examples from practice.

## 2.2 EIA system performance

### 2.2.1 EIA system performance – a literature review

In general, EIA system performance is measured in terms of achieving EIA objectives (which is identical to the concept of ‘effectiveness’), but what are the objectives of EIA?

NEPA, the founder of EIA stated that the objective of EIA is to restore and maintain environmental quality (USA National Environmental Policy act, 1969). Many others consider this the long term objective of EIA (Caldwell 1989; Meredith 1991; Therivel et al. 1992; Wood 1995; Sadler 1996). Since the publication of the Brundtland report (1987), a growing number of authors state that EIA is one of the tools that can contribute to sustainable development by implementing projects that are environmentally sound, socially acceptable and economically viable. The scope of study in EIA should therefore be broadened including social and economic aspects (Smith 1993; Wiesner 1995; Mostert 1995; Glasson et al., 1996; Sadler 1996; Nootboom, 2007). To achieve these long term objectives decision-makers uses EIA as a tool for *well-informed decision-making*.

EIA academics and practitioners in western countries and practitioners in a large number of developing countries appear to have different understandings of ‘informing well’. According to the first group, well informed decision-making makes use of knowledge that is scientifically sound, and open and relevant to debate with the public (Caldwell 1989; Erickson, 1994; Wood 1995; Sadler 1996; Glasson et al. 1996). Some authors from western democratic countries go

one step further and state that EIA should have a role in encouraging solutions that are *acceptable* to politicians, stakeholders and the public in general: EIA as a “design tool” (Mostert 1995; Van de Riet, 2003). In Canada EIA is seen as a tool for mediation, to solve conflicts that arise from the proposed investment that is subject to EIA (Doelle and Sinclair, 2006). The second group of authors, predominantly from developing countries, consider the objective to be to provide knowledge on the environmental impacts of proposed projects. EIA is considered as a “compliance tool” comparable to a robust environmental clearance or permitting procedure (Purnama, 2003; Ahammed & Harvey, 2004). These authors state that public involvement is low and will stay low for some time because the rights and the capacities of civil society organizations are limited, and a culture of participation and appeal does not exist, for example Indonesia (Purnama, 2003) and Bangladesh (Ahammed & Harvey, 2004).

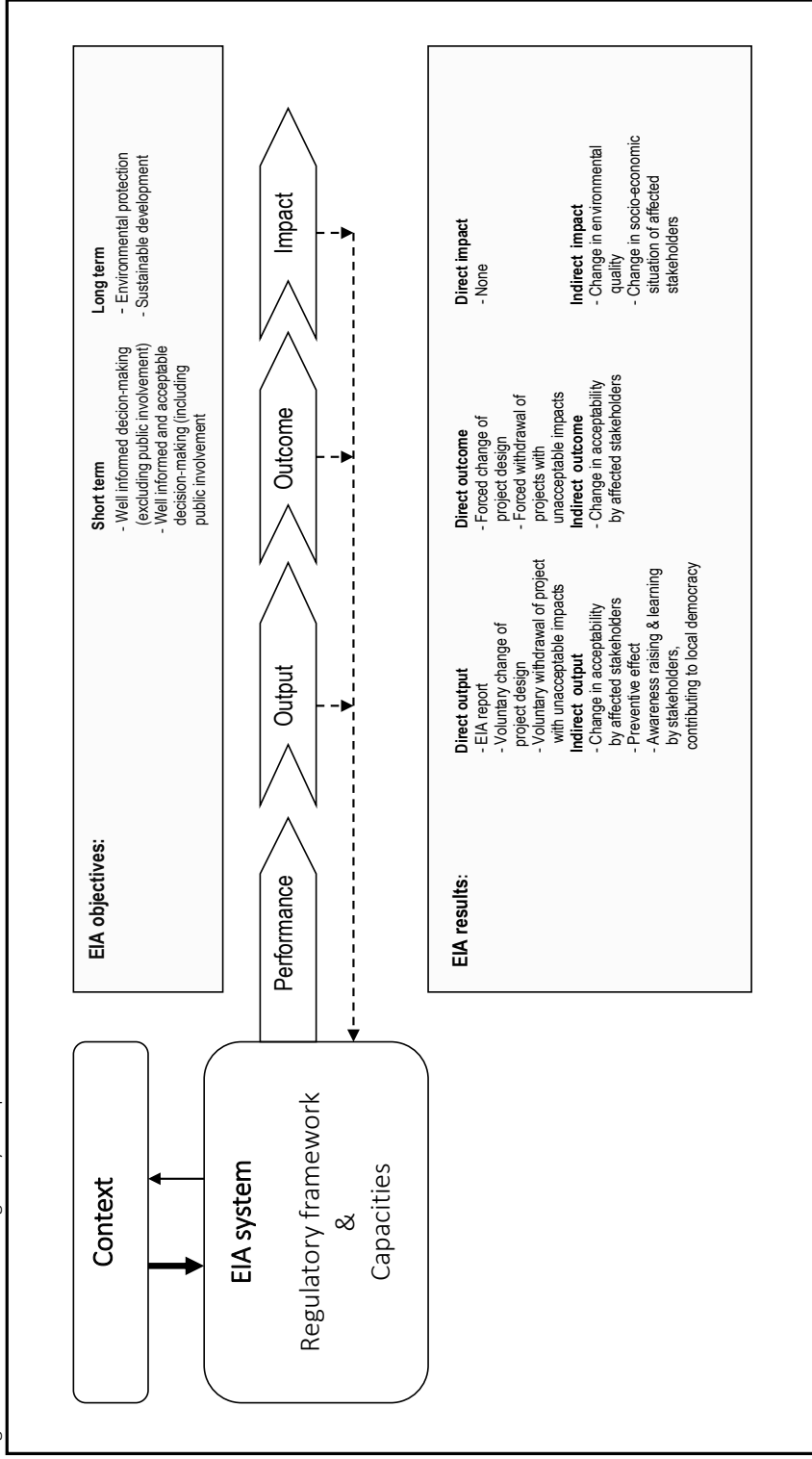
A distinction can be made between long-term and short-term EIA objectives. There is common agreement on environmental protection as a long-term objective and well-informed decision-making as a short-term objective. Views differ on whether EIA should also aim to contribute to sustainable development and whether well-informed decision-making should include or exclude the public. The starting point in the development of our conceptual model is (i) the short-term objective, including public involvement, as EIA system performance can contribute directly to its achievement; (ii) the broad definition of well-informed decision-making, because this offers the opportunity to apply the model for all EIA systems.

### 2.2.2 EIA system performance defined and operationalized

Figure 2.1 operationalises potential forms of EIA system performance. Direct measurable output is of course the EIA report, the voluntary changes made by the proponent during the EIA process and withdrawal of projects due to unacceptable potential environmental impacts. Indirect outputs identified are change in acceptability of the proposed project by the affected people, the preventive effect and learning by stakeholders. Proponents changing the project design prior of the formal start of the EIA process is described as the preventive effect (Heuvelhof and Nauta, 1997; Christensen et al., 2003). In this paper we define EIA system performance as direct output, that is, the delivery of useful knowledge, which is scientifically valid and relevant for debate (Van de Riet, 2003). Van de Riet has identified a number of requirements to produce useful knowledge:

- scientifically sound and reliable analysis;
- validity and transparency of information;
- access to information for all stakeholders;
- public involvement;
- involvement of reliable analysts (executors of EIA study and reviewers);
- a structured search for alternatives to avoid negative impacts and mitigating measures to minimize or compensate those impacts;
- study the expected environmental, health, social and economic impacts for alternatives for affected groups of people.

Figure 2.1: Factors influencing EIA system performance



We add the requirement by Cherp and Antypas (2003) that EIA findings must be presented in a language and manner that policy makers can understand. When all these requirements are met well-informed and acceptable decision-making for EIA can be achieved.

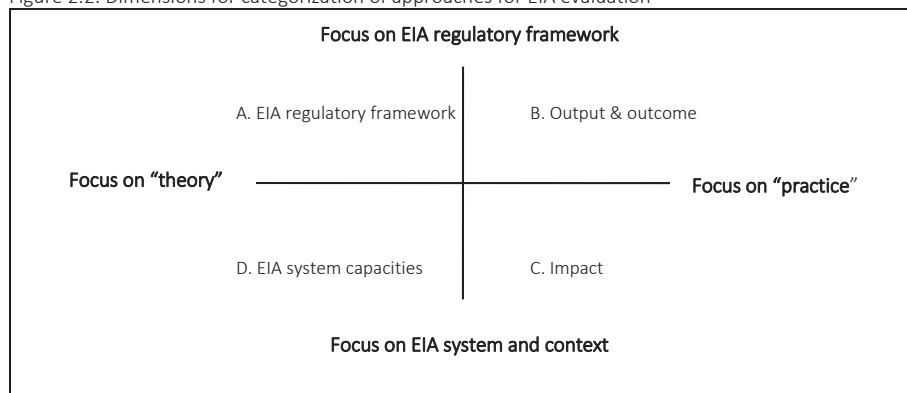
### 2.3 Approaches for EIA system analysis reviewed

Existing frameworks and approaches applied for EIA evaluation are briefly described in this section. The most relevant ones have been selected and will be used as building blocks for the development of our conceptual model.

Frameworks and approaches found in the literature usually focus on either project level or system level. At project level individual EIA projects are evaluated in practice. At system level the performance of one or more of the EIA system components such as the regulatory framework or the capacities of involved organizations are evaluated.

Emmelin (1998a) has studied approaches for EIA performance evaluation at project and system level and concluded that two dimensions and four categories can be distinguished. One dimension is a distinction between theory and practice. The second dimension is a distinction between the structure of the EIA system and the organizational culture of an EIA system and its context. The structure of the EIA system refers to the division of roles and responsibilities as described in the EIA regulatory framework, whereas the organizational culture is important in understanding the forces that enable or constrain good performance. We use the categorization developed by Emmelin and only adapted category four, see figure 2.2. In category four Emmelin referred to the organizational culture and, administrative and planning context to understand EIA system functioning. We argue that more capacities and a wider context influence performance, and therefore replaced by this category with, respectively, capacities and context.

Figure 2.2: Dimensions for categorization of approaches for EIA evaluation



Source: Adapted from Emmelin 1998b.

A. EIA regulatory framework; This category includes evaluations of national EIA regulatory framework against other framework in a neighbouring countries, or with what is considered a good practice EIA regulatory framework (for example those of the World Bank or the European

Union). This approach is mainly used for three purposes: first, for a compliance check of a country with the EIA regulations of international finance institutes (IFI) such as the World Bank, aiming to merge EIA procedures for IFI funded projects in Ghana (World Bank, 2006). Secondly, to identify gaps between the existing regulations and good practice (“ideal EIA model”) in order to further develop the regulations (Wood, 2003). Thirdly, comparative reviews of EIA regulations are made for the purpose of EIA capacity building programmes, monitoring the development or awareness raising. Examples of this latter group are comparative studies that have been made for twenty-one middle east and north African countries (El Fadl and El-Fadel, 2004) and for twelve east and south east Asian countries (World Bank, 2006).

B. Output and outcome of EIA system; A second category of studies evaluate the performance of the EIA system, resulting in concrete and measurable short-term output such as the quality of the EIA process and EIA report and project modifications. The purpose of these evaluations is to improve EIA system performance. Examples are an evaluation of EIA system performance in Sudan by Ali (2007), in Cameroun by Alemagni et al. (2007), Nigeria by Ogunba (2004), in eight EU countries by Barker and Wood (1999), for Germany by Wende (2002), for Denmark by Christensen (2003) and in Greece by Androulidakis (2006). These studies focus primarily on the EIA report quality and assume that an EIA has influence when the EIA report quality is good. The main factors mentioned by Barker and Wood (1999) influencing EIA report quality are: date of the EIA report; legal EIA requirements; existence of scoping and public participation in scoping; experience of proponent, consultant and competent authority; and size of the project. Larger projects appeared to have better quality reports. Wende (2002) concluded that scoping, early participation of stakeholders in the scoping phase, and the degree to which the projects effects are analyzed in the report are by far the most important factors explaining project modifications. Christensen (2003) for Denmark, concluded that public involvement during the decision-making process was the most important factor in change of project design. These studies do not consider the capacities of the EIA system nor the wider context.

C. Impact of EIA; The third category of approaches focuses on the outcome and/or impact of EIA, aiming to identify its long-term objectives. The purpose of these types of studies is to demonstrate the added value of EIA. The effectiveness study of Sadler (1996) is a classic example. For this approach a range of methods are used such as review of the EIA report, case studies, interview of practitioners and context factors are also considered. The study is based primarily on experiences from western countries.

D. EIA system capacities and context; The fourth category is introduced by Emmelin (1998a). Based on a study of EIA systems in four Scandinavian countries, Emmelin (1998b) concluded that EIA systems should be introduced, operationalized and implemented within the context of a fairly well developed environmental administration and in relation to a planning system. Emmelin emphasizes the importance of taking the wider systems context into account to understand EIA system performance and its development. In an evaluation study for East and Southern African countries, Kakonge (1996) shows that a study of the context provides for a better understanding of the causes of ineffective EIA. Cherp (2001), Annandale (2001) and Espinoza and Alzina (2001) mentioned the importance of studying the context in which the EIA system functions to understand its strengths and weaknesses. Cherp (2001) also provides criteria to evaluate the context of an EIA system. The context studies by Emmelin (1998a,b) and Gibson (2002) describe clearly why western countries do not utilize the full capacity of EIA. Botetzagias



(2008) evaluated EIA at sub-national level in Greece and holds the weak capacities of the environmental bureaus in charge of EIA, responsible for its shortcomings. Cherp et al. considered the context and capacities in a range of evaluative studies all dealing with countries in transition (2001, 2003 and 2004).

Categories B, A and D provide guidance on review of, respectively, the regulatory framework, capacities and context. These are the building blocks for the conceptual model that will be described in the next section. Category C falls outside the scope of our model see, figure 2.1.

## 2.4 Factors influencing EIA systems performance: a conceptual model

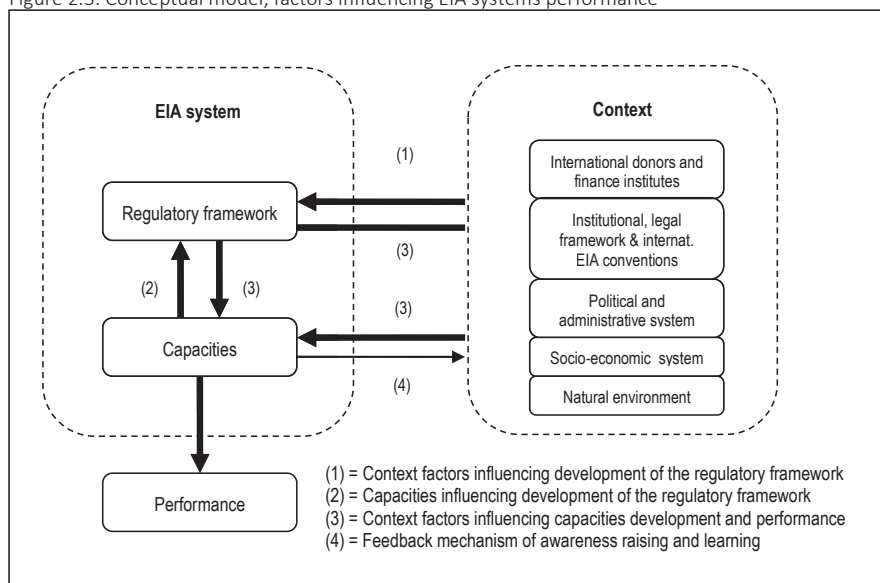
### 2.4.1 Brief description of the model

In this section we develop our conceptual model, which has the following main components or factors influencing EIA system performance, see figure 2.3:

- the EIA regulatory framework and informal rules applied in practice;
- the capacities of the actors and organizations having a formal role in the EIA procedure;
- the context that influences these two components.

Our model is limited to the factors that influence EIA system performance resulting in direct output. It does not therefore provide insight into the factors that explain the outcome or impact of EIA (see figure 2.1). The authors are aware that good EIA system performance is only one of the necessary conditions to achieve the objective(s) of EIA. Another is having an adequate environmental compliance system in place, for example.

Figure 2.3: Conceptual model, factors influencing EIA systems performance



For the development of the conceptual model use is made of the literature on EIA evaluation presented in the previous section, as well as the literature on capacity development and EIA country evaluations carried out by the Netherlands Commission for Environmental Assessment in Georgia, Ghana and Yemen in particular.

Below we will discuss these components and their relationship to EIA system performance in more detail. The influence of the EIA system on the context will not be considered, and readers are referred to Cherp and Antypas (2003) and Taylor (1984).

## 2.4.2 Rules of the game

### Operationalization

The EIA regulatory framework determines the objectives, ambitions and the structure of the EIA system. It determines the organizations and actors that have a formal role in EIA, and their tasks and responsibilities. Informal institutions that have a role must also be considered. Together, these are known as the “rules of the game”, and they have considerable influence on EIA system performance (table 2.1).

Table 2.1: Rules of the game influencing EIA system performance

<b>Rules of the EIA game - regulatory framework &amp; informal rules</b>	
<p><b>EIA legislation</b></p> <ol style="list-style-type: none"> <li>1. Legal status of EIA regulatory framework</li> <li>2. <i>EIA provisions incorporated in relevant related legislation</i></li> <li>3. <i>Participatory development of legislation</i></li> <li>4. <i>Clarity on EIA objectives and scope of study</i></li> <li>5. Provisions for appeal by the developer or the public against decisions</li> <li>6. Legal or procedural specification of time limits</li> <li>7. <i>Provisions aligned with relevant legislation</i></li> <li>8. <i>Legal provisions for funding</i></li> <li>9. <i>Coherence of the EIA regulatory framework</i></li> </ol> <p><b>Structure of key governmental EIA organizations</b></p> <ol style="list-style-type: none"> <li>1. Competent authority for EIA and determination of environmental acceptability</li> <li>2. <i>Responsibility for screening decision</i></li> <li>3. <i>Responsibility for scoping decision</i></li> <li>4. Responsibility for review by separate body</li> <li>5. Specification of sector authorities responsibilities in the EIA process</li> </ol>	<p><b>EIA procedure</b></p> <ol style="list-style-type: none"> <li>1. <i>Client friendliness</i></li> <li>2. Specified screening categories</li> <li>3. Systematic screening approach</li> <li>4. Systematic scoping approach</li> <li>5. <i>Public participation in scoping</i></li> <li>6. Specified EIA report content</li> <li>7. <i>Quality assurance mechanism for EIA drafters</i></li> <li>8. Systematic EIA report review process</li> <li>9. <i>Public participation in reviewing</i></li> <li>10. Systematic decision-making approach</li> <li>11. <i>Requirements for transparency &amp; accountability</i></li> <li>12. <i>Requirement for summary of EIA report</i></li> <li>13. Requirements to consider alternatives</li> <li>14. Requirement for mitigation of impacts</li> <li>15. <i>Requirements for compensation</i></li> <li>16. Requirement for impact monitoring</li> <li>17. Requirements for EMP</li> </ol> <p><b>Informal rules of the EIA game</b></p> <p>The above mentioned procedural measures can be applied to identify informal rules.</p>

Source: Adapted from (Ahmad and Wood 2002) in italic are new sub-criteria we propose.

Table 2.1 describes the main elements of the EIA regulatory framework. These are based on earlier work by Wood (1995) who developed a list of fourteen evaluation criteria for a comparative assessment of eight EIA systems in Western countries. These criteria have been adapted by Glasson and Salvador (2000) Annandale (2001) Ahmad and Wood (2002). These authors consider this list of criteria as an ideal typical and ambitious EIA system, and this is in accordance with the starting point for the development of our model. Therefore, these criteria have been adopted and extended with some new ones (in italics in table 2.1) based on our experience with EIA system evaluation undertaken together with the Caucasus Environmental NGO Network (CENN) in Armenia, Azerbaijan and Georgia (CENN 2004a; 2004b; 2004c). Some important criteria that have been added, are legal provisions for EIA authority funding; clarity regarding the responsibility of the screening and scoping decision; requirements for transparency and accountability; and the recommendation to study the informal rules.

### **EIA regulatory framework**

EIA systems vary between countries but the process is uniform. In principle, four procedural steps have to be taken, resulting in a more or less formal decision. The collective content of these steps, influences EIA system performance:

1. The need for EIA (screening decision);

a. The proponent's needs to be informed both timely and adequately on the likelihood that that an EIA is required. If these requirements are not met, the proponent will ultimately be informed on the need for EIA during environmental licensing. As a consequence this will result in an EIA with little influence on decision-making.

b. The type of activities requiring an EIA, as well as the number of EIAs in a country, are determined by the screening criteria and thresholds. In cases where criteria or thresholds are not clear and legally binding, there is the opportunity for political influence of the screening decision at project level.

c. Screening decision report should be publicly available.

2. The scope of the EIA study and alternatives to be studied (scoping decision);

Scoping provides guidelines on alternatives and impacts that should be studied. This process ideally results in terms of reference for the EIA study that might be approved by the competent authority. This is an important guiding step, because these guidelines can be used as a framework during the review of the EIA report. Therefore, a quality assurance mechanism is required. So that legitimate decisions are arrived at, the public should be involved in the scoping process and therefore they also need to be informed timely and adequately (Barker and Wood, 1999; Wende, 2002). The competent authority should respond to public comments. Public comments and government response should be publicly available. Opportunity for appeal by each stakeholder is considered good practice.

3. Technical assessment of EIA study and report quality (reviewing decision);

a. A mechanism to ensure the quality and independency of the review is necessary to guarantee a scientifically sound and reliable study.

b. Compilation of EIA report and review findings in such a manner that it facilitates the acceptability decision.

c. To arrive at legitimate decisions, the public should be informed timely and adequately on the findings of the EIA study and have the opportunity to respond (Christensen, 2003). Competent

authorities should respond to public comments. Public comments and government response should be publicly available. Opportunity for appeal by each stakeholder is considered good practice.

4. Environmental approval or clearance for environmental licensing or permission (acceptability decision); This step should not be part of the EIA procedure although it often is; it is considered good practice to separate the technical decision on the quality of the report (by technical experts) from the political decision on acceptability of the project (by decision-makers).

### **Informal rules**

The informal rules can be as important as the formal rules in EIA system performance: an example is scoping. In Georgia until 2004, scoping was not obligatory; however, it was practice that the investor and the key EIA organization met to agree on the terms of reference for EIA (CENN, 2004a).

## **2.4.3 Capacities of the actors in the EIA system**

### **Operationalization**

The capacities of the actors and organizations participating in an EIA system determine to a great extent whether the objectives and ambitions set in the regulatory framework will be achieved (table 2.2). Four main groups of organizations or actors are distinguished:

- the proponent or developer of the project subject to EIA. This can be a private investor or an authority;
- knowledge organizations such as consultant or university that execute EIA studies on behalf of the proponent;
- the key government organizations (for instance of competent authorities and the authority responsible for reviewing);
- CSOs or individuals involved in EIA.

Lusthaus et al. (2002) define organizational capacity as the organizational and technical ability that enables organizations to carry out functions and achieve their development objectives over time. Seven interrelated sub-capacities underlie organizations' performance: leadership, organizational structure, human resources, financial- and process management, infrastructure and inter-organizational linkages. Baser et al. (2008) carried out a comparative study on the factors that influence performance of organizations and networks based on eighteen cases world-wide. Baser et al. concluded that the study of the 'hard' aspects of organizational capacity such as deliverables and technical skills and soft aspects such as leadership and an incentives system, can assist organizations in understanding their functioning. What are the factors that drive performance? According to Lusthaus et al. (2002), each organization is driven by a combination of experience, a vision of the future, some sense of shared values and an incentives system to discipline or reward its staff.

### **Capacities of government organizations**

To facilitate the production of useful knowledge the following requirements should be met by the involved key EIA government organizations: leadership, autonomy of the three main decisions, and skilled and motivated staff and experts.

Table 2.2: Capacities of actors and organizations influencing EIA system performance

Capacities of actors and organizations	
<p><b>1. EIA authorities</b></p> <p><b>1.1 Leadership</b>            1. Leadership and autonomy            2. Organizational culture</p> <p><b>1.2 Structure</b>            1. Ability to learn, adapt and change            2. Division of responsibilities</p> <p><b>1.3 Human resources</b>            1. Number of staff            2. Skills of staff (client friendliness)            3. Incentives and rewarding system</p> <p><b>1.4 Financial resources</b>            1. Technical means            2. Financial sustainability</p> <p><b>1.5 Inter-organizational linkages</b>            1. Integrity of the organization, its staff and leadership            2. Operational credibility            3. Co-operation with relevant stakeholders</p>	<p><b>2. Proponent</b></p> <p>1. Respect rule of law, integrity of EIA authority            2. Open attitude to change            3. Willingness to pay for EIA</p> <p><b>3. Knowledge organizations</b></p> <p>1. Systematic development of knowledge            2. Access to information            3. Skills            4. Knowledge infrastructure</p> <p><b>4. Civil society</b></p> <p>1. Leadership and autonomy            2. Skills            3. Financial means            4. Alliances with international CSOs</p>

Source: Lusthaus et al. (2002) and Baser et al. (2008).

Leadership is the process through which leaders influence the attitudes, behaviour and values of others towards organizational culture (Vecchio, 1995). Leadership in a key EIA organization means the courage to take and keep an expert position, and to secure the public interest, despite political pressure to adapt. The leaders of EPA in Ghana, for example, are considered crucial for good development and performance of EIA (World Bank, 2007). The person(s) responsible for the three key decisions in the EIA process - screening, scoping and reviewing - have heavy responsibility. In many developing countries they are subject to political pressure. The checks and balances to secure the position of this person(s) determine the autonomy of the organization(s) resulting in a reliable analysis.

Structure and human resources; Motivation, skills and the ability to learn and adapt to new situations are important. The quality and the number of staff are crucial because they are executing day-to-day tasks concerning EIA. As part of this task the proponent should be informed in time about the EIA procedure and requirements (client friendliness). However, performance is often weak due to insufficiently skilled staff, who are often unmotivated as a result of reduced salary payments. Motivation drives people, therefore an evaluation and incentives system is important. Frequently the staff of key government organizations do not earn enough to make a living and therefore try to earn additional income. In EIA, management follows different strategies. The organizational culture determines which strategies are followed. Staff are sent abroad for training and conferences, receiving daily subsistence allowances. Often these allowances are the incentive: they could be as high as a weekly or monthly income to someone from a developing country. As a result, staff are sent who do not need that particular training (World Bank, 2008). Staff get the opportunity to get involved in projects paid for by donors, or they

work fewer hours and do consultancy activities, which sometimes conflict with their day-to-day responsibilities. This makes these organizations vulnerable to corruption, especially when checks and balances are not well-established. Better payments outside the sector result in high staff turnover. In many developing countries the policy for salaries and recruitment cannot be influenced by the management of a key EIA organization. Their lack of motivation and skills influences the management of the EIA process and the quality of the main decisions, resulting in weak performance. Until 2004, corruption by the EIA department in Georgia was widespread due to low salaries, limited transparency and weak leadership (CENN, 2004a).

Financial resources; Each organization requires funds to operate. Once the funding mechanism is in place, it affects an organization's performance in two ways. Firstly, financial sustainability is necessary to carry out tasks and invest in human resources. Secondly, key EIA organizations often generate their own income from payments by proponents for their services. However, the checks and balances determine how vulnerable an organization becomes in terms of corruption, influencing its performance.

Inter-organizational linkages; The authority responsible for EIA relies on co-operation with other authorities for timely provision of information on the start of the project. Such co-operation is on the one hand dependent on the alignment of relevant regulatory frameworks and on the other hand on the operational credibility and political power of the EIA authority.

### **Capacities of the proponent**

A proponent who wants to increase public acceptability of the project and show corporate environmental and social responsibility to clients can make optimal use of EIA. In that case the proponent should have an open attitude towards changes to the project's design during the EIA process, should allocate sufficient funds and respect the rule of law.

### **Capacities of knowledge organizations**

Consultants or universities are organizations that carry out EIA studies on behalf of the proponent. The quality of these studies is determined by their skills, access to knowledge, funds allocated and time available. Therefore, quality assurance mechanisms are developed and included in the regulatory framework. For example, in Ghana and Yemen a new system has been developed that allows only certified EIA practitioners to carry out EIA studies.

### **Capacities of the civil society**

CSOs can have different roles: as providers of information, as interest groups (e.g. for conservation of biodiversity), as watchdogs monitoring the EIA process and as pressure group urging the decision-maker to follow the procedure and influence the behaviour of the proponent. They can carry out these roles by applying the EIA regulatory framework and by cooperating with other institutions. Access to information, accountable decision-making and access to justice are requirements for an active involvement of the civil society to arrive at legitimate and acceptable decisions. Leadership, motivation, skills and available funds determine the performance of CSOs.

## 2.4.4 Context factors

### Operationalization of the context factors

In the EIA literature, no commonly accepted framework to study context factors has been agreed upon. Kakonge (1996), Cherp (2001), Annandale (2001) and Mao and Hills (2002) have identified context factors that influence the development and performance of EIA systems, such as the political system, the socio-economic situation, the state of the environment and the institutional / legal framework. These factors have been elaborated, see table 2.3. They can - but do not necessarily - influence the development and performance of an EIA system.

Table 2.3: Context factors influencing EIA system performance

Context factors	
<p><b>International donors and finance institutes</b></p> <p><b>Legal framework</b></p> <ol style="list-style-type: none"> <li>1. International conventions on EIA</li> <li>2. Environmental legislation               <ul style="list-style-type: none"> <li>- Environmental standards</li> <li>- Regulatory framework for environmental licensing</li> <li>- Legislation on environmental compliance</li> </ul> </li> <li>3. Sector legislation of respective ministries</li> <li>4. Legislation on civil society rights               <ul style="list-style-type: none"> <li>- Legislation on access to information and justice</li> <li>- Legislation on role of public in decision-making</li> <li>- Legislation on transparency and accountability in decision-making</li> </ul> </li> </ol>	<p><b>Political / administrative system</b></p> <ol style="list-style-type: none"> <li>1. Type of political system</li> <li>2. Division of powers between executive, legislative and judiciary</li> <li>3. Independency of judiciary</li> <li>4. Free flow of information</li> </ol> <p><b>Socio-economic system</b></p> <ol style="list-style-type: none"> <li>1. Economic situation</li> <li>2. Culture concerning participation</li> <li>3. Knowledge infrastructure</li> </ol> <p><b>Natural environment</b></p> <ol style="list-style-type: none"> <li>1. State of the environment</li> <li>2. Environmental problems and disasters</li> </ol>

Source: Based on Kakonge (1996), Cherp (2001), Annandale (2001).

### Context factors influencing development and performance of the regulatory framework

The development of the regulatory framework can be influenced by different authorities, the legislative, private sector, civil society representatives and international donors. For instance, in Georgia since the Rose revolution in 2003 the Minister for Economic Affairs has driven the development of a new, less ambitious EIA regulatory framework as part of a national policy to improve the investment climate and weaken environmental conditions<sup>5</sup>. Which actors are involved and their influence depends greatly on the *political system*. In democratic systems it is common practice for the main stakeholders to be involved. In more authoritarian systems, e.g. in Uzbekistan, civil society plays hardly any role (Khusnutdinova, 2004).

Each country has a position, role and interest in the geopolitical world, which influences their behaviour resulting in signing, ratifying and implementing of *international EIA conventions*. There are three international conventions that are relevant for the regulatory framework (as of September 2008):

- The Convention on EIA in a trans-boundary context, Espoo convention (1991), ratified by 30 mainly European countries;
- The Convention on Biodiversity (1992) adopted guidelines to integrate biodiversity issues in EIA (2006) ratified by 168 countries;

<sup>5</sup> Evaluation of EIA strengthening program executed by the NCEA in the period 2004–2005.

- The Aarhus Convention (1998) on access to information, public participation in decision-making and access to justice in environmental matters is ratified by 40, mainly European and Central Asian countries.

Incorporation of the convention requirements in the regulatory framework influences the setting of objectives and ambitions. The executive and legislative are primarily responsible for translating the requirements into the regulatory framework. In practice, however, international donors support incorporation.

The influence of *international donors* on the development of an EIA regulatory framework has been considerable. In countries such as Yemen (van Loon, 2008), Lebanon (El-Fadel et al., 2000), Lesotho (Mokhele and Diab, 2001) and Mauritius (Ramjeawon and Beedassy, 2004) donors have introduced EIA regulatory frameworks based on ones from western democratic countries or the World Bank EIA framework, without sufficiently considering the specific context and capacities of the country. This often resulted in the installation of ambitious EIA systems, demanding capacities that could not be developed in a short time. Yemen is an example where Dutch consultants, funded by the Netherlands, developed an EIA system based on a combination of the Canadian and Dutch systems (van Loon, 2008). The above-mentioned countries adopted these frameworks unquestioningly, because they had little knowledge of EIA. In addition, vulnerable environmental departments were often less critical because they were financially dependent on donors for implementation of their activities and accepted the donor condition to introduce a “good-practice” EIA framework.

The *legal context* influences the performance of the regulatory framework by the key government organizations; two examples are given. Firstly, alignment of EIA with other relevant licensing procedures of line ministries is an important requirement for a well-timed start of the EIA procedure. When it starts too late the potential to achieve direct output will decrease. In addition to the formal rules for alignment of procedures, informal rules of co-operation between government organizations based on personal contacts can also play an important role for a well-timed start of EIA. Secondly, an important factor influencing the quality of EIA is the availability of *environmental standards* used as a benchmark. In Yemen *environmental standards* are incomplete, hampering adequate EIA review (Van Loon, 2008).

The *private sector* plays an important role in developing the EIA regulatory framework via formal rules when representatives such as branch organizations are invited in the consultation process. Via informal channels company owners can lobby to influence EIA legislation. In Georgia, Armenia and Yemen businessman have direct access to the key actors in decision-making. Political pressure is used for example to increase thresholds for EIA (screening requirements), resulting in fewer EIAs.

CSOs can influence the development of the EIA regulatory framework: how successful they are depends on the legal rights of those organizations in a country and on their capacity. Alliances with international CSOs and donor support can increase their influence.

The *state of the environment* in a country plays a role in the development of the regulatory framework. Natural as well as man-made environmental disasters causing loss of life, raise the awareness of all major stakeholders, i.e. decision-makers, civil society and the private sector,



to take care of the environment. An environmental disaster may act as a trigger for change. This often results in a temporary or structural change in the environmental standards and performance in the affected sector. Mega-projects causing significant environmental and social impacts, such as the construction of large dams, can also have an impact on the development of the regulatory framework. In Ghana, mining caused serious environmental pollution affecting human health and livelihoods. Affected people took up arms and forced the government to stop pollution. These developments supported EPA to establish an EIA regulatory framework in 1994 (Appiah-Opuku, 2001).

## **Context factors influencing development and performance of capacities**

### **Capacities of the EIA authorities**

Performance of the authorities can be influenced by the following context factors. Firstly, one of the mechanisms to secure the autonomy of EIA authorities is a non-political appointment procedure. In countries where heads of agencies, responsible for EIA, are politically appointed the independence of this position seems less secure, leading to a greater risk of political influence on assessments. Secondly, in most developing countries national policies for salaries and recruitment of government staff are inflexible and the responsibility of another authority. As a consequence, non-functioning employees cannot easily be replaced. Thirdly, the amount of funds allocated to the EIA authorities has a direct effect on the number of staff that can be recruited.

The development of the capacities of environmental authorities do not rank high on the political agenda of many countries. Strong and autonomous environmental authorities are generally considered as barriers to economic growth (UNEP, 2004).

### **Capacities of the proponent**

The conduct of the proponent concerning EIA will be influenced by a combination of context factors: performance of the environmental compliance system (rule of law), opportunity to influence decisions via informal rules and the capacity of civil society to influence the proponent. Proponents who have experience with EIAs followed by adequate environmental compliance, generally take it more seriously - the preventive effect -.

### **Capacities of knowledge organizations**

Apart from internal organizational factors, the performance of organizations producing useful knowledge for decision-making is determined by access to and availability of knowledge provided by the knowledge infrastructure of a country. The knowledge infrastructure consists of the scientific community and government agencies involved in gathering, analysing and storing information in a systematic way as well as educating future experts. The capacity of the knowledge infrastructure, with organizations that are able to produce useful knowledge for decision-making, is influenced by the policy of the government and the available resources for development.

### **Capacities of the civil society**

The development of civil society's capacities is influenced by the legal-, political- and the socio-economic systems. Conditions for public involvement in decision-making are the civil rights to organize, to demonstrate, and to have freedom of speech. The status of these rights is the

direct result of the political system. If civil society has obtained these rights but the judiciary is not independent and does not have the capacity to deal with environmental cases, civil society cannot urge its rights. In countries where these rights are secured, civil society often does not make use of them. Kakonge (1996), in a study on public participation in EIA in sub-Saharan Africa, argues that poor people are driven by day-to-day survival and tend to tolerate a highly polluted environment without complaint. Purnama (2003) stated that public involvement in EIA is limited because there is no culture of participation in public decision-making in Indonesia, which is the result of a historical processes characterized, for example, by repressive political regimes. As a result, EIA does not contribute to legitimate and acceptable decisions.

## 2.5 Conclusions

In this paper we describe a conceptual model that identifies the factors influencing EIA system performance in developing countries. Performance is defined as the output that contributes to well-informed decision-making and that might influence on decision-making identified as outcome. The main components of the EIA system are the regulatory framework and the capacities that are influenced by the context in two ways: via the development of the regulatory framework and via the development of capacities of involved EIA authorities, knowledge organizations, proponents and civil society. It is expected that the factors identified in the conceptual model will influence EIA system performance. Of course, the importance of the factors differs by country owing to differences in the capacities, application of the rules of the game and the context influencing those components.

The model is meant to be applied in developing countries. However, we think that it could be useful to understand the performance of EIA systems in developed countries as well. Therefore, we suggest to carrying out empirical research that can contribute towards further development of this model. Comparative country studies can provide insight in the specific role that context factors have on EIA system performance. This is important for the next step: improving EIA systems performance.

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[www.cbd.int](http://www.cbd.int) Convention on biological diversity.

[www.unece.org/env/eia/](http://www.unece.org/env/eia/) Convention on EIA in a trans-boundary context (Espoo convention).

[www.unece.org/env/pp](http://www.unece.org/env/pp) Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters.



## Chapter 3: An analysis framework for characterizing and explaining development of EIA legislation in developing countries: illustrated for Georgia, Ghana and Yemen<sup>6</sup>

### Abstract

Actors in the field of international development co-operation supporting the development of EIA legislation in developing countries often do not achieve the results envisaged. The performance of EIA in these countries often remains weak. One reason, we assume, is that often those actors support the establishment of overly ambitious EIA legislation that cannot achieve its objectives in the light of constraining contexts. To provide more effective support we need to better understand the enabling and constraining contextual factors that influence the development of EIA legislation and to which support actors should align itself. In this article a new analysis framework for classifying, characterizing and explaining the development of EIA legislation is described, measured in terms of ambition levels. Ambitions are defined as intentions the EIA authorities aim to fulfill, expressed in formal EIA legislation. Three country cases, Yemen, Georgia and Ghana are used to illustrate the usefulness of our framework and as a first test to refine the framework. We have formulated the following five hypotheses that complement and refine our analysis framework. One, EIA legislation may develop multilinear in terms of ambition levels. Two, ambitions in EIA legislation seem to be influenced to a great extent by the power and capacity of, on the one hand, the environmental authorities supporting EIA and, on the other hand, the sector authorities hindering the development of EIA. Three, the political system is the most important context factor influencing the rules of policy-making and the power of the different actors involved. Four, the importance of context factors on the development of ambitions is dependent on the phase of EIA system development. Five, some ambitions seems to be influenced by particular factors; for instance the ambitions for the object of study seems to be influenced by the level of environmental awareness of the sector ministries and parliament.

The analysis framework may also assist actors involved in the development of EIA legislation in setting ambitions for EIA legislation that are feasible within the context in which it will be developed and implemented. Application of a country-specific EIA model would seem to be the preferred model to develop EIA legislation because by taking capacities of actors and context factors as a starting point, it offers more potential to well-performing EIA systems.

Key words: EIA system development, EIA legislation, analysis framework, Georgia, Ghana, Yemen.

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### 3.1 Introduction

The International Association for Impact Assessment (IAIA, 1999) has adopted a best practice EIA model that is promoted as a standard for EIA system development by the IAIA as well as prominent scholars including for instance Wood (2003). This so-called IAIA model considers sustainable development as a long-term objective, and well-informed and participatory decision-making as short-term objectives of EIA systems<sup>7</sup>. Principles of this model are based on EIA systems in western democratic countries. Actors in the field of international development cooperation such as the World Bank and the United Nations Environmental Program<sup>8</sup> (2004) usually employ this IAIA model as a starting point for the development of EIA legislation. As a consequence it seems that these actors tend to underestimate the influence of the context of a country in which they intervene, or at least seem to assume that the context can be influenced. UNEP (2004) for instance states that EIA is an important tool in the development of good governance and democracy; two characteristics of the political / administrative system that we consider as contextual factors. This illustrates that UNEP seems to assume that EIA can influence the context. A second implicit assumption is that the evolution of EIA legislation evolves unilinearly (Wood, 1995). This means that key dimensions of EIA legislation such as the object of study (e.g. aspects to be studied in EIA and the type of decisions subject to EIA) and mechanisms to assure the quality of information will logically develop along pre-defined stages from low or limited to high or comprehensive.

In this paper we criticize these assumptions, arguing that the country-specific context should be the starting point of EIA system development. In this approach the IAIA model can be used as a long term ideal but not necessarily as the starting point. In previous studies (Runhaar and Driessen, 2007; Kolhoff et al., 2009; Van Loon et al., 2010), building on the work of Cherp (2001) and Cherp and Antypas (2003), we argued that context characteristics, such as the political system or the economic situation, and the capacities of the key actors are the most important factors explaining the development of EIA legislation. As a consequence we think that EIA systems may develop along a number of dimensions in multilinear rather than in unilinear ways, depending on (changes in) capacities of key actors and context. This implies that EIA system dimensions will not necessarily develop simultaneously in one direction but that some dimensions may develop from less ambitious to more ambitious, whereas other dimensions express a contrary development. Interventions in EIA system development that are not congruent with the context run the risk of being unfeasible and not yielding the expected results. EIA system development that starts from the country-specific context and capacities that determine the opportunities and the constraints for establishing a certain ambition level might result in a less ambitious EIA system, but that system, in principle, can still perform well.

This article provides an analysis framework to illustrate and tentatively explain the developments of EIA legislation, measured in terms of ambition levels. Ambitions are defined as intentions the EIA authorities aim to fulfill, expressed in formal EIA legislation.

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<sup>7</sup> The IAIA is the global member organization for impact assessment practitioners. They have developed and adopted the EIA best practice principles aiming to be used as reference by professionals involved in EIA.

<sup>8</sup> UNEP is a normative technical UN Agency and derives its mandate from the United Nations General Assembly (UNGA) Resolution 2997 of 1972.



This understanding can be helpful for actors in the field of development co-operation and other actors involved in, and hence their knowledge of, the development of EIA legislation that is *feasible* within the national context. EIA legislation is defined as all EIA-related policies, laws and regulations approved by the legislative and or executive powers. Firstly, we present an analysis framework that categorizes the EIA ambitions. This framework is based on literature and has been reviewed by a panel of Dutch experts working in the field of EIA system development. Subsequently, this framework is applied in Yemen, Georgia and Ghana with the purpose of illustrating and refining the analysis framework, rather than making an in-depth comparative assessment between those countries. These three countries have been selected because extensive information on the development of EIA legislation through access to key actors and key documents was available over a period of many years. This was due to the fact that the lead author in his function as advisor at the Netherlands Commission for Environmental Assessment has been working in those countries for many years. The consequence of this selection is that those countries are illustrative but not representative for the development of EIA legislation in low and middle income countries.

The development of EIA legislation in these countries is divided into phases. Phases have been demarcated on the basis of the introduction of or major change in EIA legislation, approved by the legislative or executive powers. In order to identify and explain the factors influencing the development of EIA legislation a comparative analysis was made of the three countries in section six. For this purpose, we built on an earlier paper (Kolhoff et al., 2009) in which we proposed a set of explanatory context factors and key actors, each with their specific capacities, that have not yet been validated thus far.

Legal documents have been used to describe the characteristics of the EIA legislation for each country. Additional data for the three countries have been collected through semi-structured interviews with 13 primarily high-level representatives of the national environmental protection authority, and who were equally divided over the countries holding high level positions, (see table 3.1).

Table 3.1 Characteristics of respondents (N = 13\*)

Position of respondents	Former	Present
Decision-maker		
Minister or Dep. Minister of Environment; Director or Dep. Director of EPA or EPA	5	3
High level staff		
Head or staff member at EIA department in MoE, EPA or EPC; Head or Dep. Head of Intern. Department at MoE	2	4
Other		
NGO director		1

\*) In total 13 individuals have been interviewed, two persons where interviewed during different moments in time keeping different positions, therefore the number of respondents in the table is 15.

In this article, we will refer to one of the two categories, “decision-makers” or “high-level staff” in order to secure anonymity. In the period 2004 – 2010 most of the respondents were interviewed several times. In Georgia, a director of a NGO was also interviewed because the government had asked this NGO to draft a new EIA law. The main indicator for selecting those respondents was their involvement in and hence their knowledge of the development of EIA

legislation. For all countries we have interviewed nearly all persons involved in the relatively small teams that were involved in developing, negotiating and lobbying of EIA legislation. Our findings have been verified through discussions with the people who have been interviewed before in the three countries.

## 3.2 A framework for characterizing and explaining the development of EIA legislation

### 3.2.1 Characterizing the development of EIA legislation

In order to get a better insight into the development of EIA ambitions (as laid down in EIA legislation), we have developed an analysis framework based on objectives and performance indicators that are often employed in the scientific literature on EIA.

In the literature three main EIA objectives can be distinguished, namely environmental protection versus sustainable development as a long-term objective, and informed and participatory decision-making as the two short-term objectives (Caldwell 1989; Meredith 1991; Therivel et al. 1992; 1993; Smith 1993; Erickson 1994; Mostert 1995; Wiesner 1995; Wood 1995; Glasson et al. 1996; Sadler 1996; Olokesusi 1998; Purnama 2003; Ahammed & Harvey 2004; Doelle & Sinclair, 2006; Nooteboom 2007, Kolhoff et al. 2009).

Often-employed frameworks for EIA system performance evaluation have been developed by Wood (1995), Fuller (1999) and Ahmad and Wood (2002). Ahmad and Wood (2002) have developed the most extensive framework in which they identify 24 indicators divided into four categories; EIA legislation, EIA process, EIA administration and foundation measures. For the development of our framework we used eight of their indicators, all derived from the categories EIA legislation and EIA process, that have been specified in more detail and combined or split. We combined three indicators on 'mitigation', 'alternatives' and 'monitoring' into one indicator: 'requirements studied in EIA influencing expected impacts'. The indicator 'screening categories' have been elaborated into two separate indicators: 'type of decision subject to EIA' and 'investments subject to EIA'. The indicator of 'public participation in EIA process' has been elaborated into three separate indicators in our framework: 'stakeholders involved', 'access to information' and the 'accountability mechanisms related to government responsiveness'. The remaining three indicators, 'scoping', 'reviewing' and 'opportunity for appeal' have been specified in more detail respectively: 'quality mechanisms for scoping (quality and independence of the process and quality of the consultants) and for reviewing' (quality and independence of the process and coherence between review and project approval) and for 'access to justice' (opportunity for appeal and associated costs). In addition, we have introduced two new indicators that we have described in Kolhoff et al. (2009): 'aspects studied in EIA' and 'timely start of EIA procedure'. Adaptation of the framework developed by Ahmad and Wood (2002) is in our view necessary in order to be able to identify key differences in ambition level.

The indicators selected in our framework, 11 in total, have been clustered into three main categories: object of study, quality of information for decision-making and accountability of decision-making. These categories are based upon the aforementioned and commonly recognized three main objectives of EIA. For each indicator in the framework we have identified four different ambition levels, ranging from 'low', 'limited', 'high' to 'comprehensive'. This division into

four categories allows for a nuanced assessment of developments in EIA ambitions. For the identification of the four defined ambition levels for each of the 11 indicators, use is made of descriptions of national EIA systems by Petts (1999) and the Netherlands Commission for Environmental Assessment (2011).

Our analysis framework provides insight into and measures (i) what ambitions a country wants to achieve with EIA, as reflected in legislation and (ii) how these ambitions have developed over time. It is based on the assumption that each country has a unique context and capacities providing opportunities and constraints for the development of EIA ambitions as reflected in the EIA legislation (table 3.2).

### **Object of study**

In this category four indicators have been selected that determine the objects of study in EIA as well as the decisions that are subject to EIA;

- the aspects studied in EIA, ranging from only considering environmental aspects towards studying environmental, social and economic aspects (Kornov et al., 2005; Nootboom, 2007);
- the type of decisions that are subject to EIA, ranging from only projects towards project, plans and policies. In the impact assessment literature strategic environmental assessment (SEA) is commonly but not exclusively used for plans and policies. We decided to use the term EIA instead of SEA and indicate what type of decisions are subject to EIA in each of the four categories (Ahmad and Wood, 2002; Fischer and Gazzola, 2006);
- the type of investor of the project that is subject to EIA. We distinguish between projects initiated by the private and public sector, as well as the coverage of projects subject to EIA (Cherp, 2001);
- the requirements that might have an influence on the expected impacts of the project and that need to be studied in EIA. We have distinguished four possible sets of requirements: mitigating measures, alternatives, compensation measures and environmental management plan<sup>9</sup> (Ahmad and Wood, 2002; Morrison-Saunders and Arts, 2004).

### **Quality of information for decision-making**

The quality of information for decision-making is about the (predominantly legal) mechanisms in place to ensure that information presented in the EIA report is valid, relevant and timely. It is about the key authority that informs the proponent about the required information and the latter, often supported by a consultant, provides the information asked for in the EIA. We have selected the following five indicators:

- the quality and independence of the scoping process. We consider the independence of the experts of even more importance than the expertise of experts because in developing countries the opportunity to compromise is (unfortunately) a common phenomenon. Therefore, we categorize 'no formal scoping' as the lowest and scoping by independent experts as the highest ambition level (cf. Ahmad and Wood, 2002);
- the quality of consultants, ranging from no mechanism in place, via listing, certification of consultants and in addition a competitive open market mechanism for the highest ambition level (Morrison-Saunders, 2001);

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<sup>9</sup> These requirements belong to different steps in the EIA procedure but in this framework they reflect the differences in ambition to achieve the objective environmental protection.

- the quality and independence of the review process, ranging from reviewing by experts from the authority towards reviewing by independent experts. Independency during scoping and reviewing refers to the degree of external influence that can be exercised on the key EIA authorities. Literature suggests a positive correlation between independence of scoping and reviewing and validity of the information presented in the EIA (e.g. Ahmad and Wood, 2002);
- coherence between the review and approval of the EIA report and project. Two categories are distinguished: combined approval of the EIA report (technical review) and the project (political decision) at once by the reviewers, or more ambitious, separate approval of the EIA report (technical review) by the reviewers and project approval (political decision) by a decision-maker;
- timely start of EIA procedure; The earlier EIA starts the more influence it can have (Cashmore, 2004). The formal linkages between the EIA procedure and the procedure of the sector ministries (responsible for e.g. mining or construction) influence to a great extent at what moment in the project decision-making cycle EIA is started. An EIA procedure can be isolated or can be integrated into sector procedures.

### **Accountability of decision-making**

Accountability of decision-making is about the extent to which civil society gets the opportunity to be involved in the EIA process. It is about the relation between on the one hand the proponent and key EIA authority, and on the other hand civil society, and what mechanisms are in place to secure the rights of civil society to be involved in the EIA process. We have selected the following four indicators:

- type of stakeholders allowed to be involved, ranging from only government staff towards rights of individual citizens to be involved (Ahmad and Wood, 2002);
- access to information by civil society, ranging from no provisions via limited access, widely available, towards active distribution via www (Kakonge, 1996);
- government responsiveness, is about to what extent the responsible authority shows commitment and communicates with the public. The level of responsiveness, we distinguish, can range from no provisions to well justified decisions (Cherp, 2001; Doelle and Sinclair, 2006);
- access to justice is about the opportunity for appeal by the affected stakeholder and associated costs. We distinguish between three categories of appeal: administrative - , judicial/contentious appeal procedure, and mediation (Ahmad and Wood, 2002; Doelle and Sinclair, 2006).

Table 3.2: Analysis framework characterizing the development of EIA ambitions, as reflected in EIA legislation

A. Object of study	limited ←————→ comprehensive			
1. Aspects studied in EIA	1.1 Environment	1.2 Environment & health	1.3 Environment, health & social aspects	1.4 Environment, health & social and economic aspects
2. Type and number of decisions subject to EIA	2.1 Projects with limited negative environmental impacts	2.2 Projects with significant negative environmental impacts	2.3 Projects, plans and programmes with significant negative environ. impacts	2.4 Projects, plans, programmes and policies with significant negative environ. impacts
3. Investments or projects subject to EIA: a. Private sector b. Public sector	3.1 a. Projects in some sectors b. None	3.2 a. All private sector projects b. None	3.3 a. All private sector projects b. Projects in some public sectors	3.4 a. All private sector projects b. Projects in all public sectors
4. Measures studied in EIA influencing expected impacts	4.1 Mitigating measures considered from environ. perspective	4.2 Alternatives (design), mitigating measures considered from environ. perspective	4.3 Alternatives (design, site, routing) + compensation considered from environmental perspective	4.4 Alternatives + compensation considered from environ., social and econ. perspective; EMP
B. Quality of information for decision-making	low ←————→ high			
1. Quality mechanisms: a. Scoping by b. Quality of consultants.	1.1a. No formal scoping b. No mechanism in place	1.2a. Experts of environmental authorities b. List of consultants	1.3a. Experts from in- and outside authorities b. Certification of consultants	1.4a. Independent experts b. Certification of consultants or a competitive market
2. Quality mechanism: reviewing by	2.1 Only experts of sector authorities	2.2 Experts of environmental authorities	2.3 Experts from in- and outside authorities	2.4 Independent experts
3. Timely start of EIA procedure	3.1 No alignment	3.2 Alignment with some sector procedures	3.3 Alignment with most sector procedures	3.4 Full timely alignment with sector procedures
C. Accountability of decision-making	low ←————→ high			
1. Stakeholders involved	1.1 No civil society representatives, only authorities	1.2 Authorities, experts	1.3 Authorities, experts, NGOs	1.4 Authorities, experts, NGOs and citizens
2. Access to information a. readability b. physical / costs	2.1 No provisions	2.2a. Technical b. Available at some sites	2.3a. Technical b. Widely available	2.4a. User friendly b. Active distribution e.g. via www
3. Accountability mechanisms: - responsiveness	3.1 No provisions, or responsibility of proponent	3.2 Taking note of comments, decisions not justified	3.3 Response to comments, decisions not justified	3.4 Decisions justified
4. Accountability mechanisms: - access to justice; legal right and costs	4.1 No provisions	4.2 By proponent some groups, against high costs	4.3 By proponent groups and individuals, moderate to high costs	4.4 By proponent groups and individuals, moderate to low costs

We would like to acknowledge that for three out of the four indicators, the score of the first cell is the same, namely no provisions. This means that we consider an EIA system without provisions for involving civil society as also an EIA system, because such a system can still contribute to the achievement of the other two objectives namely, informed decision-making versus environmental protection and sustainable development.

We emphasize that this framework is not normative and one should read the table horizontally and not vertically. In theory, all combinations of options for the 11 indicators are possible. However, we assume that some combinations are more logical and feasible in practice than others.

### 3.2.2 Influence of context factors and key actors

In Kolhoff et al. (2009) we have claimed that the development of EIA legislation can be influenced by a number of key actors, each with their specific capacities and context factors as listed in table 3.3. For an explanation of those factors we refer to Kolhoff et al. (2009). The influence of these factors on the development of EIA ambitions, as far as laid down in the EIA legislation, will be validated for the three identified countries in the following sections.

Table 3.3: Factors influencing development of EIA legislation

Key actors:	Context factors:
<ol style="list-style-type: none"> <li>1. Executive powers;               <ul style="list-style-type: none"> <li>- environmental / EIA authorities</li> </ul> </li> <li>2. Private sector;               <ul style="list-style-type: none"> <li>- branch organizations or business coalitions</li> <li>- influential businessmen</li> </ul> </li> <li>3. Knowledge actors;               <ul style="list-style-type: none"> <li>- advisory boards or think tanks</li> <li>- knowledgeable (inter-)national experts</li> </ul> </li> <li>4. Civil society;               <ul style="list-style-type: none"> <li>- environmental NGOs</li> </ul> </li> <li>5. International actors               <ul style="list-style-type: none"> <li>- donors and finance institutes</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Legal framework;               <ul style="list-style-type: none"> <li>- international conventions on EIA</li> <li>- environmental legislation</li> <li>- sector legislation</li> <li>- legislation on civil society rights</li> </ul> </li> <li>2. Political / administrative system;               <ul style="list-style-type: none"> <li>- type of political system</li> <li>- division of powers, (<i>checks and balances</i>)</li> </ul> </li> <li>3. Socio-economic system;               <ul style="list-style-type: none"> <li>- economic situation</li> <li>- culture concerning civil society participation</li> <li>- knowledge infrastructure</li> </ul> </li> <li>4. Natural system;               <ul style="list-style-type: none"> <li>- state of the environment</li> <li>- environmental problems and disasters</li> </ul> </li> </ol>

Source: Kolhoff et al. 2009.

## 3.3 Case study Yemen

In this section we analyze the development of EIA legislation in Yemen. After a brief introduction of the national context, we discuss the development of EIA legislation on the basis of distinct phases, demarcated by the introduction and major changes in EIA legislation. The analysis framework is applied to each phase to characterize and explain this development.

### 3.3.1 National context

Yemen has a population of 23 million inhabitants. Historically it is known as “Arabia Felix” - a land of prosperity and happiness. Currently it is a low income country with a per capita income

of US\$ 1,070 and has become the most impoverished among the Arab countries (World Bank 2010a).

The republic of Yemen originated in 1990 after unification of the Yemen Arab Republic in the north and the People's Democratic Republic of Yemen in the south. In the constitution of the republic of Yemen a multi-party democracy was created. In practice, Yemen's politics is monopolized by the ruling party. The president Ali Abdullah Saleh has continuously served since 1978. The judiciary is formally independent, but in practice it is susceptible to interference from the executive and is unable to implement its rulings in many parts of the country (Al-Asaly, 2002). Since 1990, civil liberties have been limited; the state has a monopoly over the media and the government does not allow opposition parties to use them. Over the last 20 years this situation has hardly changed (Carapico, 1998). The revolutions in 2011 in Tunisia, Egypt and Libya also affected Yemen and resulted in some reforms and the withdrawal of the president after 33 years in power.

Regarding environmental challenges increasing groundwater scarcity due to over-utilization for irrigation agriculture is considered as the most important problem. Deterioration of the groundwater quality has become a problem for the provision of clean drinking water in the cities. At the sites where oil is exploited, pollution of the groundwater has become a problem. According to the EPA, these problems have resulted in a growth of the environmental awareness of decision-makers (World Bank, 2007).

### 3.3.2 Development of the EIA legislation

In this section we characterize developments in EIA legislation, for an overview of EIA legislation see table 3.4. We distinguish between three phases, which are demarcated on the basis of major changes in EIA legislation. Table 3.5 summarizes the development in EIA ambitions in each of these phases. Below we briefly characterize these developments.

Table 3.4: EIA legislation in Yemen

- |   |
|---|
| <ul style="list-style-type: none"><li>• Environmental protection law-no. 26 (1995)</li><li>• EIA policy (1996)</li><li>• Executive regulations of the law no.26 of 1995 issues by cabinet resolution-by-law no. 148 (2000)</li><li>• Presidential Decree-no. 101 on the establishment of EPA (2004)</li><li>• Memorandum of understanding between the EPA and the General investment authority (2006)</li></ul> |
|---|

#### Pre-legislative phase 1989 - 1994

In this phase two EIAs were conducted with the support of the Netherlands development cooperation program. An environmental authority did not yet exist and Yemeni authorities were hardly involved in those EIAs. At the start of the development of the first EIA legislation there was hardly any expert or government staff with practical EIA experience and that has hampered the development of this legislation. One government staff member, who was involved in those EIAs and later got a prominent position at the EPC and afterwards at the Ministry of environment, stated that because of that first experience he became the ambassador for EIA and due to his position he managed to get the EIA policy (1996) adopted in Yemen. This is an example of indirect learning of the EIA system as described by the Jong et al. (2012). De Jong et al. (2012) emphasizes the influence that donor-supported EIA projects might have on indirect learning of the EIA system, for example reflected in the capacity or experience of the EIA authority.

#### Phase I: 1995 - 2005

The first phase started in 1995 when EIA was legally established as part of the first environmental protection law for Yemen (see table 3.5). The Environmental Protection Council (EPC) became the key EIA organization that developed and adopted the EIA operational regulations in the form of policy in 1996. This policy was based upon the Netherlands and Canadian EIA legislation, with substantial support from a Netherlands funded project. This policy was not adopted by the cabinet nor the parliament and the Environmental Protection Council (EPC) only had an advisory role (hence score B2 in table 3.5) and no mandate for enforcement of the policy. As a consequence, EIA was a voluntary tool. The ambitions of the EIA legislation can be characterized as in-between low and moderate for the object of study, low for quality and moderate for accountability of decision-making, see table 3.5. In 2001 the EPC was replaced by the Environmental Protection Authority (EPA), aiming to become an executive authority.

#### Phase II: 2005 - 2010

The second phase started when the EPA, via a presidential decree, got a legal mandate for reviewing and environmental approval in 2005. This decree was prepared by the EPA chairman and a staff member experienced in EIA and already in place for more than 10 years. Some powerful sector ministries seem to have delayed the adoption of this decree for a number of years. In 2006 EPA further strengthened its position via a Memorandum of Understanding (MoU) with the General Investment Board. The role of this authority is to inform and support private (international) investors in acquiring the necessary licenses. Due to this MoU, the EPA is represented on the investment board and reviews and approves the EIA as an additional condition for implementation. Projects of national interest in the oil and gas sector as well as public investments do not pass the investment board and are therefore still not yet subject to obligatory EIA review and environmental approval. The MoU resulted in significant change in the provisions, reflected in a change of the scores on B2, B3. Other provisions did not change in phase II.

Since 2006 EPA has been preparing a new environmental protection law, including more ambitious EIA legislation still to be adopted (situation March 2012). It is proposed that public investments will become subject to obligatory EIA review. Until the start of the regime change in 2011 the parliament and all ministries, except the ministry for roads, were supporting this law. The current situation is unknown.

### 3.3.3 Explaining the development of EIA legislation

In the first phase, a less ambitious EIA legislation was adopted by means of an EIA policy. In fact, EIA was a voluntary procedure and the EIA authority only had an advisory role. The United Nations Conference on Environment and Development in Rio de Janeiro in June 1992 (UNCED 1992 in Rio) seem to have played an important role in supporting the initiatives of the environmental authorities to establish environmental legislation in general and EIA legislation in particular. According to the former decision makers, the policy arena deciding on this policy was dominated by the *EIA authority* supported by an international actor in the field of development



Table 3.5.: Development of EIA legislation in Yemen

Object of Study	Phase I: 1996-2005		Phase II: 2005-2010		Phase I: 1996 – 2005	Phase II: 2005 – 2010
A1	■		■		Objective of EIA is to protect and sustain the natural environment.	
A2		■		■	Projects with significant negative environmental project are subject to EIA about 20 per year	
A3		■		■	Private sector and government projects in the following sectors are subject to EIA: agriculture, roads, water and sanitation such as water reservoir dams, oil and gas development. For government investments the sector ministries are responsible for EIA and approval.	
A4		■		■	Design and routing alternatives should be studied and mitigating measures	
Quality of information						
B1	■			■	Scoping is not mandatory and there is no mechanism in place to secure quality of consultants.	
B2	■			■	EPA has only an advisory role in reviewing EIA.	EPA has an advisory role in reviewing EIA for public sector projects. EPA has an approval role in reviewing EIA for private sector projects.
B3	■			■	No alignment.	Alignment with most sector procedures for private sector projects. No alignment with public sector procedures.
Accountability						
C1		■		■	The public is allowed to be involved although the law is not very specific about their rights.	
C2		■		■	The EIA information is technical and available on some locations such as libraries and EPA offices.	
C3		■		■	The proponent has the responsibility to inform the public.	
C4		■		■	There are provisions for an administrative appeal procedure.	



= Ambitions reflected in the legislation



= Ambitions that changed between phase I and II

co-operation and some influential sector ministries. The policy was developed by the newly established EPC staff with little EIA and lobbying experience, and some international support. International technical assistance funded by the Netherlands supported the development of the draft policy but according to former high-level staff, the external influence on the decision-making process was small. The negotiation process and setting of ambitions was controlled by the EPC. According to the present decision-makers interviewed, *sector ministries* were not willing to give authority to the EPC because that would decrease their influence on projects. Moreover, the present decision-makers stated that environmental protection and legislation were new subjects and environmental awareness in the government was low. According to the present decision-makers, the *civil society* (i.e. environmental NGOs) did not play any role in the development of EIA legislation as civil liberties are limited and have hardly changed over the last 20 years, which is not surprising in a country that is ruled as an authoritarian state.

In the second phase the ambitions for quality of information shifted towards moderate, whilst the objectives for the other components remained low on average. The EPA got more authority through the presidential decree and the subsequent MoU with the general investment authority, an initiative of the EPA. That was the start of EIA as an obligatory tool for private sector investments. According to present decision-makers who were interviewed, the EPA supported by *legal and EIA experts* played a major role in this process. And according to the present decision-makers EPA and EIA experts were well aware of the different ambitions due their involvement in internationally funded trainings and internationally funded projects that apply international good practice EIA standards. One of the decision-makers stated that *“Influential businessmen and powerful sector ministries have been able to block the strengthening of the EPA and the EIA legislation for many years. However, the present decision-makers stated that due to increasing environmental awareness by the government and especially the parliamentary committee for the environment decision-makers, support was gained to adopt a new more ambitious EIA legislation”*. Our assumption, that the increasing *water stress* affecting the entire society seems to have contributed to this rising environmental awareness, was confirmed by the decision-makers interviewed. According to the present high level staff, the *civil society* still had no influence in the second phase because civil liberties are limited in this authoritarian state.

## 3.4 Case study Georgia

### 3.4.1 National context

Georgia has a population of almost 5 million inhabitants of which 1.5 million live in the capital of Tbilisi (World Bank, 2010b). In 1991 the country regained its sovereignty by breaking away from the former Soviet Union. Since then it has been a democratic republic. The civil wars in 1991-1993 and 2008 over the breakaway regions Abkhazia and South Ossetia affected the investment climate of the country. The “Rose Revolution” in November 2003 resulted in the election of a new president Mikheil Saakashvili and the introduction of a complete new policy of economic liberalization aiming to support private investment and enforcing the rule of law in the fight against corruption. Until the 1990s Georgia was one of the richest states of the Soviet Union and in 2003 it had turned into one of the poorest former Soviet Union countries. Since the revolution the economic situation has improved and in 2006 it became a lower middle

income country with US\$ 2,690 per capita (WB, 2010). Since 2000 the number of environmental NGOs has rapidly increased. Some are supported by international NGOs and actors in the field of development co-operation, and they increasingly influence public opinion.

According to the National Environmental Action Plan 2011 the most important environmental problems are caused by the mining sector and by the disposal of hazardous waste from the Soviet time. The environmental awareness of the civil society is in general perceived to be low (Government of Georgia, 2011).

**3.4.2 Development of the EIA legislation**

In this section we characterize developments in EIA legislation (for an overview of EIA legislation see table 3.6). We distinguish between three phases, which are demarcated on the basis of major changes in EIA legislation. Table 3.7 summarizes the development in EIA ambitions in each of these phases. Below we briefly characterize these developments.

Table 3.6: EIA legislation in Georgia

<p>Old EIA legislation not in place anymore</p> <ul style="list-style-type: none"> <li>• Law on Environmental permit (1996)</li> <li>• Law on State Ecological Expertise (1996, amended in 2003)</li> <li>• Regulation on Environmental Impact Assessment (2002)</li> <li>• Regulation on Rules to carry out State Ecological Expertise (2003)</li> <li>• Resolution of the Government of Georgia on approval of the regulation on rule and conditions for issuance of environmental impact permit (2005)</li> <li>• Law of Georgia on Service of Environment Protection (2008)</li> <li>• Regulation on rules for conducting ecological expertise (2008)</li> <li>• Law on Inspectorate of Environment Protection (2010)</li> </ul> <p>EIA legislation currently in place (July 2011)</p> <ul style="list-style-type: none"> <li>• Law on Environmental Protection—framework law (1996)</li> <li>• Aarhus Convention ratified in 2000</li> <li>• General Administrative Code of Georgia (1999)</li> <li>• Law of Georgia on Licenses and permits (2005)</li> <li>• Law of Georgia on Ecological Expertise (2007)</li> <li>• Law of Georgia on Permit for Impact on the Environment (2007)</li> <li>• Regulation on the environmental impact council (2011)</li> <li>• Regulation on the instruction for inspection and related activities (2011)</li> </ul>
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**Pre-legislative phase 1991-1995**

In the period after independence in 1991 and until the legal establishment of EIA in 1995, hardly any EIA was conducted due to lack of investments which might have been subject to voluntary EIAs. The lack of investments, in turn, was related to the unstable political situation.

**Phase I: 1996 - 2004**

The EIA legislation was based on EIA legislation in place in the Soviet-Union since the late1980s. The legal introduction of EIA in Georgia started with the adoption of the environmental protection law in 1996, which described basic principles, followed by specific legislation on EIA (Law on Environmental Permitting and Law on State Ecological Expertise, 1996). The European Union

Table 3.7: Development of EIA legislation in Georgia

Object of Study	Phase I: 1996-2005	Phase II: 2005-2010	Phase I: 1996 – 2005	Phase II: 2005 - 2010
A1	■	■	Objective of EIA is to protect the environment, human well-being, landscape and cultural heritage.	
A2	■	■	Number of EIAs ranging from 40 – 50 per year.	Number of EIAs ranging from 20 – 30 per year in the period 2005 - 2007 and from 50 - 80 in the period 2008 - 2010. Due to an amendment to the law requiring "old" enterprises that had started without an EIA, still to execute an EIA.
A3	■	■	The projects subject to EIA are private sector and government projects in about ten sectors and a number of identified government plans, such as for city planning, infrastructure plans.	Only private sector projects are subject to EIA, but they can be exempted temporarily, based on Law on state support to investments.
A4	■	■	Alternative and new project options needs to be studied, it is not specified to what extent alternatives need to be studied.	Alternative project options need to be studied, it is not specified to what extent alternatives need to be studied.
Quality of information				
B1	■	■	There is no mechanism in place to secure quality of consultants. The ministry keeps a list of consultants.	There is no mechanism in place to secure quality of consultants.
B2	■	■	Review is done by experts from in- and outside the ministry max 90 days (independence of experts not secured).	Review is done by a committee of experts from in- and outside the ministry max. 20 days.
B3	■	■	No alignment .	Alignment with most sector procedures for private sector projects.
Accountability				
C1	■	■	The public is informed about EIA by the Ministry of environment and has the right to convey comments to this ministry.	The public is informed about EIA by the proponent and has the right to convey comments to the proponent.
C2	■	■	The EIA is technical and available on some locations such as libraries and EPA offices.	The EIA is technical and available on some locations such as libraries, EPA offices and Aairtus centre website.
C3	■	■	Min. of environ. responsible for public hearing, including comments in EIA report, 90 days. The min. is obliged to respond to reasonable comments. Public represent. have right execute independent EIA, at their own costs.	Proponent is responsible for public hearing, including comments in EIA report, in the public notice 90 days. Ministry of environment is obliged to respond to reasonable comments.
C4	■	■	The proponent and the public representatives have the possibility for appeal to the EIA report and the final environmental approval of the project.	



= Ambitions reflected in the legislation



= Ambitions that changed between phase I and II

provided financial support. Detailed EIA regulations were approved by the environmental minister in 2002 and 2003. The EU provided support in developing legislation and regulations. Georgia was one of the first countries signing the Kiev protocol on EIA for plans and policies in May 2003 but has not yet ratified it. According to the former decision-makers who were interviewed, signing this protocol was part of a Georgian policy to sign all international conventions and protocols, aiming to “buy” good relations with the European Union. The EIA legislation developed in this phase can be considered as rather ambitious, see table 3.7.

### **Phase II: 2005 - 2010**

Directly after the Rose Revolution in November 2003 a new phase started and EIA legislation was changed considerably. A Netherlands supported project started, aiming to further improve the existing EIA legislation, in close cooperation with environmental NGOs. A draft law was prepared in a participatory way and submitted to the Ministry of Environment in December 2004. However, according to present high level staff whom we interviewed, this draft law was completely ignored by the ministry and by-passed by the new law on licences and permits that was prepared in parallel by the Ministry of Justice and the Ministry of Environment. The latter law was adopted in 2005, followed by three other laws further specifying EIA regulations in 2007 (Kitiashvili and Konjaria, 2010). The aim of the 2005 law is to facilitate business investment by simplifying permitting procedures, including EIA. As a result integrated permitting was established. The most important changes in the EIA legislation were the following: the number of activities requiring EIA was limited, the time for review was shortened from 90 to 20 days, and the responsibility for public participation was transferred from the EIA authority to the proponent.

### **3.4.3 Explaining the development of EIA legislation**

In the first phase rather ambitious EIA legislation has been set up. According to the former decision-makers, the 1996 law was prepared in a participatory way, involving NGOs with technical and financial support from the EU. UNCED 1992 in Rio was an incentive for the EU, to support Georgia in developing EIA legislation. According to the former decision-makers the adopted legislation was relatively ambitious because environmental NGOs were involved, which requested the adoption of accountability mechanisms. The *sector ministries* were not perceived to have constrained the process of approval. According to the former decision-makers, this was because they were not yet aware of the potential influence of this legislation.

After the Rose Revolution in 2003 a new and in general less ambitious EIA legislation was established in 2005. This was a direct result of the new liberal economic strategy adopted by the government focusing primarily on economic growth. According to the former decision-makers, EIA was considered a hindrance to economic investment and therefore the EIA ambitions for a number of aspects were downgraded. The preparation of the new EIA law was drafted by the Ministry of Environment and agreed upon with other sector ministers. According to the present high-level staff, the preparation and adoption of the new 2005 law was part of the liberalization strategy and directly guided by some *influential ministers* close to the President. In the view of the present high-level staff the *environmental situation* does not seem to have had an influence on this process.

## 3.5 Case study Ghana

### 3.5.1 National context<sup>10</sup>

In 1957 Ghana became the first independent country in Africa. It has a population of about 23 million inhabitants and is a low income country with a per capita income of US \$ 1,230 (World Bank, 2010c). From the early 1960s until 1993 Ghana had predominantly an authoritarian political system. Since 1993 a multi-party democracy has been established and the judiciary is relatively independent.

The constitution (1992) secures civil liberties. Civil society is characterized by widespread citizen participation at the community level, although non-partisan political involvement is rare. The few existing environmental NGOs are perceived to often achieve far-reaching results, especially in the mining sector. They operate in partnership with international NGOs (Darkwa et al., 2006).

According to the EPA the main environmental problems are land degradation, pollution of water bodies, deforestation, poor waste management, risk from chemical use, air pollution and flooding in some cities. Mining is considered as the most important polluting sector (World Bank, 2006a). Environmental problems caused by the mining sector are believed to have resulted in an early environmental awareness among Appiah-Opoku (2001).

### 3.5.2 Development of EIA legislation

In this section we characterize developments in EIA legislation (for an overview of EIA legislation see table 3.8). We distinguish between three phases, which are demarcated on the basis of major changes in EIA legislation. Table 3.9 summarizes the development in EIA ambitions in each of these phases. Below we briefly characterize these developments.

Table 3.8: EIA legislation in Ghana

<ul style="list-style-type: none"><li>• Investment code – PNDCL 116 (1985), replaced in 1994</li><li>• Environmental protection law (1994)</li><li>• EPA Act – 490 (1994)</li><li>• Environmental Assessment Regulations (LI 1652, 1999) amended (LI 1703, 2002)</li><li>• National Development Planning Commission planning guidelines (2004)</li></ul>
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#### Pre-legislative period 1985-1994

In 1973 Ghana created the Environmental Protection Council (EPC), the first government body on environmental management in Africa, in response to the UN environment Stockholm conference in 1972. In 1985 the Investment code, aiming to attract large-scale investments, included a requirement for EIA. Since then the EPC has prepared the set-up of a legislative EIA system. Characteristic for EIA development in Ghana is the pre-legislative period 1985-1994 in which EPC gained experience through voluntary EIAs (Appiah-Opoku, 2001). Between 1989 and 1994 EIA requirement was based on a government administrative directive.

<sup>10</sup> Based on: Institute of economic affairs (2008) and Darkwa et al. (2006).

### First phase 1994 – 2003

In 1994 EIA was legally established with the Environmental Protection Agency Act and EPA became the enforcing authority. In 1995 the EIA procedures, produced by EPA staff, were published. In 1999, environmental assessment regulations were promulgated, providing a detailed legal basis for the EIA procedures published in 1996. In 2002 an amendment to the 1999 regulations was made on fees and charges for processing EIA applications. EIA guidelines for eight sectors are under preparation. The EIA ambitions were relatively high for all the three components (see table 3.9).

### Second phase 2004 – 2010

As a condition for country support the World Bank required the preparation of the first (2001) and the second (2004) Ghana Poverty Reduction Strategies (GPRS) that were executed under the responsibility of the National Development Planning Commission (which has an advisory role on national development policies and strategies) (NDPC, 2001, 2004). These GPRS I and II were accompanied by an EIA. As part of the second GPRS, the NDPC approved guidelines in 2004 requiring EIAs for district plans and national sector policies as a condition for budgetary support. In addition, more specific guidelines were prepared (Kessler et al., 2009).

As a result of the national decentralization process, responsibilities for a large number of smaller EIA projects have shifted from EPA headquarters to EPA regional offices in 2005. However, that did not result in a change of the ambitions (see table 3.9). In 2005 the World Bank reviewed the EIA legislation and concluded that Ghana had established an ambitious EIA legislation that was almost in compliance with World Bank standards for EIA (WB, 2006b). The World Bank EIA standards are comparable with the EIA best practice model described by IAIA (1999).

### 3.5.3 Explaining the development of EIA legislation

In 1994 ambitious EIA legislation for all three components was established in Ghana. The former decision-makers stated that this legislation was developed by experienced EPC staff who were already involved in EIA from 1985. Also *environmental NGOs* and *experts* actively participated in this process. The political situation in 1994 had made this possible for four reasons. First, a multi-party democracy was established in 1993, the regime change resulted in more priority for environmental protection and created the opportunity for the EPC to develop environmental legislation in a participatory way. Secondly, environmental pollution caused by the extensive mining sector in the 1980s resulted in civil unrest and the establishment of civil society organizations have contributed to an early introduction of EIA (Appiah-Opuku, 2001). According to the former decision-makers the development of ambitious accountability mechanisms is completely in accordance with a widely supported view on the importance of democracy and adoption of democratic principles such as accountability. Thirdly, the UNCED 1992 in Rio introduced the concept of sustainable development and identified EIA as one of the tools to contribute to this development. According to the former decision-makers UNCED 1992 in Rio strengthened the position of the EPC and made it possible to establish high EIA ambitions in general, and the highest ambition for the indicator A1 aspects studied in EIA, in particular. And apart from providing technical and financial assistance, capacity development activities supported by international actors were perceived to have a direct role in the development of this legislation.

Table 3.9: Development of EIA legislation in Ghana

Object of Study	Phase I: 1994-2003		Phase II: 2004-2010		Phase I: 1994 – 2003		Phase II: 2004 - 2010	
A1		■			■	Objective of EIA is achieving sustainable development.		
A2		■			■	Decisions on projects and plans are mandatory, however for plans no regulation was made.		
A3		■			■	Number of EIAs for projects has gradually increased from 5 projects in 1996 to 40 in 2003.		
A4		■			■	Design, routing and site alternatives should be studied.		
<b>Quality of information</b>								
B1		■			■	Scoping report and EIA report need to be reviewed by EPA, supported by a cross sector technical review committee. There is no accreditation system for consultants in place. EPA holds a list of trained consultants.		
B2		■			■	EIA report need to be reviewed by EPA, supported by a cross sector technical review committee.		
B3		■			■	Alignment with sector procedures.		
<b>Accountability</b>								
C1		■			■	Public consultation is secured in all steps of the EIA procedure.		
C2		■			■	The EIA information is technical and available on some locations such as district councils and EPA offices		
C3		■			■	EPA is taking note of comments but decisions are not justified.		
C4		■			■	Any aggrieved person has the right to appeal to any EPA decision.		



= Ambitions reflected in the legislation



= Ambitions that changed between phase I and II



According to the former decision-makers and present high-level staff whom we interviewed, the EIA provisions for plans and policies adopted in 2004 were the result of the following factors. One, the EPA already had gained some experience with EIA for plans and co-operated closely together with the NDPC to adopt this provision. Two, the World Bank supported this development and their position was simultaneously used in the negotiation process to adopt these provisions.

### 3.6 Comparative analysis of the development of ambitions

The purpose of this article is to get a better insight into the factors that influence the development of EIA ambitions, as far as reflected in EIA legislation. Insight into these factors is expected to be important for the (further) development of EIA systems. EIA ambitions namely should be feasible in the country-specific context and hence attuned to the factors constraining and enabling the development of EIA ambitions. Based on literature we developed a framework for classifying, characterizing and explaining developments in EIA ambitions. The three country cases are used to illustrate the usefulness of our framework and as a first test to refine the framework. Regarding the latter purpose of the case studies, we have formulated the following hypotheses that complement and refine our analysis framework.

#### **Hypothesis 1: EIA legislation develops multilinearly**

The comparative analysis of the development of EIA legislation in the three countries examined shows that the EIA ambitions may develop multilinearly along the following three main dimensions: object of study, quality of information for decision-making and accountability of decision-making, each operationalized by three or four main indicators. The case studies showed that within a particular dimension of EIA ambitions, indicators do not necessarily develop simultaneously. Moreover, the analysis of developments in EIA legislation in the three countries examined shows how some ambitions might be tempered whereas at the same time others are raised.

#### **Hypothesis 2: Environment and sector authorities are the main actors**

The actors and context factors that influenced the development of ambitions in EIA legislation in Ghana, Georgia and Yemen are summarized in table 3.10. Two dominant actors are observed: on the one hand the environmental authority responsible for (the preparation of) EIA legislation, and on the other hand a number of influential sector ministries, such as mining, infrastructure, energy, construction and agriculture. In the policy arena, the environmental authority primarily defends the quality of the environment whilst the sector ministries primarily defend the interests of their sectors.

The hypothesized causal relations between context factors and the actors and their capacities influencing EIA ambitions are presented in table 3.11. The ability of the environmental authority to develop an EIA system and get certain ambitions adopted seems to depend on their capacity determined by leadership, autonomy, experience with EIA and policy-making, capacity of the lead authority to develop skills in key sectors and means (cf. De Jong et al. 2012). The ability of the sector ministries to influence the ambition level of EIA legislation seems to be dependent on their capacity determined by their leadership, experience with EIA, their vision on the role of environment for socio-economic development of the country and the linkages with the business sector.

The case studies suggest that the influence of five other actors on the development of EIA ambitions differs significantly (see table 3.10). International actors in the field of development co-operation and knowledge actors have played a role in respectively all and four out of the six phases of EIA legal development for the three countries altogether. The objectives the international actors want to achieve with EIA, is in table 3.11 identified as - vision on EIA-, are their most important capacities, whilst EIA experience is the most important capacity of knowledge actors influencing development of EIA ambitions, see table 3.11. A parliamentary environmental commission, influential businessmen and environmental NGOs only played a role during one of the EIA legal development phases, and in only one of the three countries examined.

Experience of the EIA authorities with EIA seems to be the most important factor explaining what ambitions the EIA authorities aimed for in the policy-making process with the sector authorities. Once EIA legislation is established, international actors can have an influence on EIA ambitions when they are an important actor through the contribution of a substantial amount of funds.

### **Hypothesis 3: The political system is the most important context factor**

The political system seems to be the most important context factor that determines the rules of policy-making (again see table 3.10 and 3.11), and it seems that the level of democracy of the political system determines the autonomy of the environmental authority and the rights of the environmental NGOs. UNCED 1992 in Rio has supported the development of the first legislation in all three countries.

### **Hypothesis 4: The importance of context factors on the development of ambitions is phase specific**

#### ***First phase***

During the establishment of the first EIA legislation in all three countries during the mid-1990s, there was an international discourse on the role of EIA in environmental management. The environmental authorities in all three countries considered UNCED 1992 in Rio as an important driver for the development of EIA legislation. As a consequence of this conference international actors in the field of development co-operation started supporting the establishment of environmental and EIA capacity development programs. The influence of national knowledge actors (academia and consultants) on the development of EIA legislation in Yemen and Georgia was absent, due to lack of experience with EIA. At that time knowledge actors as well as the environmental authority in Ghana had already gained experience with EIA through legislation since 1985 and EIAs funded by international actors for large-scale investments.

The capacity of the sector ministries during the first phase is large compared to the capacity of relatively young environmental authorities. During the preparation of the first EIA legislation, sector ministries in Georgia and Yemen were not yet aware of the influence of EIA due to lack of experience, and they hardly played a role in limiting the ambition level. In Ghana sector ministries were more aware of the influence of EIA. In addition, it seems that the environmental awareness of the sector ministries was relatively high due to the occurrence of a number of environmental disasters, the adoption of an inter-sectoral network approach during the implementation of a large environmental management project, pressure on the part of the civil society and finally international conferences on environment, water, sustainable development and climate change.

Table 3.10: Influence of factors on development of EIA legislation

Factors	Yemen		Georgia		Ghana	
	phase I	phase II	phase I	phase II	phase I	phase II
<b>Key actors:</b>						
1. Executive powers						
- environmental / EIA authorities;	XX	XX	XX	X	XX	XX
- <i>sector authorities</i>	X	X	-	XX	X	X
2. Legislative powers;						
- <i>parliamentary environmental commission</i>	-	X	-	-	-	-
3. Private sector;						
- branch organizations or business coalitions	-	-	-	-	-	-
- influential businessmen	-	X	-	-	-	-
4. Knowledge actors;						
- knowledgeable (inter-)national experts	-	X	X	-	X	X
5. Civil society;						
- environmental NGOs	-	-	-	-	X	-
6. International actors						
- donors and finance institutes	X	X	X	-	XX	X
<b>Context factors:</b>						
1. Legal framework;						
- international conventions on EIA	X	-	X	-	X	-
- environmental legislation	-	-	X	X	-	-
- sector legislation	-	-	-	-	-	-
- legislation on civil society rights	-	-	-	-	X	-
2. Political / administrative system;						
- political system	X	X	X	X	X	X
- division of powers ( <i>checks and balances</i> )	-	-	-	-	-	-
3. Socio-economic system;						
- economic situation	-	-	-	-	-	-
- culture concerning civil society participation	-	-	-	-	X	X
- knowledge infrastructure	-	-	-	-	-	-
4. Natural system						
- state of the environment	-	-	-	-	-	X
- environmental problems and disasters	-	X	-	-	X	-
<i>Factors added in italic</i>						

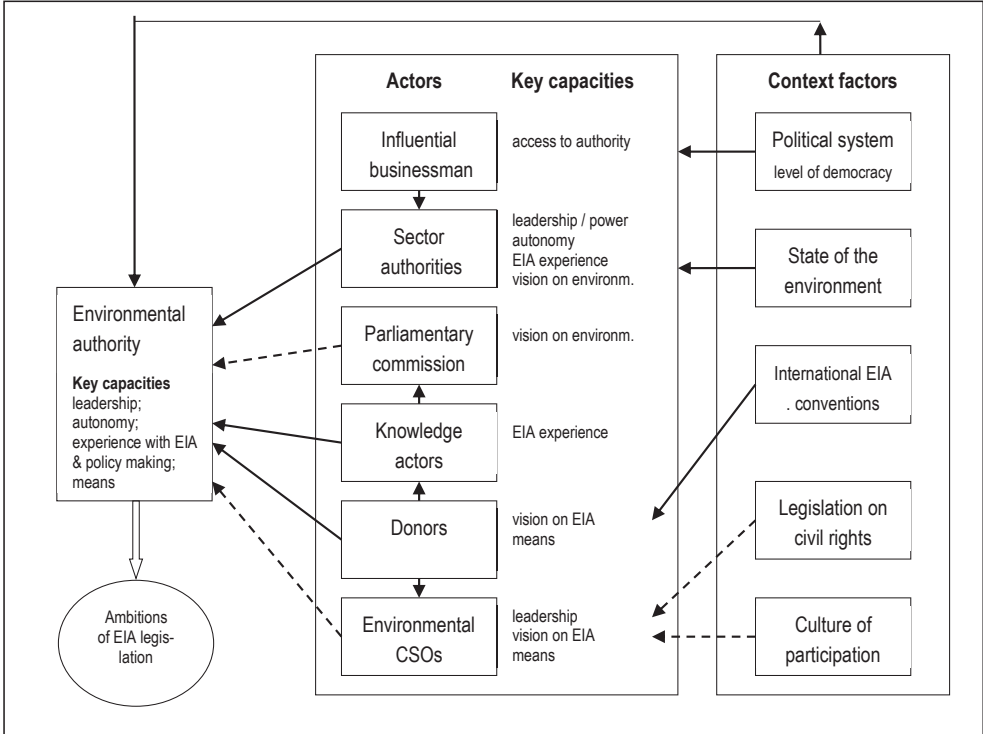
Legend: - no influence; X influence; XX strong influence.

### Second phase

The sector ministries played a more dominant role during the development of the second phase EIA legislation. At that time they had gained experience with the influence of EIA on project investments. In Georgia the role of the Ministry of Justice overruled the environmental authority in the development of legislation. A small group of ministers around the president developed the new liberal policy, aiming to minimize administrative procedures including EIA. In Yemen

some sector ministries tried to delay and minimize the development of a mandatory EIA system. These ministries have close ties with influential businessmen lobbying for their interests. Due to the leadership of the environmental authority the president directly supported the development of a mandatory EIA system. It seems that the deteriorating environmental situation has contributed to an increased environmental awareness of at least the staff in the office of the president. In Ghana the requirements of international actors to undertake EIAs for plans have influenced the adoption of a regulation for this type of EIA. The influential National Planning Commission supported this adoption.

Table 3.11: Influence of actors and context factors on development of ambitions of EIA legislation



Legend:   
 ←——— influence in at least two countries   
 ←----- influence in one country

**Hypothesis 5: Some ambitions have specific drivers**

We have assessed three causal relations between the context factors and actors that influence the development of the ambitions in the three main dimensions as distinguished in the analysis framework, object of study, quality of information for decision-making and accountability of decision-making.

Firstly, it seems that there is a relation between the vision of the sector ministries and parliament on the role of environment for socio-economic development of the country and the object of study. A higher level of environmental awareness will most likely result in more comprehensive ambitions for the object of study.

Secondly, the development of quality assurance of information for decision-making seems to be influenced by two main factors, on the one hand leadership and EIA experience of the lead EIA authority, and on the other hand the level of democracy of the political system. It seems that the more and stronger autonomous leadership and experience, the higher the ambitions for quality assurance of information for decision-making. It seems that a certain level of democracy is required before the highest ambition is aimed for.

Thirdly, the relation between the level of democracy and the ambitions on quality of accountability as described for Russia (Kovalev et al., 2009) could not be identified for these countries. This specific connection should be studied for countries that are developing into democracies. The other preliminary conclusions should be tested in non-democratic as well as democratic developing countries.

### 3.7 Conclusions and discussion

In this article a new analysis framework for classifying, characterizing and explaining the development of EIA legislation is described. Three country cases, Yemen, Georgia and Ghana are used to illustrate the usefulness of our framework and as a first test to refine the framework. Regarding the latter purpose of the case studies, we have formulated the following five hypotheses that complement and refine our analysis framework:

- EIA legislation may develop multilinearly in terms of ambition levels.
- Ambitions in EIA legislation seem to be influenced to a great extent by the power and capacity of, on the one hand, the environmental authorities supporting EIA and, on the other hand, the sector authorities hindering the development of EIA.
- The political system is the most important context factor influencing the rules of policy-making and the power of the different actors involved.
- The importance of context factors on the development of ambitions is dependent on the phase of EIA system development.
- Some ambitions have specific drivers. Firstly, the ambitions for the object of study seems to be influenced by the level of environmental awareness of the sector ministries and parliament. Secondly, the ambitions for the development of quality assurance of information for decision-making seems to be influenced by on the one hand the leadership and EIA experience of the primary EIA authority and on the other hand the level of democracy of the political system.

What are the possible implications of those hypotheses for the use of the analysis framework in the development of EIA legislation in practice?

Firstly, the newly developed analysis framework presented in table 3.2 can be used to categorize the existing ambitions of an EIA system, as well as its development. We argue that the framework can provide guidance for all actors who want to develop EIA legislation. This assumption needs to be tested in a country that wants to develop its legislation.

Secondly, in table 3.3 contextual factors influencing the development EIA legislation were listed. In this study two new factors were identified that were not included in table 3.3 namely influential sector ministers and the environmental (parliamentary) committee. The first have

played a significant role, whilst the latter only had a minor role in the development of legislation in one of the countries studied. Those factors should be included in this list.

Thirdly, this study shows the importance of considering the capacities of the main actors involved in development in EIA legislation as well as the role of especially the political system as the most important context factor. We suggest that actors involved in development of EIA legislation should make an adequate analysis of the context and identify the main actors and their capacities that might influence the development of EIA legislation to be able to identify the opportunities and limitations in setting EIA ambitions.

Finally, the country case studies raises a question on the influence of the fit between on the one hand the context and capacities and on the other hand the EIA ambitions that have been set, on *actual* EIA system performance. Our hypothesis is that the performance of the EIA system can partly be explained through the fit between on the one hand the context and capacities and on the other hand the EIA ambitions that have been set. We assume it is better to have a less ambitious EIA system that is expected to be feasible within a specific context and most likely more effective in terms of achieving the ambitions set, than a very ambitious EIA system that is not feasible and therefore not effective. This assumption should be tested in countries with different ambitions levels and different contexts.

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# Chapter 4: The influence of actor capacities on EIA system performance in low and middle income countries: Cases from Georgia and Ghana<sup>11</sup>

## Abstract

In this paper we aim to better understand the factors that contribute to substantive performance of EIA systems in low and middle income countries. Substantive performance is defined as the extent to which the EIA process contributes to the EIA objectives for the long term, namely environmental protection or, even more ambitious, sustainable development. We have therefore developed a conceptual model in which we focus on the key actors in the EIA system, the proponent and the EIA authority and their level of ownership as a key capacity to measure their performance, and we distinguish procedural performance and some contextual factors. This conceptual model is then verified and refined for the EIA phase and the EIA follow-up phase (permitting, monitoring and enforcement) by means of 12 case studies from Ghana (four cases) and Georgia (eight cases), both lower-middle income countries. We observe, that in most cases the level of substantive performance increases during the EIA phase but drops during the EIA follow-up phase, and as a result only five out of 12 operational cases are in compliance with permit conditions or national environmental standards. We conclude, firstly, ownership by the proponent is the most important factor explaining the level of substantive performance; the higher the proponents level of ownership the higher the level of substantive performance. The influence of the EIA authority on substantive performance is limited. Secondly, the influence of procedural performance on substantive performance seems less important than expected in the EIA phase but more important during the EIA follow-up phase.

In order to improve substantive performance we learned two lessons. Firstly, increasing the proponents level of ownership seems obvious, but direct change is probably difficult. However, where international finance institutes are involved they can increase ownership. Despite the limited influence of the EIA authority, a proactive strategy of, for example, working together with international finance institutes has a slightly larger influence than a reactive strategy.

Key words: EIA performance, capacities, ownership, Ghana, Georgia.

## 4.1 Introduction

In nearly all low and middle income countries (LMCs), EIA has been legally established since the UNCED conference in Rio in 1992 (NCEA, 2013). However, in the majority of those countries, the substantive performance of EIA is still considered to be weak (Kadkha et al., 2011; Marara et al., 2011; Clausen et al., 2011; Bitondo et al., 2014). Sadler (1996) defines substantive performance as the extent to which the EIA process contributes to the EIA objectives. The EIA objective for the long term is environmental protection or, even more ambitious, sustainable development and, for the short term, informed and accountable decision-making (IAIA, 1999).

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Little is still known about the factors explaining substantive performance (Annandale, 2001; Cashmore et al., 2004; Ostrovskaya and Leentvaar, 2011). Research on EIA performance in LMCs mainly focuses on procedural performance, i.e., the extent to which procedural requirements are met (Sadler, 1996; Zhang et al., 2012). Although procedural performance is important and a pre-condition for substantive performance (Van Doren et al., 2013; Khadka et al., 2011), it is not necessarily sufficient to explain substantive performance. All requirements of the EIA procedure, such as the delivery of an EIA report, can be fulfilled, but that does not mean that a project will be implemented in an environmental friendly way. To design and implement interventions that contribute to improved EIA substantive performance, it is necessary to better understand the factors explaining substantive performance. For this purpose, hypotheses raised in literature about factors that affect substantive performance (such as capacities, procedural performance and contextual factors; Kolhoff et al., 2009; 2013; Van Doren et al., 2012) need to be further elaborated (e.g. what is relative importance? how are they related? how can they be defined?) and empirically tested.

The aim of this paper is to contribute to a better understanding of substantive performance, elaborating in particular on the role and importance of actor capacities, defined as the abilities of people, organizations, and society as a whole to achieve their objectives (OECD 2006; UNDP, 2008; Armstrong, 2013). Of all the actors that might influence substantive performance we focus on the proponent, that can be a public or private organization, and the authority responsible for EIA and EIA follow-up (hereafter, 'the EIA authority'). We consider them as the primary actors because they have the primary responsible formal role in each of the EIA procedural steps and therefore distinguishes from other actors. The central question studied in this paper is what is the influence of (i) the key capacities of the proponent and the EIA authority (ii) the contextual factors such as international finance institutes (IFIs) and non-governmental organizations (NGOs) and (iii) procedural performance on substantive performance. Therefore, in this paper we develop a conceptual framework that specifies actor capacities and connects these to the substantive performance of EIA systems. This conceptual framework is then verified and refined based on 12 case studies from Ghana (four cases) and Georgia (eight cases), both lower-middle income countries.

In this paper we aim to better understand the factors influencing long-term substantive performance of EIA systems in LMCs. We have therefore studied the influence of the key capacities ownership (motivation and means) of the proponent and the EIA authority, the importance of procedural performance and the influence of contextual factors such as IFIs and NGOs. In Appendix 2 supplementary information to this chapter is presented.

## 4.2 Conceptual framework

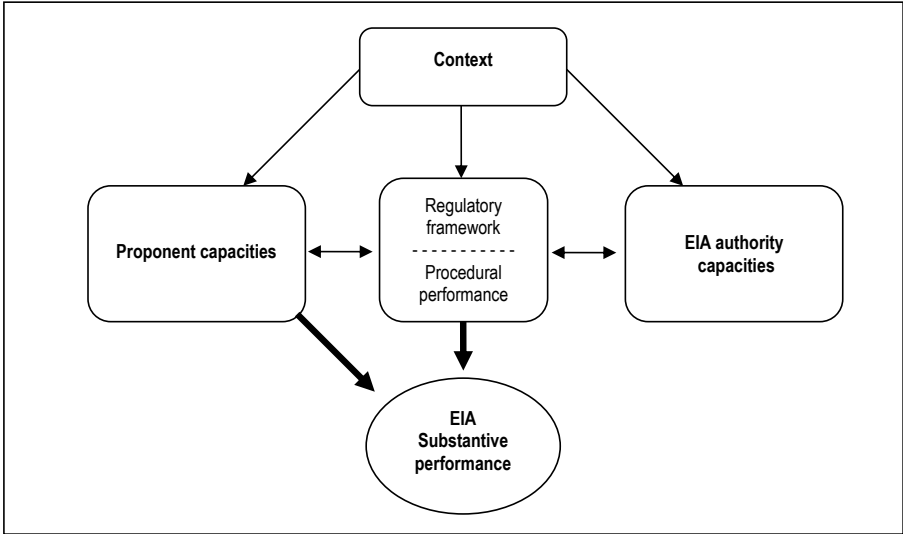
In this section, the following concepts will be described and operationalized: substantive performance, procedural performance and regulatory framework, capacities of the two primary actors and contextual factors. In figure 4.1, the relations between these concepts are indicated.

### 4.2.1 Substantive performance

In the introduction we defined substantive performance as the extent to which the EIA process contributes to the EIA objectives (Sadler, 1996). One can distinguish between two forms of

substantive performance, one focusing on the short-term objective of EIA, informed and accountable decision-making, that has frequently been studied in LMCs (Ogunba, 2004; Ali, 2007; Alemagi et al., 2007) and one focusing on the long-term objective of EIA, environmental protection or more ambitiously sustainable development, which is less frequently studied in LMCs (Khadka et al., 2011). In this paper, we focus on the long-term objective of EIA. Our study has therefore included not only the EIA phase following the procedural steps of screening, scoping, EIA execution and reviewing, but also the less studied EIA follow-up phase, including the procedural steps of environmental permitting or licensing, compliance monitoring or inspection and compliance enforcement. The importance of including EIA follow-up is emphasized by Khadha et al. (2011) who, in a study on EIA performance in LMCs, concluded that EIA substantive performance on its long-term objective remains weak if there is no improvement in the performance capacity (capacity means) of the EIA authority responsible for EIA follow-up phase. Empirical research with this focus on substantive performance, including the EIA follow-up phase, is rare in LMC, and it is expected that the findings of this study will provide new insights into the factors explaining this form of substantive performance.

Figure 4.1: Conceptual framework: Factors influencing EIA substantive performance



4.2.2 Procedural performance

Procedural performance refers to the extent to which the requirements of the regulatory framework are met (Sadler, 1996). Procedural performance is influenced by, on the one hand, clarity, and the ambitions that have been set in the EIA regulatory framework and other regulations such as environmental standards (considered as part of the context), and on the other hand the capacities of the two main actors who are interacting, primarily through communication and negotiation, during the procedural steps of the EIA- and EIA follow-up phase (Kolhoff et al., 2011; Zhang et al., 2012).

In the EIA literature it is assumed that procedural performance of the EIA phase is a condition for EIA substantive performance (Zhang et al., 2012; Wende, 2002; Arts et al., 2012). This might

be true for high income countries but our research in LMCs shows that there is a weak correlation between the level of procedural performance during the EIA phase and substantive performance in terms of achieving the long-term objective of EIA. So we hypothesize from our research, that in LMCs a high procedural performance is not a necessary condition for high substantive performance.

### 4.2.3 Capacities of the primary actors

In this section we describe the selection of the key capacities of the primary actors by using the literature on EIA and capacity development, by hypothesizing that those capacities primarily explain actors’ performance. According to Lusthaus et al. (2002) the performance of an organization is explained by its willingness or motivation, the ability to use its resources, and context. Lopez and Theison (2003) and, Baser and Morgan (2008) state that willingness or ownership and leadership (organizational capacities) are essential for good organizational performance and once in place, ensure that the other capacities such as skills and access to funds are developed. Kirchoff (2006) and Van Loon et al. (2009), building upon the work of Hilderbrand and Grindle (1994) and Potter and Brough (2004), have developed a framework to get insight into all the capacities used by the EIA authority in, respectively, Brazil and Yemen. Kirchoff (2006) and Van Loon et al. (2009) conclude that out of the five main capacities they distinguish (see table 4.1), organizational capacities are more important than the other four categories of capacities.

Table 4.1: Capacities of the key EIA actors

Key capacities		Capacities	Sub-capacities
Ownership	Motivation <i>'the will to'</i>	Organisational capacity	- Willingness to attain goals and meet incentives - Leadership (e.g. strategy, performance perception of other key actor) - Networking (formal-, informal linkages)
		Human capacity	- Number of staff
	Means <i>'the ability to'</i>	Scientific capacity	- Quality of information (e.g. compliance history) - Expertise (e.g. analytical skills) - Adjustability (organizational learning)
		Technical capacity	- Technical means
		Resource capacity	- Access to funds

Source: Based upon Lusthaus et al.,2002; Kirchoff, 2006; Van Loon et al., 2010.

According to Stoeglehner et al. (2009) *ownership* by the proponent is a key condition and capacity for substantive performance of EIA for plans, and we assume that this is comparable for EIA for projects as well. Stoeglehner et al. (2009) state that proponents should own or adopt EIA as a means to achieve environmental or sustainable development objectives. They distinguish between two main aspects of ownership. Firstly, there is ownership of environmental values or sustainability objectives, which is reflected in environmentally beneficial project design changes and implementation. Secondly, there is ownership of techniques, processes and necessary outcomes. The first aspect is in our view explained by the capacity motivation or willingness, ‘the will to’ achieve the EIA goal. We defined the second aspect of ownership identified by Stoeglehner et al. (2009) as the capacity ‘means’ or ‘the ability to’ achieve the EIA goal. The capacity ‘means’ is divided into human-, scientific-, technical- and resource capacities and

sub-capacities which are briefly described, see table 4.1. According to INECE (2009) and Ostrovskaya and Leentvaar (2011) human-, technical- and resource capacities during EIA follow-up are always limited and therefore it depends on the organizational sub-capacities of leadership and strategy as to how they are used most effectively. Leadership is defined as the organization's ability to influence its internal and external actors in terms of determining the goal, by increasing or decreasing the willingness of other actors to achieve that specific goal (Lusthaus et al., 2002). The primary actors do not perform in isolation, both can uphold formal and informal relationships with other actors, such as for example NGOs, the investment board or influential politicians, to strengthen their position in order to achieve their goal (capacity networking) (Pettigrew et al., 1992). Knowledge (scientific capacity) is considered to be essential in EIA as it aims to contribute to 'rationalization' of decision-making, so it therefore needs to be of good quality, relevant, timely and acceptable to stakeholders (Kornov and Thissen, 2000). The number of skilled staff (human capacities) the allocation of budget (resource capacity) and the available technical means (technical capacity) of the EIA actors are often limited (Van Loon et al., 2009; Marara et al., 2011; NCEA, 2014) whilst those capacities differ significantly for the proponents.

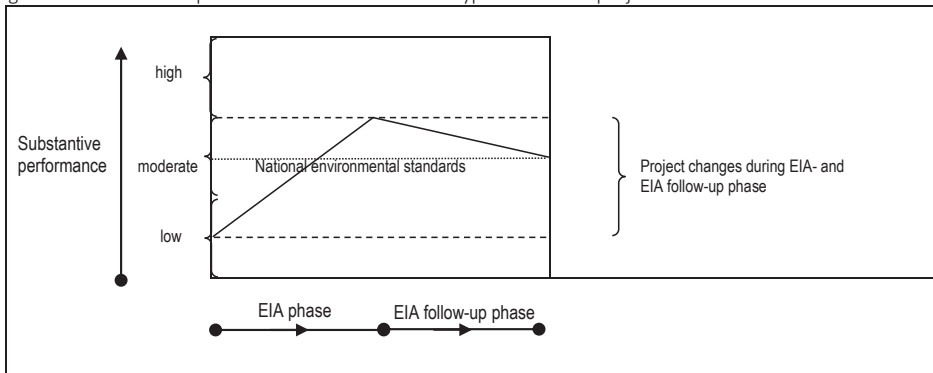
The primary actors interact iteratively during all steps of the EIA procedure. Their level of ownership is therefore also influenced by, on the one hand, leadership based upon earlier experiences (e.g. compliance history of the proponent, sub-capacity quality of information) and on the other hand, response to decisions and actions made during the procedure (Ostrovskaya and Leentvaar, 2009).

Summarizing, we define ownership as to what extent the primary actors aim to achieve the EIA objectives. We assume that *ownership*, consists of the dimensions *motivation* and *means*, and these dimensions are interrelated. And we argue that the level of ownership is influenced by on the one hand '*the will to*' achieve the long-term EIA goal reflected through the capacity *motivation*, and on the other hand '*the ability to*' achieve that goal that is influenced by the capacity *means* that are made available. Therefore, we identify ownership as the most important key capacity that will be used in the analysis to understand and explain the level of performance of the primary actors.

#### 4.2.4 Regulatory framework

The performance of the primary actors is directly influenced through the country-specific EIA regulatory framework and environmental standards, primarily through the influence on procedural performance, see figure 4.1. The country-specific EIA *regulatory framework* determines the height of the ambition of the government concerning environmental protection and accountability, and the autonomy of the EIA authority. The higher the ambition, the larger the potential for environmental and social best practice performance of the project during the EIA- and EIA follow-up phase (see figure 4.2). Legal autonomy of the EIA authority is important to act independently from other authorities in implementing the EIA regulations (El-Fadl and El-Fadel, 2004). Champenois (2011) studied the influence of environmental standards on EIA performance in low income countries in Africa. She concluded that legally established *environmental standards* are a condition for adequate procedural performance and when standards are absent or unclear the environmental permit conditions are negotiated. This makes the EIA authority vulnerable to corruption by the proponent, and as a consequence the procedural performance is generally low, which has a strong negative influence on substantive performance.

Figure 4.2: Substantive performance illustrated for a hypothetical EIA project



#### 4.2.5 Contextual factors

In the literature, the following contextual factors that influence EIA performance are mentioned: the national and international actors and characteristics of the project (Bansal and Roth, 2000; Kolhoff et al., 2009; Marara et al., 2011; Hansen et al., 2013; Champignois, 2011). Although contextual factors can hardly be changed, they matter, as they may explain the level of ownership of the two primary actors (Kolhoff et al., 2009). Below we will briefly discuss these factors.

##### International and national actors

National and international actors that might have an influence on substantive performance through one or both of the primary actors are listed in table 4.2. International actors involved in funding of the project, such as IFIs like the World Bank, or a bilateral donor such as Sweden in general have a strong positive influence on ownership as they apply high EIA standards. Consultants assigned to execute the EIA on behalf of the proponent, generally have little influence on the ownership of the latter. Marara et al. (2011) found in a study of low income countries that sector authorities can have a strong influence on substantive performance, as for projects of national importance they can approve or reject a given project, regardless of the results from the EIA study. The media, the NGOs, and the judiciary, are institutional actors that hold the EIA authority, the involved sector authorities and the proponent accountable for decisions and actions that are subject to EIA, and might therefore influence the ownership of the primary actors. (Marara et al., 2011). The media, for example, has a role in facilitating a public debate about controversial projects or making corruption public (Fox, 2000). When provisions for appeal are in place, the judiciary can have a role in judging the charges of, for example, an NGO that notices noncompliance with regulations (Marara et al., 2011). The legal rights (e.g. autonomy) of those actors or institutions are crucial to be able to play their role (Fox, 2000; Stapenhorst and O'Brien, 2006). When those rights are not guaranteed the risk of corruption increases.

Corruption, the abuse of public power for private gains (Shen and Williamson, 2005) is more common in the administrations of low income countries (Treisman, 2000) and moreover, EIA authorities of low income countries are more than usually vulnerable to this (USAid, 2002).

Until the Rose revolution in Georgia in 2003, corruption was widespread in the public sector and one could ‘buy’ an environmental permit at the EIA authority as their ownership was low (CENN, 2004a; World Bank, 2012). When corruption has become common in the EIA authority, such as in Georgia in the period until 2004, EIA becomes a rubber stamp procedure that does not or hardly contributes to substantive performance (CENN, 2004a; Kakonge, 2013).

Table 4.2: Overview of possible actors involved in the EIA procedure

Private sector	Government sector	Public sector / Civil society
Key EIA actors		
Proponent: - Private company	Proponent: - Government authority Competent authority: - EIA authority	
National actors		
<ul style="list-style-type: none"> <li>- Consultancy firm</li> <li>- Individual business leaders</li> <li>- Business associations</li> <li>- Elites</li> <li>- Chamber of commerce</li> <li>- Commercial banks</li> </ul>	<ul style="list-style-type: none"> <li>- Sector -, regional- and local authority</li> <li>- Judiciary (judges and assistants)</li> <li>- Office of the president / prime-minister</li> <li>- Sector ministers and advisors</li> <li>- Depts or agencies of sector ministries</li> <li>- Investment board</li> <li>- Political representative bodies (parliament, council etc.)</li> <li>- Parliamentary environmental committee</li> <li>- Military</li> <li>- Elites</li> </ul>	<ul style="list-style-type: none"> <li>- Affected people</li> <li>- Traditional leaders</li> <li>- National (environmental) NGOs</li> <li>- Media (journalists, press &amp; TV)</li> <li>- Knowledge organizations (universities and think tanks)</li> <li>- Compliance organizations (e.g. ombudsman)</li> <li>- Religious institutions</li> <li>- Social movements</li> <li>- Individual (EIA) experts</li> </ul>
International actors		
<ul style="list-style-type: none"> <li>- International business associations</li> <li>- International commercial banks</li> <li>- International financial institutes</li> </ul>	<ul style="list-style-type: none"> <li>- Donors (bilateral and multilateral)</li> <li>- Political representative bodies of donors e.g. (parliament)</li> <li>- Intern. organizations (e.g. UN, OECD)</li> <li>- Secretariats of international conventions</li> </ul>	<ul style="list-style-type: none"> <li>- International (environmental) NGOs</li> <li>- Int. EIA review- and compliance organ. (e.g. Netherlands Commission for EA)</li> <li>- International &amp; regional impact assessment associations</li> </ul>

### Characteristics of the project

The performance of the primary actors might be influenced by the characteristics of the project, namely, the expected negative impacts on the environment, people that might be affected and the importance of the project for the national economy (Bansal and Roth, 2000; Marara, et al., 2011). According to Bansal and Roth (2000) the proponent takes potential environmental effects of their project seriously when they are visible, cause a public emotional response, causality with the project is clear and therefore, for example air pollution is taken less seriously. We assume that the level of ownership by the EIA authority rises when the impacts are more significant or can be avoided or mitigated. And we assume a larger influence by other authorities on the EIA authority concerning environmental approval of a project of national interest, illustrated in Georgia in 2005, where the former head of the EIA authority in Georgia noted that he was forced by the office of the president to approve an EIA for the extension of the international airport that did not meet the standards. In this study we have not further elaborated on the influence of characteristics on performance of the primary actors.

## 4.3 Main concepts operationalized

### 4.3.1 Substantive performance

In this paper we measure substantive performance by focusing on projects that have been subject to EIA and that are approved and also implemented, because we wanted to measure the project changes made during the EIA phases. Substantive performance is measured through the project changes that have been made and are implemented voluntarily by the proponent during the EIA- and EIA follow-up phase, or changes that have been made at the request of, or are enforced by the EIA authority during the latter two phases, see figure 4.2. These project changes contribute towards environmental protection by avoiding, mitigating or compensating negative environmental effects or contributing towards positive environmental effects. An important threshold in measuring those changes is to what extent the environmental standards are met. If social effects are also addressed, these changes contribute towards the more ambitious EIA objective of sustainable development.

Table 4.3: Indicators to measure ownership, procedural performance and substantive performance

EIA objectives	<ul style="list-style-type: none"> <li>- Informed and accountable decision-making (short term)</li> <li>- Environmental protection or more ambitious sustainable development when social effects are considered (long term)</li> </ul>						
Procedure Phases							
Steps	<b>Screening</b>	<b>Scoping*</b>	<b>EIA preparation &amp; reviewing</b>	<b>Public participation</b>	<b>Permitting</b>	<b>Compliance monitoring</b>	<b>Compliance enforcement</b>
Legal task of:							
- Proponent	-Timely start / starting report	-Scoping report	-EIA report	-Organisat. Of pp. / report	-None	-Possibly project changes	-None
- EIA authority	-Decision	-Decision	-Decision	-Organis. Of pp. / decision	-Decision	-Decision	-Decision
<b>Indicators</b>	-Timely start EIA procedure		a. Quality EIA report b. Quality review	-Quality of public particip. process.	a. Quality of permitting b. Compliance permit condit.	-Compliance monitoring	-Compliance enforcement
- Procedural performance	+	-	a. +	+	-	+	+
- Ownership EIA authority	-	-	b. +	-	a. +	+	+
- Ownership proponent	+	-	a. +	-	b. +	-	-
	-Willingness to meet environmental standards through making project changes voluntarily, on request or enforced.				-Willingness to meet environmental standards (permit conditions) and make additional changes voluntarily, on request or enforced and implementation of changes made during the EIA- and EIA follow-up phase		
- Substantive performance	To what extent national or international environmental standards have been met: Low : None Low+: Some national standards Moderate: All national standards Moderate+: National standards-plus High: International good practice standards High+: International best practice standards				To what extent national or international environmental standards have been met: Low : None Low+: Some national standards Moderate: All national standards Moderate+: National standards-plus High: International good practice standards High+: International best practice standards		

\* Scoping is not a formal procedural step in Georgia and therefore, a scoping decision is not made.



Three measuring points have been identified to determine the level of substantive performance for the two EIA phases. The first measuring point is the start of the EIA phase when the proponent applies for a permit, the level of performance is determined by using the project proposal and scoping report prepared by the proponent, and the response to the scoping report prepared by the EIA authority and the EIA review report prepared by the EIA authority. The second measuring point is where the EIA phase ends and a decision is taken to provide a permit, and the EIA follow-up phase starts in case of permit approval. The third measuring point is during the EIA-follow up phase when the project is operational, to determine whether project design changes that were decided upon during the EIA and EIA follow-up phase were implemented, by assessing the environmental permit and the compliance monitoring or inspection report. We have identified six sub-categories to measure the overall score on substantive performance and categorized these into three main categories: low, moderate and high, see figure 4.2. When a project meets the national environmental standards a moderate score is given.

#### 4.3.2 Procedural performance

To be able to measure procedural performance it is necessary to identify the legal tasks of the two main actors in the EIA procedure. The EIA procedural steps are quite standard worldwide, but the legal tasks of the primary actors differ between countries (Petts, 1999). For example, scoping is legally required in Ghana, but not in Georgia, and in Georgia public participation is mainly the task of the proponent, whilst in Ghana it is the EIA authority's task. The legal tasks of the primary actors in both countries are listed and a distinct set of indicators, derived from Kolhoff et al. (2009) and Van Loon et al. (2010) is selected, see table 4.3. Six possible levels of procedural performance are determined: low, low+, moderate, moderate+, high and high+.

#### 4.3.3 Key capacities of the proponent and EIA authority

In section 2 we identified that 'ownership' consisting of 'motivation' and 'means' is the key capacity of the primary actors. Ownership is the result of the capacity motivation and means and the interaction between the latter two capacities is complex. And it is difficult to measure the influence of motivation and means on ownership separately. Therefore, we decided to measure only the capacity ownership of the proponent and EIA authority. Due to the interaction of the primary actors we assume that the level of ownership might differ during the EIA procedure and therefore we have decided to distinguish three levels of ownership separately for the two EIA phases, see table 4.4. Ownership of the proponent is determined by measuring, for the EIA phase: the EIA report quality, to what extent the environmental standards are met and whether project changes are made voluntarily or are enforced, and for the EIA follow-up phase: willingness to comply with the permit conditions and whether project changes are made voluntarily, on request or are enforced). Ownership of the EIA authority is determined by measuring, for the EIA phase: quality of review of the EIA report, and for the EIA follow-up phase: permit approval, execution of compliance monitoring (frequency and quality) and enforcement (effectiveness) in case of non-compliance. The level of ownership is measured qualitatively.

Table 4.4: Operationalizing the capacity ownership

Ownership by the proponent	Ownership by the EIA authority
<p>During EIA phase</p> <ul style="list-style-type: none"> <li>• Low: Late start of EIA procedure. EIA of low quality. The will to meet the environmental standards and make project changes is absent or low.</li> <li>• Moderate: Sub-optimal start of EIA procedure. EIA quality ranges from low to moderate. The will to meet environmental standards, and make major project design changes are made on request or are enforced by the EIA authority, minor changes are made voluntarily.</li> <li>• High: Timely start of EIA procedure. EIA quality ranges from moderate to high. The will to apply environmental-plus standards by making voluntary project design changes.</li> </ul>	<p>During the EIA phase</p> <ul style="list-style-type: none"> <li>• Low: The EIA report is hardly reviewed and supplementary information is never asked for.</li> <li>• Moderate: The EIA report is reviewed and supplementary information might be asked for.</li> <li>• High: The EIA report is well reviewed and supplementary information is asked for when necessary.</li> </ul>
<p>During the EIA follow-up phase</p> <ul style="list-style-type: none"> <li>• Low: No comply with the environmental standards / permit conditions. Changes decided upon during EIA phase and EIA follow-up phase are not implemented.</li> <li>• Moderate: Compliance with the environmental standards / permit conditions, additional changes, minor ones are made voluntarily, major ones are made on request of or enforced by the EIA authority. Changes decided upon during the EIA- and EIA follow-up phase are implemented on request of or are enforced by the EIA authority.</li> <li>• High: Compliance with environmental-plus standards and additional changes are made voluntarily. Changes decided upon during the EIA- and EIA follow-up phase are implemented voluntarily.</li> </ul>	<p>During the EIA follow-up phase</p> <ul style="list-style-type: none"> <li>• Low: The environmental permit is (always) approved. Permit is not enforced.</li> <li>• Moderate: The environmental permit only approved when requirements are met. Permit is enforced due to public complaints.</li> <li>• High: The environmental permit only approved when requirements are met. Permit is enforced due to complaints and routine inspection, fining or (temporarily) closing.</li> </ul>

#### 4.3.4 Justification of the case study approach and selection of case studies

A case study approach was chosen in order to verify and refine our conceptual framework. Case studies have various advantages compared to the use of more quantitative methods, as they allow both testing of hypotheses and the further development of theory, have the potential of achieving high conceptual validity, and allow for in-depth examination of the hypothesized role of causal mechanisms in the context of individual cases (George and Bennett, 2004). The limitations of case studies are that they can make only tentative conclusions on how much the contribution to the outcomes mattered (George and Bennett, 2004). We studied cases in two LMCs, to have some variety in institutional context. The selection of countries is the result of

the involvement of the first author in his position as advisor, in several EIA capacity development activities in Ghana (2007-2012) and Georgia (2004-2013). The advisory work was financially supported by a western donor country that had a bilateral development co-operation relationship amongst others with those two countries. Georgia was selected because the donor country was representing it on the board of the World Bank. Ghana was selected because of long-lasting historical relations. The first author became involved in those countries as English is the working language. The directors of the respective EIA authorities in Ghana and Georgia asked the first author to conduct an analysis of EIA performance, aiming to identify shortcomings and subsequently improve performance.

In consultation with the respective EIA authorities a selection of case studies was made that were already approved and implemented. In Ghana, four (two private mining and two public water) cases were studied in 2012. The director of the EIA authority was asked to select for those two sectors, a case with a relatively high and low level of substantive performance. The differences noticed between the cases on substantive performance and ownership of the proponent and EIA authority were larger than assumed. Therefore, we decided to study a larger number of eight cases in Georgia in 2013, assuming that we would get a sample that is (almost) representative for the group of selected cases. Cases were selected that in the period 2008-2012 have been subject to EIA, approved and are under construction or completed, and for which a complete portfolio of reports exists.

For each case study a desk research was conducted. During the desk research the documents and reports produced in each of the procedural steps by the proponent and EIA authority have been studied and compared to identify the project changes that have been made and the decisions that have been taken during these steps. For the Ghana cases we studied the starting document, the scoping report, response to the scoping report, the EIA report, the review report, the environmental permit, and inspection report(s). For the Georgia cases we studied the starting document, the EIA report, the review report, the environmental permit and inspection report(s). As stated in the paper in Georgia there is no formal scoping phase and therefore a scoping report is not prepared and has therefore not been studied during the desk research. All the documents studied have been made available by the EIA authority in respectively Ghana and Georgia and have been studied on site in the office of these respective authorities.

In addition to the desk research, for the case studies in Ghana site visits were conducted as well. The joint site visit with the environmental inspection in Ghana enabled us to conclude that the inspection reports we used for data analysis are an accurate reflection of the visits made by the environmental inspection team. In Georgia, we were not able to execute such a joint site inspection and as a consequence the validity of the inspection reports is unknown. Moreover, in Ghana 53 semi-structured interviews were conducted, divided over the following main groups, government 17, proponent and consultant 12, NGOs and affected people 23. In Georgia 66 semi-structured interviews were conducted, divided over the following main groups, 51 government, 11 proponent and consultant, 1 NGO. In both countries a validation workshop was held, primarily attended by government people and some consultants, where the preliminary case study findings were presented, validated and the people were asked to what extent those cases were representative for the performance of the EIA system. In both countries about 40 EIAs per year are conducted. The results of this analysis are not considered to be representative for the performance of the EIA system but illustrative due to the limited number of cases

that have been studied and the specific characteristics of these cases namely, that they were subject to EIA, approved and implemented. It was also concluded that those cases are representative for projects with comparable project characteristics. Moreover, during the validation workshop in Georgia we have asked the participants to what extent the absence of site visits have influenced the validity of the case study findings. They stated that this has not influenced the validity. We have no reason to contest their opinion but we have not been able to check ourselves.

### 4.4 Results and analysis

#### 4.4.1 Substantive performance

***What is the level of substantive performance during the EIA phases?***

The analysis of substantive performance of the cases shows the following results that are presented in table 4.5. For each of the three points measured (start, end of EIA phase and during EIA follow-up phase) the scores on substantive performance are distributed unevenly over the six identified categories and the distribution changes between the three points. At the start of the EIA phase six projects meet the environmental standards (category 3 moderate) and six don't (category 1 low and 2 low+). At the end of the EIA phase the number of projects that meet the environmental standards have increased to nine out of twelve.

Table 4.5: Substantive performance; level and change during EIA phases (N=12)

Phases	Level of substantive performance						Total
	Low		Moderate		High		
	Low (1)	Low+ (2)	Moder. (3)	Moder.+ (4)	High (5)	High+ (6)	
Start EIA phase	2	4	6	-	-	-	12
End of EIA phase	1	2	7	2	-	-	12
EIA follow-up phase	2	5	3	2	-	-	12

Legend: — = 1 case; — = 2 cases; — = 3 cases; — = 4 cases.

In the EIA follow-up phase this number drops to five, one less than at the start. So, one can conclude that during the EIA phase substantive performance increases but this positive effect is mainly lost during the EIA follow-up phase and as a result it seems that EIA overall did not contribute to an increase of substantive performance. In the following sections we will explain and refine this conclusion.

#### 4.4.2 Procedural performance influencing substantive performance

***Is procedural performance a condition for substantive performance?***

In section 2.3 we argued that procedural performance is a pre-condition for substantive performance. The findings of our study show for the EIA phase that, firstly there is a positive and moderate correlation between the level of procedural performance and the level of substantive performance, see figure 4.3a. Two cases deviate from this pattern as they have a low score on

procedural performance due to low scores on quality of the EIA report, public participation and compliance monitoring, and a constant moderate score on substantive performance during both EIA phases. Those two cases already met environmental standards at the start of the EIA process and therefore the EIA authority has shown low to moderate ownership. This means that a moderate score on substantive performance is not only the result of a timely start of the EIA procedure, a high quality EIA report and a high quality public participation but other factors are important as well. Secondly, during the EIA phase we notice a relatively high score on procedural performance, nine out of 12 cases have a moderate to high score during the EIA phase. This is most likely because the proponent needs in principle to meet the environmental standards (meaning a moderate score on substantive performance) to get an environmental permit. However, that does not always explain the level of substantive performance, as the two deviating cases have shown.

For the EIA follow-up phase our study shows a negative moderate correlation between the level of procedural performance and the level of substantive performance, see figure 4.3b. Procedural performance drops strongly from three cases having a low score during the EIA phase, to eight cases during the EIA follow-up phase. Substantive performance drops strongly as well from three cases during the EIA phase that did not meet the environmental standards to eight cases during the EIA follow-up phase. The drop in substantive performance is not only explained by the drop of procedural performance because in two cases substantive performance is moderate whilst procedural performance is low.

We conclude that the level of procedural performance does give an indication of the level of substantive performance but is not a condition. This correlation is stronger for the EIA follow-up phase compared with the EIA phase. And it seems that a relatively high score of procedural performance in the EIA phase compared with the EIA follow-up phase is explained because the proponent in principle needs to meet the environmental standards to get a permit.

#### 4.4.3 Substantive performance influenced by ownership of proponent and the EIA authority

##### ***Which of the two primary actors have the strongest influence on substantive performance?***

The correlation between substantive performance and the level of ownership by the proponent is positive strong for the EIA- and the EIA follow-up phase, see figure 4.4a and 4.4b. This means the higher the level of ownership by the proponent, the higher the level of substantive performance.

The correlation between substantive performance and the level of ownership by the EIA authority is positive moderate for the EIA phase but weak for the EIA follow-up phase, see figure 4.5a and 4.5b. This means that during the EIA phase the performance of the proponent has been changed positively, resulting in design changes of the project. However, during the EIA follow-up phase the influence of the EIA authority on substantive performance is limited and the level of substantive performance decreases. This suggests that the ownership of the proponent has a strong and larger influence on substantive performance than ownership of the EIA authority.

Figure 4.3a: Correlation for EIA phase

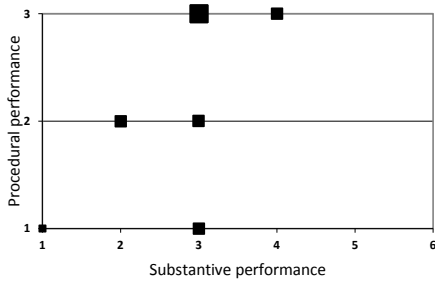


Figure 4.3b: Correlation for EIA follow-up phase

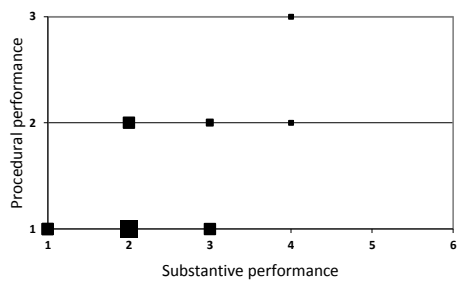


Figure 4.4a: Correlation for EIA phase

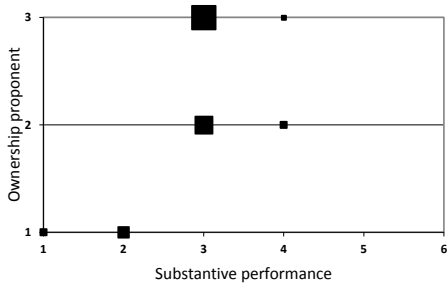


Figure 4.4b: Correlation for EIA follow-up phase

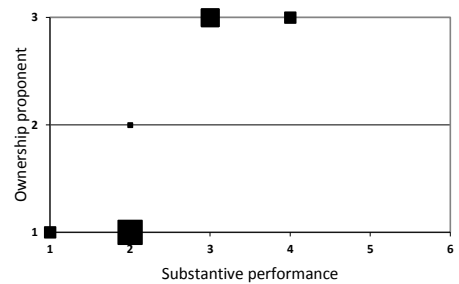


Figure 4.5a: Correlation for EIA phase

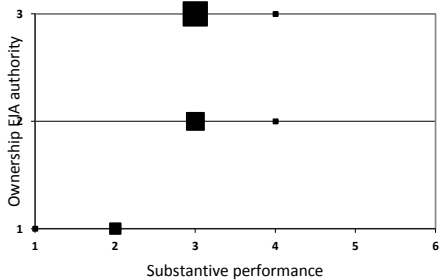
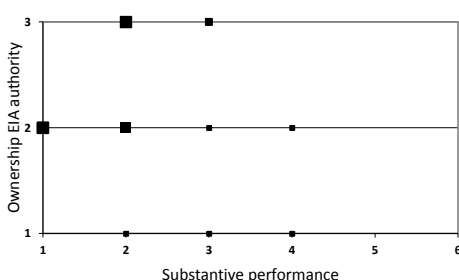


Figure 4.5b: Correlation for EIA phase



Legend for figure 3, 4 and 5: ■ = 1 case ■ = 2 cases ■ = 3 cases ■ = 4 cases.

**Which factors explain the level of ownership of the proponent during the EIA phases?**

We want to better understand the influence of the EIA authority (level of ownership) and the identified contextual actors (IFIs, sector authorities, affected public, NGOs, media, judiciary) on the level of the proponent’s ownership during the EIA- and EIA follow-up phase. Therefore, the cases are divided into the main categories of substantive performance that have been identified. The latter two categories have been combined because hardly any difference between them was noticed, see also table 4.5.

#### Low substantive performance (N=2)

The proponent's ownership is low during the EIA- and EIA follow-up phase. IFIs are not involved. Ownership of the Georgian EIA authority is low during the EIA phase and moderate during the EIA follow-up phase. The moderate level during the EIA follow-up phase is the direct result of the public complaints due to environmental pollution caused by the installations that are operational. However, the moderate level of ownership by the EIA authority did not result in a change of ownership by the proponent. The EIA authority of Georgia stated that higher ownership is not effective because the proponent is perceived as having good relations with powerful sector authorities. As a result substantive performance is low.

#### Low+ substantive performance (N=5)

In this category, the proponent's ownership is characterised by an increase during the EIA phase at the level that environmental standards are achieved, in most cases, and a decrease during the EIA follow-up. In the cases where IFIs are involved (N=3) they are an important factor influencing ownership of the proponent, during the EIA phase, because their EIA safeguards need to be met as a condition for funding and two cases have a moderate + score. However, during the EIA follow-up phase IFIs are less or not involved and as a consequence the level of ownership by the proponent drops, resulting in a decreasing level of substantive performance. An NGO in Georgia stated that they primarily invest in those cases because in general, IFIs, in contrast to the EIA authority respond positively to their complaints. Despite the moderate to high level of ownership by the EIA authority during the EIA follow-up phase, in most of the cases this does not avoid the decrease of the level substantive performance to low+.

#### Moderate (N=3) and moderate + (N=2) substantive performance (N=5)

In this category the proponent's ownership is high and stable during the EIA- and the EIA follow-up phase. In three cases the projects already meet the environmental standards at the start of the EIA phase. In two cases the proponent voluntarily responds positively to the influence of IFIs (N=1), EIA authority, the affected public and NGOs, resulting in a moderate+ score. Ownership by the EIA authority in Georgia ranges from low to moderate, low as they state that they prefer to use their limited resources for other projects and moderate when they receive complaints from affected people. Ownership by the Ghanaian EIA authority ranges from moderate to high as they consider it necessary to avoid or mitigate environmental and social impacts. In those cases the project results in moderate to moderate+ substantive performance.

For all above-mentioned categories the influence of the EIA authority on proponents' ownership is in general limited in Ghana as well as in Georgia. However, the influence of the Ghana EIA authority is slightly larger in comparison to Georgia and that seems to be related to a different strategy for compliance monitoring and enforcement. A strategy of the EIA authority provides guidance for their staff in the selection of cases that will be subject to compliance monitoring and enforcement and the appropriate use of their limited means. One can distinguish between a pro-active- and a reactive strategy (*strategy is part of the sub-capacity leadership, key capacity motivation*). The Ghana EIA authority applies a proactive strategy and selects those cases that might cause significant negative environmental or social impacts, aiming to prevent people becoming affected. In those cases they show moderate to high ownership. The Georgia EIA authority applies a reactive strategy; they primarily execute compliance monitoring and enforcement of those cases where people affected start complaining, showing moderate

to high ownership. And they do not execute compliance monitoring of cases funded by IFIs as it is assumed that those cases will have a better performance, resulting in low ownership.

The influence of the contextual actors, affected people and NGOs, the media and the judiciary, on ownership of the proponent directly or indirectly through the EIA authority, is in general limited for all categories. NGOs in Georgia state that they do not go to court any more for EIA cases, as they have found that the judiciary is subject to political influence. In high profile EIA cases the relatively free media supports affected people in both countries, but the influence on proponents' ownership directly or through the EIA authority remains limited, and no difference in influence of these contextual factors is noticed between the countries.

Summarising, the proponents' ownership is the result of the following four main inter-related factors: a. IFIs; b. sector authorities; c. EIA authority (level of ownership); d. affected public and NGOs. When ownership of the proponent is low, IFIs are not involved, sector authorities are probably involved in supporting the proponent, and this level can hardly be influenced by the EIA authority. A moderate level of ownership by the proponent can be maintained or increased due to the influence of IFIs and to a lesser extent by the EIA authority. Proponents with high ownership are willing to improve their project and respond voluntarily to the response of the EIA authority, IFIs or affected people.

During the validation workshops it was stated that in general, these findings are illustrative for Ghana and Georgia.

## 4.5 Conclusions and reflections

### 4.5.1 Conclusions

In this paper we aim to better understand the factors influencing long-term substantive performance of EIA systems in LMCs. We have therefore studied the influence of the key capacities ownership (motivation and means) of the proponent and the EIA authority, the importance of procedural performance and the influence of contextual factors such as IFIs and NGOs.

#### **Ownership of the proponent; the most important capacity explaining substantive performance**

Our study shows that the proponents' ownership is more important in determining substantive performance than the EIA authorities' ownership. IFIs that financially support proponents seem to have a considerable influence on proponents' ownership and therefore on substantive performance because international good practice EIA standards need to be met. A condition for this influence seems to be the involvement of those IFIs during the EIA and EIA follow-up phase. Potentially national and international NGOs can have a large influence but in these cases only had a relative small influence compared to the IFIs. In comparison to the proponent, the EIA authority generally has less influence on substantive performance than expected and this is possibly overestimated for LMCs. The influence of the EIA authority is strongly linked to the proponent's ownership. When ownership of the proponent is high environmental standards are met voluntarily and the EIA authority can stimulate optimization of the project. When ownership of the proponent is moderate we agree with Kadhka et al. (2011) that continuous high ownership by the EIA authority during EIA follow-up phase is required to ensure that the project changes agreed during the EIA phase are implemented in practice. In this situation, the actual



influence of the EIA authority depends on leadership and a proactive strategy to make effective use of always limited means in LMCs. When the proponent's ownership is low our study shows that the EIA authority has no influence on substantive performance.

#### **Procedural performance during EIA follow-up phase is more important than during the EIA phase**

In the EIA literature it is assumed that procedural performance of the EIA phase is a condition for EIA substantive performance (Zhang et al., 2012; Wende, 2002; Arts et al., 2012). This might be true for high income countries but our research in LMCs shows that there is a weak correlation between the level of procedural performance during the EIA phase and substantive performance in terms of achieving the long-term objective. So we hypothesize from our research, that a high procedural performance is perhaps a necessary but not a sufficient condition for high substantive performance in LMCs. Our research also studied the influence of procedural performance during the EIA follow-up phase on substantive performance and showed that there is a stronger correlation between EIA follow-up procedural performance and substantive performance. However, to explain substantive performance, our research showed that the capacities of the primary actors and especially the proponent, and some contextual factors, are more important in explaining long-term substantive performance. This means that the value of evaluations that focus on procedural performance in the EIA phase in LMCs to explain long-term substantive performance is limited if they only focus on the EIA phase. The value increases when procedural performance of the EIA follow-up phase is studied as well but this still does not explain long-term substantive performance.

### **4.5.2 Reflection on results**

#### **Validity of the study for EIA system performance**

In this paper we developed a conceptual framework that specifies actor capacities and connected these to the substantive performance of EIA systems. The cases selected in this study have been subject to EIA, were approved and implemented. However, in our study we did not include cases requiring EIA that were withdrawn by the proponent, not approved, or implemented without an environmental permit. The EIA authority in Georgia estimates that about one third of all installations are functioning without an environmental permit, the latter category. Therefore, this study is not representative for measuring substantive performance of the EIA system in the two countries studied. Therefore, we suggest the performance of the EIA system in the countries studied should be validated.

#### **Validity of the study for LMCs**

The question is raised as to what extent the selection of the two countries studied was sufficient to test and refine the conceptual framework. We conclude that this is the case but it is recommended that the results of our study should be validated with a larger number of LMCs.

### **4.5.3 Lessons learned**

We can learn two lessons from the aforementioned conclusions for capacity development of the primary actors in the EIA system. Firstly, increasing the proponents' level of ownership seems to be the most effective way to improve substantive performance. However, for private sector proponents this is probably difficult to achieve through external capacity development; it is most likely more feasible for public sector proponents. IFIs and the EIA authority have respectively a larger and a smaller influence on the ownership of the proponent. IFIs apply their

own policy of EIA good practice but they are increasingly willing to adopt country EIA systems. This means that there is an opportunity for the EIA authority to optimize the influence of IFIs on the proponents' ownership through a proactive consultation with IFIs. Moreover, the EIA authority as an organisation can learn from these experiences (*sub-capacity organizational learning*). Secondly, to improve their performance and make more effective use of the limited 'means', the EIA authority can apply a pro-active strategy in the selection of projects requiring high ownership, especially during the EIA follow-up phase. We assume that the limited means of the EIA authority can better be invested in a relatively small and effective unit responsible for compliance monitoring and enforcement instead of a country-wide coverage by less effective units. We suggest to further explore this assumption in further research.

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# Chapter 5: Overcoming low EIA performance: A diagnostic tool for the deliberate development of EIA system capacities in low and middle income countries<sup>12</sup>

## Abstract

Capacity building for EIA is problematic because it is often unclear what capacities have to be enhanced, and how, and how continuity in capacity building can be promoted. In this article a diagnostic tool is presented that aims to analyze, enhance and secure capacities of main actors involved in EIA in low and middle income countries (LMCs). The tool takes the form of a diagnosis tool: it enables a quick scan of EIA performance and identification of weak capacities, in order to facilitate a subsequent and more in-depth analysis of the problem and how it can be resolved. The tool consists of four different steps. In the first step the performance of the EIA system is analyzed. In the second step the main actors involved in EIA are identified. In the third step the capacities of the selected actors that can be enhanced are assessed. In the fourth step the options are identified to secure the capacities that are planned to be enhanced. The tool is tested in three phases and in three different settings. The groups who tested this tool considered it as useful tool that meets its aim and can already be used. We conclude with some suggestions for further research aimed at refining our tool.

Key words: Performance, diagnostic tool, EIA system capacities, LMCs

## 5.1 Introduction

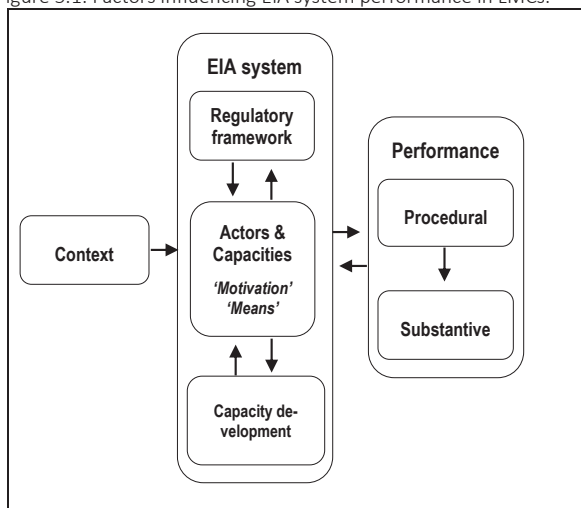
Since the UNCED conference in Rio in 1992, EIA has been enshrined in law in nearly all low and middle income countries (LMCs) (NCEA, 2015). It was at that conference that the role of EIA as an important policy tool for environmental management was first acknowledged by high, middle, and low income countries. However, various studies have shown that in the majority of LMCs, EIA system procedural and substantive performance are both considered to be weak (Annandale, 2001; Wood, 2003; Khadka and Shrestha, 2011; Marara et al., 2011; Kabir et al., 2013; Kakonge, 2013; Kolhoff et al., 2016; Wells-Dang, 2016). Procedural performance is defined as the extent to which the EIA process complies with the EIA legislation (Sadler, 1996). Substantive performance is defined as the extent to which the short-term objective of informed decision-making and the long-term objective of environmental protection in terms of meeting environmental standards are achieved (Sadler, 1996). In the EIA literature on LMCs, weak performance is usually explained by three interlinked groups of factors (see figure 5.1): EIA legislation that is either unclear or too ambitious, given the capacities and the (political) context (Mwalyosi and Hughes, 1998; Bitondo, 2000; Marara et al., 2011; Kabir et al., 2013; Kolhoff et al., 2009; 2013); weak capacities of the organizations involved (Wood, 2003; Van Loon et al., 2010; Clausen et al., 2011; Marara et al., 2011; Kabir et al., 2013) including weak monitoring and enforcement capacities (Khadka and Shrestha, 2011); and contextual factors that influence the performance of organizations through, for example, the extent to which the rule of law is

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applied and, as mentioned, the development of the EIA legislation (Kakonge, 2006; Kolhoff et al., 2009; 2013; Marara et al., 2011; Kabir et al., 2013; Wells-Dang, 2016).

Figure 5.1: Factors influencing EIA system performance in LMCs.



Since the 1992 UNCED conference most LMCs have received extensive capacity development support from donors to develop EIA legislation and the capacities of the EIA organizations (UNEP, 2004; Kakonge, 2006). The Asian Development Bank, for example, provided \$112 million support for environmental capacity in Asian countries in the period 1995–1999, much of which for EIA capacity development (USAid, 2009). In practice, it seems that capacity development has had limited influence on EIA performance in LMCs (Kakonge, 2006; Van Loon et al., 2010). This is illustrated for Vietnam, which adopted EIA in 1993 and where, in the 1990s, millions of US \$ were invested in developing the capacity of the EIA system by a variety of donors (Doberstein, 2003; 2004), yet about ten years later, Clausen et al. (2011) concluded that EIA system performance was still weak.

The EIA literature is relatively silent in explaining the limited effectiveness of interventions to improve EIA capacity development. Grindle (2007) states that there is ample guidance on the process conditions for capacity development (i.e., “how to do it”), but that there is a great need for guidance on the content (i.e., “what to do”: which capacities can and need to be enhanced and in which order?). In addition, Armstrong (2013) states that guidance is required on securing mechanisms, defined as to ensure that capacities that have been enhanced are maintained and further developed and do not erode after a capacity development program ends. But this step in capacity development is neither elaborated nor operationalized in the EIA literature. Pearson states (2011) that capacity development is a three-stage process. The first stage is to understand what capacities exist, what capacities need to be developed, and the context in which the need occurs. The second stage is design and the third is implementation, including monitoring and evaluation. More focused and deliberate capacity development for improved EIA system performance would benefit from a tool that supports a diagnosis of the EIA system in terms of its performance and, if this appears to be low, an indication of which capacities are contributing to the low performance (the first stage of capacity development). Such a diagnosis

then provides directions for further, specialized analysis: which capacities of the main organizations involved in EIA need to be examined in more detail, in order for them to be enhanced and their further development secured. The term “diagnosis” is deliberately chosen as a metaphor. Applying the tool we present here is rather like visiting the family doctor for a first diagnosis of a health problem that can be followed by a visit to the medical specialist for a more time-consuming and in-depth analysis of the problem before treatment can start.

The purpose of this paper is therefore to present a diagnostic tool that aims to identify the capacities of the main organizations that need to be enhanced and secured, given the existing EIA legislation. This is a condition for the next phases in the process of capacity development: the design and implementation of a strategy that contributes to improved substantive performance of EIA systems in LMCs. The tool aims to achieve this by contributing to a quick and qualitative understanding of EIA system performance and the key capacities of the main organizations contributing to performance that need to be enhanced. In a subsequent phase the identified capacities of the selected organizations can then be explored in more detail, with more quantitative and time-consuming data gathering and analysis. This is more efficient than the proposal by Pearson (2011), to identify all capacities at once.

The tool consists of a four-step approach. In step 1 the contribution of the EIA organizations toward substantive performance is collaboratively analyzed and discussed by using four indicators. In step 2 the main EIA organizations are identified and selected. In step 3 the key capacities of the selected main organizations are assessed and it is determined which key capacities need to be and can be enhanced. In step 4, mechanisms are identified to secure the maintenance and further development of the capacities that are planned to be enhanced.

This diagnostic tool builds upon the limited research that is available on developing EIA organizations’ capacities in order to improve EIA system performance in LMCs (Annandale, 2001; Doberstein, 2003; Kirchoff, 2006; Kolhoff et al., 2009; 2016; Bitondo et al., 2014; Dijkstra et al. 2016). The diagnostic tool supports two groups of organizations that aim to improve EIA system performance: domestic organizations that have a role in the national EIA system, such as the EIA authority, and international organizations, such as advisory institutes, donors or international finance institutes (e.g., the World Bank) involved in developing, implementing, and funding a capacity development program.

Other tools supporting the development of EIA system performance have been elaborated and are widely applied in LMCs, especially to guide the development of the EIA legislation (Leu et al., 1997; Wood, 1995; Ahmad and Wood, 2002). Two tools comparable to our tool have been developed by two international advisory institutes; the Netherlands Commission for Environmental Assessment (NCEA, 2015) developed a tool known as EIA mapping and the Southern African Institute for Environmental Assessment (SAIEA, 2011) has developed a tool known as the EIA barometer. The aim of these tools is to assist the main EIA organizations in understanding their level of performance by identifying and analyzing their weak and strong capacities, given the country-specific EIA legislation. Therefore, these tools only involve the first three steps of our tool. Moreover, much guidance has been developed to enhance the capacities of the EIA organizations. For example, the EIA Training Resource Manual prepared by UNEP (1996, 2002) is available for free in four languages and has been used widely by many different donors.

The manual aims to assist trainers to train others to understand the basic capacities in the application of EIA. However, the EIA literature provides little guidance on the systematic enhancement of capacities that contribute most to the improved performance of EIA.

Our tool complements in the following ways to the NCEA and the SAIEA tools. It is based on the limited scientific literature available which guides the identification of capacities of the EIA organizations that need to be enhanced and secured to improve substantive performance of the EIA system through a four-step approach (Devlin and Yap, 2008; Bryson, 2004; Armstrong, 2013; Kolhoff et al., 2016). New in the EIA field is the development of assumptions on the correlation between the scores on the selected indicators and the level of substantive performance (step 1), and the acknowledgment of the importance of the concept of securing mechanisms (step 4). The tool has been subject to critical review by experts to verify its value as a diagnostic tool. However, it has not been applied in practice and therefore we cannot provide specific guidance for its use. In section 2 we explain the concepts that are important to understand the development of our diagnostic tool. In section 3 we describe and operationalize the tool. In addition, we describe how we sought expert opinion on the tool and to what extent this resulted in adjustments of the tool. A discussion of the results and the conclusions is presented in section 4.

## 5.2 Concepts: Performance, capacity, capacities development and context

The main factors influencing EIA system performance are presented in figure 5.1. Firstly, there is the EIA system defined as the regulatory framework and the organizations with their capacities (hereafter 'EIA organizations') which have a role in the EIA procedural steps of screening, scoping, reviewing, and in the EIA follow-up procedural steps, permitting, compliance monitoring and enforcement. The system level is distinguished from the project level. The latter focuses on individual EIAs for projects and as a consequence the variation in performance might be large, whereas at system level the aim is to obtain an overall insight into the performance of EIA and the structural factors that explain EIA performance (i.e., capacities and contextual factors). The intervention also known as capacity development by a domestic or international organization is distinguished as a factor that aims to improve EIA system performance through developing the EIA regulatory framework and / or the capacities of the actors. Domestic as well as international organizations support EIA capacity development financially in order to integrate their values and governance norms into policy decisions (Cashmore et al., 2010). Their influence in the stage of diagnosis is considered to be limited, but the influence in the stage of design and implementation is potentially considerable (Cashmore et al., 2010). This is illustrated by Doberstein (2004), who studied capacity development of EIA by different donors in Vietnam: he noted that some donors were pushing the development of a western type of EIA in which for example public participation is considered to be essential, a provision that can hardly be applied in practice due to the limiting context in which, for example, independent NGOs are not allowed. The second factor influencing EIA performance is context: contextual factors such as the political system, the socio-economic situation, the state of the environment, and the institutional/legal framework may influence performance of the EIA system (Annandale, 2001; Mao and Hills, 2002; Cashmore et al., 2010, 2014).

We acknowledge the importance of contextual factors as explained above and as illustrated in figure 5.1. However, when developing our tool we did not consider which contextual factors



influence the opportunities to enhance the capacities of the EIA organizations involved because we have not had the opportunity to apply this tool in different LMC contexts and make a comparative assessment of the influence of context.

In steps 1 and 3 of the tool it is required to consider contextual factors. We do not provide guidance but assume that the organizations involved in those steps are capable of assessing how the contextual factors in their country create opportunities to enhance the capacities of the EIA organizations involved and make these factors explicit so it can be discussed and agreed upon.

In the following sections firstly, the concept of EIA performance will be presented. Secondly, the concepts of capacity and capacity development will be discussed, also in relation to performance.

## 5.2.1 Performance

### **Indicators for assessing substantive performance**

As stated in the introduction, a distinction is made between procedural and substantive performance. According to Wood (2003) and Cashmore et al. (2004) the majority of the performance studies in LMCs focus on procedural performance and only a few focus on substantive performance, probably because the latter require more time and funds (Cashmore et al., 2004). The tool we have developed tries to overcome both limitations: as stated, it focuses on substantive performance and its application requires little time and money.

For step 1 of the tool we therefore selected performance-measuring indicators that meet the following two criteria: data gathering requires little time (maximum of one day) as usually most of the information required has already been collected by the EIA authority; and the indicators are suitable for use in a discussion among representatives of EIA organizations, i.e., they are objective and provide a good opportunity for determining how the EIA organizations have contributed to the substantive performance of the EIA system.

To identify the main indicators that are used to measure procedural and substantive performance we reviewed the literature. Table 5.1 lists indicators applied in at least two references. Based upon the two selection criteria, indicators 8 and 9 were selected because information gathering requires little time as it is assumed that the EIA authority can easily provide this information – for example, from basic databases. Indicators 7 and, especially, 10, require a more time-consuming analysis of project documents to be able to identify project changes and therefore these are not suitable for use by our tool. Indicators 5 and 6 were selected, as information gathering also requires little time and a study by Kolhoff et al. (2016) showed that they can be used as proxy indicators for substantive performance. Arts et al. (2012) and Lyhne et al. (2015) conclude that the relationship between procedural and substantive performance in high income countries is strong. A comparative study by Kolhoff et al. (2016) in two LMCs showed that the relationship between procedural and substantive performance is weak for the EIA phase but seems to be much stronger for the EIA follow-up phase. This means that measuring the procedural performance of the EIA follow-up phase can be used as a proxy or indication of substantive performance in LMCs. Together, we expected that the four criteria selected would provide a good basis for a discussion in step 1 with representatives of the EIA organizations involved on their contribution to the level of substantive performance.

Table 5.1: Indicators for measuring EIA system performance

EIA system performance:	Indicators for measuring results (the indicators selected are in bold)	References (studies in LMCs in <i>italic</i> )
<b>Procedural performance</b>	1. Timely start and integration of EIA in decision – making process 2. Quality of EIA report 3. Quality of EIA process (including public participation) 4. Quality of EIA follow-up process 5. <b>Projects with an environmental permit that are monitored / inspected</b> 6. <b>Projects with an environmental permit that are enforced</b>	1. Sadler, 1996; Heuvelhof et al., 1997; <i>Mwalyosi et al., 1998</i> ; Zhang et al., 2010; <i>Kolhoff et al., 2016</i> . 2. Lee and Colley, 1992; Barker and Wood, 1999; Wende, 2002; <i>Kabir et al., 2013</i> ; <i>Kolhoff et al., 2016</i> . 3. Wood, 1995; <i>Ahmad and Wood, 2002</i> ; <i>Kolhoff et al., 2016</i> . 4. Leu et al., 1997; Morrison-Saunders et al., 2004; Pölönen et al., 2011. 5. Leu et al., 1997; Morrison-Saunders et al., 2004; <i>Kolhoff et al., 2016</i> . 6. Leu et al., 1997; Morrison-Saunders et al., 2004; <i>Kolhoff et al., 2016</i> .
<b>Substantive performance</b>	7. Change in project design prior to the start of EIA (preventive effect) 8. <b>Projects bypassing mandatory EIA</b> 9. <b>Projects stopped during EIA process due to expected unacceptable environmental impacts</b> (part of the indicator contribution to consent or decision to approve) 10. Change in project design or management (voluntary or forced) during the EIA and EIA follow-up phases and that positively effect environmental performance	7. Barker and Wood, 1999; Christensen, 2005; Arts et al., 2012; Lyhne et al., 2015. 8. <i>Banham et al., 1996</i> ; Cashmore et al., 2004. 9. <i>Banham et al., 1996</i> ; Sadler, 1996. Cashmore et al., 2004; <i>Marara et al., 2011</i> ; Arts et al. 2012; Lyhne et al., 2015. 10. <i>Banham et al., 1996</i> ; Barker et al. 1999; Morrison-Saunders et al., 2004; <i>Bitondo et al., 2007</i> ; Heinma et al., 2010; Van Doren et al., 2012; <i>Kabir et al., 2013</i> ; <i>Kolhoff et al., 2016</i> .

### 5.2.2 Capacity and capacity development – a general introduction

Capacity and capacity development have been widely used and interlinked concepts in the discourse on international development since the 1950s. The thinking about capacity is influenced by the experiences gained in the field of international co-operation that started capacity development on a large scale in the 1950s. We make a distinction between the concepts of capacity and capacity development to better understand, on the one hand, the capacities that influence EIA system performance, and on the other hand, to learn lessons from the literature on capacity development in terms of enhancing and securing capacities.

Below we describe in more detail the concept of capacity (section 2.3) and capacity development (2.4). In each section we start with a description of the general literature followed by the EIA literature and then operationalize the concepts for the development of our diagnostic tool.

### 5.2.3 Capacity

#### One concept, different meanings

The concept of capacity is widely used but there is no generally accepted definition (Morgan, 2006). Kaplan (1999) defines capacity as the ability of an organization to function as a resilient, strategic and autonomous entity. According to Morgan (2006), capacity is the ability to create value and it exists at different levels. UNDP (2008) and OECD (2006) define capacity as the ability of people, organizations, and society as a whole to achieve their objectives. To be able to

operationalize the concept of capacity it is therefore necessary to define a level together with defining “the value” in terms of output or performance (Morgan, 2006). According to UNDP (2008) one can distinguish, for example, the following levels of capacity: individual, organizational, sector or system, institutional, and global.

We define capacity as the ability of the EIA organizations to achieve their interests and objectives. In this paper we focus on the organizational level because the capacities of the EIA organizations to a large extent determine the performance of the EIA system that we would like to improve.

### **Capacity of EIA organizations**

In this paper we focus on the capacities of EIA organizations as a starting point for the development of our diagnostic tool. The following organizations are always involved in EIA in LMCs: the proponent (private or public) and the EIA authority. In addition, the following organizations might be involved: knowledge organizations (such as consultants), NGOs, sector authorities, donors, commercial banks and international finance institutes. Key EIA organizations are those that have a high level of influence on EIA performance. For the categorization of the capacities of the EIA organizations we build upon the work of Lusthaus et al. (2002) Kirchoff (2006) Van Loon et al. (2010), and Kolhoff et al. (2016). Table 5.2 shows how they have identified ownership consisting of motivation, “the will to,” and means, “the ability to,” as the key capacities of an organization. Motivation is defined as the desire to achieve a goal or a certain performance level (Lusthaus et al., 2002). This categorization is useful for our tool because it provides an opportunity to get a quick insight into the strength of those key capacities for each of the key EIA organizations and their contribution to EIA system performance.

Ownership is defined as to the extent to which the key EIA organizations aim to achieve the EIA objectives (Stoeglehner et al., 2009; Kolhoff et al., 2016). The level of ownership differs between the organizations involved. A high level of ownership of, for example, the EIA authority is no guarantee of high EIA performance. For example, a mining authority with a low level of ownership can have a negative influence on the EIA performance of mining projects, because it can use its generally strong capacity to overrule the EIA authority. According to Baser and Morgan (2008) the organizational key capacity of motivation and in particular the capacities of “willingness” and “leadership” are generally considered as key capacities that drive the performance of an organization. This is important to recognize in the development of our tool. In table 5.2 these capacities are identified as sub-capacities contributing to the key capacity of motivation.

## **5.2.4 Capacity development**

### **The concept**

There is also no agreed definition of capacity development. For instance, UNDP (2008) considers capacity development to be the core of its mission and defines it as “the process by which people, organizations and society as a whole create, strengthen and maintain their capacity over time”. Partidario (2005) states that capacity development is more than training but training remains the starting point.

Table 5.2: Categorization of the capacities of EIA organizations

Key capacities		Capacities	Sub-capacities
Ownership	Motivation <i>"the will to"</i>	Organizational capacity	- Willingness to attain goals and meet incentives - Leadership (e.g. strategy) - Networking (formal and informal linkages)
	Means <i>"the ability to"</i>	Human capacity	- Number of staff
Scientific capacity		- Quality of information - Expertise (e.g., analytical skills) - Adjustability (organizational learning)	
Technical capacity		- Technical means	
Resource capacity		- Access to funds	

Source: Based on Lusthaus et al., 2002; Kirchoff, 2006; Van Loon et al., 2010.

The evolution of the concept of capacity development has been influenced by paradigm shifts in the field of international development co-operation since the 1950s. Whyte (2004) and Lusthaus et al. (1995) have characterized these shifts as follows. In the 1960s and 1970s the focus was on developing the technical capacities of individuals. This shifted in the 1980s to the capacity of organizations. In 1990, Senge mentioned that organizations should take responsibility for developing their capacity by becoming learning organizations. Kaplan (1999) emphasized that establishing a learning organization guarantees that enhanced capacities do not erode when capacity development stops. A paper presented by Kaplan in 1999 can be considered as a paradigm shift in thinking about capacity development, from a focus on linear, organizational, and predictable development toward a focus on systems as the object of study, and the idea that systems are complex and their development is unpredictable (Kaplan, 1999). Since the early 2000s the system thinking concept has had an important influence on views on capacity development. The starting point in this concept is the idea that organizations are considered as having linkages with other organizations and function as a system to achieve a common goal that adapts to changing contexts in an unpredictable way (Morgan, 2005). The latest development in capacity development, building upon system thinking and learning at system level, is the wide adoption by the international development community of the theory of change (IEG, 2012; Vogel, 2012). This is a results- or outcome-based approach intended to support context-specific change by making assumptions explicit and improving capacity development through continuous and systematic testing of those assumptions (Eguren, 2011; Vogel, 2012).

In the sparse literature on capacity development for EIA the same trend can be observed as in the general literature on capacity development (Annandale, 2001; Doberstein, 2003; Doberstein, 2004). In the 1990s, when EIA was adopted in most of the LMCs, the focus was on developing the technical capacity of individuals within EIA authorities and consultants. Since 2000, system thinking and attention for organizational and system learning have emerged. As mentioned in the introduction to this paper, the NCEA (2015) and SAIEA (2011) are donor organizations that have developed a tool to assess EIA performance from a system's perspective, aiming to support capacity development. Both tools are widely applied, mainly in Sub-Saharan Africa.

### Capacity development to improve EIA system performance

We define capacity development as the process that aims to improve EIA system performance through, firstly, enhancing the capacities of EIA organizations and, secondly, developing and applying mechanisms to secure the maintenance or further development of the enhanced capacities. These two components of capacity development are elaborated in the following two sections 2.4.1 and 2.4.2.

As stated in the introduction, we will focus on the *content* of capacity development and not on the *process*. In order to sharply distinguish between “content” and “process”, in this paragraph we will only summarize the available information on conditions for an effective capacity development process. The following four main conditions are derived from general capacity development literature and might be applicable for EIA capacity development: (i) a supporting actor needs to be trusted, open and understand the local context (Acquaye-Baddoo, 2010; Ubels, 2010); (ii) capacity development should in most cases be a collaborative process (Mundia, 2009; Armstrong, 2013); (iii) a system approach needs to be applied, as organizations are interrelated with other organizations (Morgan, 2005); (iv) a country-specific bottom-up approach following incremental growth is in general more effective than a blueprint top-down approach (Datta et al., 2012; Ubels, 2010; Armstrong, 2013). Application of those conditions might possibly be improved in EIA capacity development, but in this paper we will not study this further.

### Enhancing capacities

Capacity development aims to improve EIA system performance through enhancing the capacities of organizations involved in EIA. The question arises: which of the organizations involved in EIA should be focused on and which capacities of the selected organizations should be enhanced? In section 2.3 the main organizations involved in EIA and organizational capacities were identified and described. According to Grindle (2007) the political system determines to a large extent which capacities can be enhanced; therefore, guidance on enhancing capacities needs to take that into consideration. As stated before, we derived from Baser and Morgan (2008) that motivation is considered to be the key capacity that drives the performance of an organization. Boesen and Therskilden (2005) acknowledge that one can focus on the key organizational capacities “motivation” and “means,” but also state that for effective capacity development it is necessary to consider interventions that focus on enhancing the power relations between EIA organizations as well as between EIA organizations and contextual actors or organizations. Power relationships actually account for the difference between organizations for mobilizing their capacities to achieve a specific goal (Avelino and Rotmans, 2010). This is important because Boesen and Therskilden (2005) state that the majority of capacity development interventions focus primarily on the key capacities of means (“getting the means right”), while an intervention that is able to improve the key capacity of motivation of, for example, an influential sector authority with opposing interests, probably contributes more to EIA system performance. Interestingly, they also state that sometimes an external organization should make use of its capacity to force change in the power relationships between organizations. This means that not only organizations very motivated to contribute to the EIA objectives can be selected for capacity development, but also organizations that might have interests that conflict with the EIA objective. According to Boesen and Therskilden (2005), in the ideal situation, an intervention is developed that takes both key organizational capacities and contextual factors into consideration, but that is not always possible for a variety of reasons, such as lack of will in some receiving organizations, or of means in an external supporting organization.

### **Securing capacities: institutionalization, learning and accountability**

To secure the maintenance and further development of capacities that have been enhanced and that do not erode when capacity development is stopped, certain mechanisms should be established (UNDP, 1997; Kaplan; 1999; Morgan, 2005; IOB, 2011; Armstrong, 2013). The most important mechanisms for securing capacities are through institutionalization and supporting learning at organizational and system levels, and development of accountability mechanisms at system level (Datta et al., 2012; Ubels et al., 2010). These conclusions are supported by a comparative study of EIA capacity development by external donors in Ghana and the Maldives. This study emphasized the importance of the influence of indirect learning by organizations having a role in EIA, in securing the capacities that have been developed (De Jong et al., 2012). Below we will further explain these securing mechanisms.

#### **Organizational and system learning, and institutionalization**

Organizational learning is the acquisition of understanding, know-how, techniques, and practices which are to some degree new to the organization (Argyris and Schon, 1996). Gazzola et al. (2011) define organizational learning as the process in which multiple parts of organizations or a system maintain themselves and adapt to the external context. According to Liao and Wu (2010), organizational learning is a driving force for substantive performance; Lawrence (2013) describes it as adaptive management. Learning at system level is about learning between organizations and this is more difficult, since it is a shared responsibility. One can distinguish between direct and indirect learning because the latter form generally takes place unintentionally (De Jong et al., 2012). The importance of organizational learning is emphasized by a growing number of authors that state that capacity development is in principle a collaborative or organizational learning process (Pearson, 2011; Armstrong, 2013; Dijkstra et al., 2016). However, the most important step in securing is the process of embedding the various learning outcomes of individuals in the organization through the process of institutionalization. Institutionalization is the process of ensuring the formalized integration of learning outcome in the structure of an organization (Wiseman, 2008). An example of system learning is change to the regulatory framework as a result of an evaluation of EIA system performance. If it is formalized that such an evaluation needs to be executed e.g., every five years, and the report needs to be made public, institutionalization has taken place. In capacity development one should be aware of the concept of organizational learning and support so that each organization becomes a learning organization, as that is the best guarantee that enhanced capacities are secured and form the basis for further enhancement in a continuous learning process (Senge, 1990). Formalized exchange of information and knowledge between EIA organizations contributes to system learning. For organizations involved in EIA this means that staff, who in principle are the drivers of organizational learning, should be given the opportunity by the management (sub-capacity leadership) to improve the key capacity means. To support system learning the management can develop the capacity of networking.

#### **Accountability at system level**

Accountability is about the relations between the government and its citizens and the extent to which the government can be held responsible for its actions (Newell, 2006). Accountability consists of three dimensions: transparency, answerability, and enforceability. Transparency means that citizens have access to EIAs and decisions made. Answerability means that citizens are able to demand that the state justifies decisions made. Enforceability means that citizens are able to sanction the state if, for example, it fails to meet environmental standards (OECD,

2009). Accountability is important for EIA system performance, as it is about the relationship between the EIA authority and the people affected by a project subjected to EIA, or organizations representing or supporting these people, such as NGOs. If accountability mechanisms are in place and organizations like the media and judiciary are independent, NGOs can fulfill their task in EIA as watchdog, and speak on behalf of the people affected. Hence, NGOs can become allies of the EIA authority, aiming to achieve high performance of the EIA system. Capacity development that aims to strengthen the level of EIA ownership of NGOs can therefore also be considered as contributing to the improved performance of the EIA system.

## 5.3 A diagnostic tool to analyze, enhance, and secure capacities of EIA organizations

### 5.3.1 Approach applied to develop the diagnostic tool

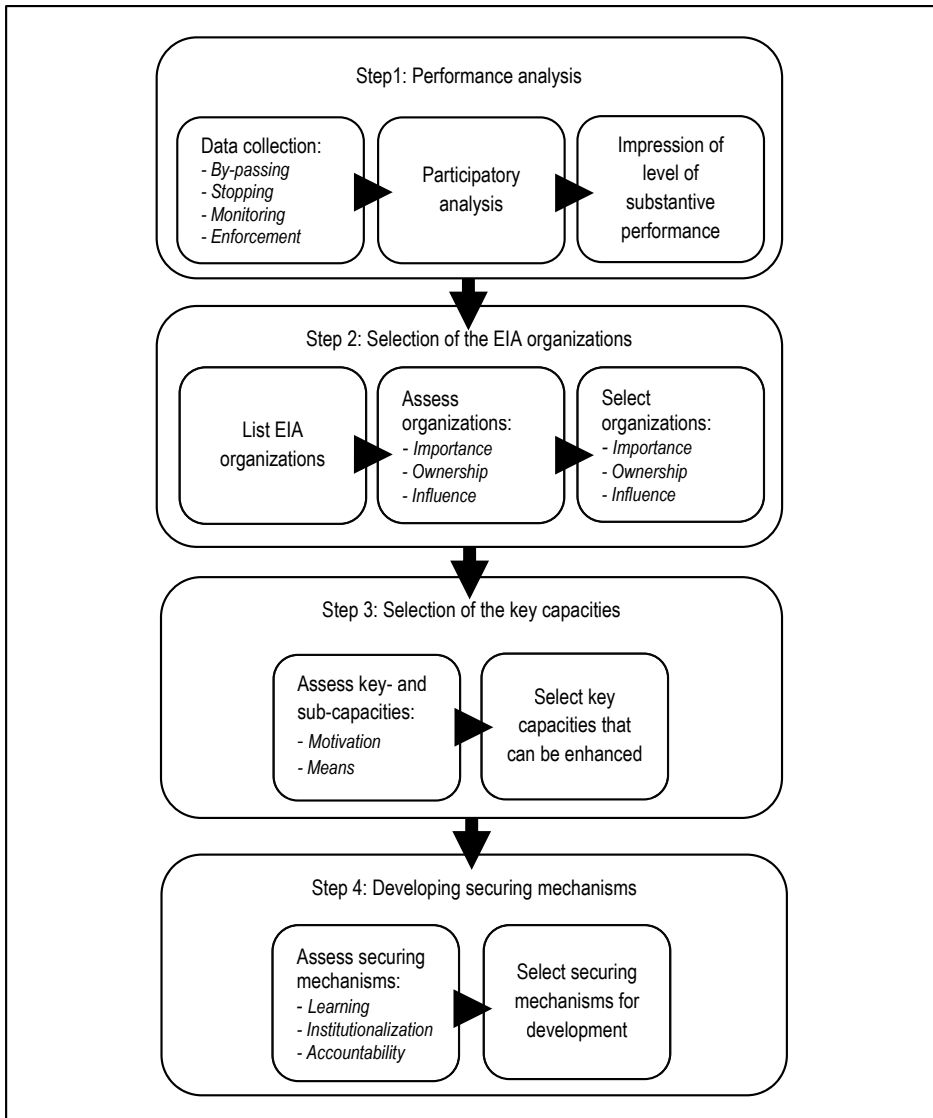
In this section we describe the methodological procedure and development of the diagnostic tool. Due to the limited theoretical background on EIA capacity development, the tool has gradually been developed by also making use of practical experience and validation by EIA practitioners. For the development of this diagnostic tool a design-oriented research approach was followed (Verschuren and Doorewaard, 2010). According to Verschuren and Doorewaard (2010) such research should formulate recommendations for a design, based on a problem analysis, a diagnosis, and an assessment of a prototype of the design.

We translated those three components into the following four steps of the tool, see also figure 5.2:

- Step 1: Collaborative analysis of an impression of the level of substantive performance and a discussion of the contribution of the EIA organizations toward substantive performance.
- Step 2: Identification and selection of the main organizations involved in EIA.
- Step 3: Assessment of the key capacities of the selected organizations and determination of which key capacities need to be and can be enhanced.
- Step 4: Development of mechanisms to secure the maintenance and further development of the capacities that are planned to be enhanced.

In section 5.2 of this paper, the following issues used as conditions or starting point for the development of the tool were described. To recap, firstly, conditions for the capacity development process as mentioned in the introductory paragraph of section 2.4. In addition, in the description of the steps, only specific guidance for the process is provided. Secondly, the existing EIA legislation is considered to be a starting point. Thirdly, the correlation between procedural and substantive performance, which Cashmore et al. (2004) Arts et al. (2012), and Kolhoff et al. (2016) studied, is used for the selection of the indicators to assess substantive performance. Fourthly, the categorization of EIA organizations' capacities as presented in table 5.2 is a starting point for steps 2 and 3 and builds upon the work of Lusthaus et al. (2002), Kirchoff (2006), Stoeglehner et al. (2009), Van Loon et al. (2010), and Kolhoff et al. (2016). Fifthly, it is assumed that the organizations involved in steps 1 and 3 are capable of assessing how contextual factors in their country enable opportunities to enhance capacities of the EIA organizations involved and make these capacities explicit, so they can be discussed and agreed upon.

Figure 5.2: Overview of the four steps of the diagnostic tool



In order to validate and refine our tool we presented this four-step approach to three different expert panels and facilitated discussion by making use of participatory assessment with panels of expert practitioners, to benefit from their experiences and insights. This is explained in detail below. According to Hisschemöller and Cuppen (2010) the involvement of expert panels might result in miscommunication, especially if the expert group is heterogeneous, because then the experts have different backgrounds and use the same terms differently.



### **Expert panel meeting in Georgia**

The initial ideas for the building blocks of the tool, later called steps, were developed during the elaboration of an EIA capacity development program in 2012 in Georgia. The building blocks were subsequently discussed with a homogeneous group of eight representatives of the EIA authority in Georgia consisting of six senior staff members of the EIA department, including head and deputy head, and the head and deputy of the inspection department, during an EIA expert panel meeting on February 7, 2014. This took place in parallel with the evaluation of the aforementioned EIA capacity development program. The aim of the expert panel meeting was to evaluate whether the program had focused on the right EIA organization, namely the EIA authority, and whether the right capacities of the EIA authority had been enhanced and secured in order to improve EIA system performance. Based upon the discussion during this meeting, a prototype of the tool was subsequently developed.

### **Expert panel meeting at IAIA**

The prototype of the tool was then presented and discussed during an expert panel meeting at the annual conference of the International Association for Impact Assessment, April 21, 2015 in Florence, Italy. The expert panel meeting was attended by 21 delegates from 11 LMCs: China, Georgia, Lebanon, Namibia, Nigeria, Sudan, Surinam, Taiwan, Tanzania, Uganda, and Ghana. All experts held senior level positions, such as director or deputy director of the EIA authority of their country.

Prior to the IAIA conference all EIA authority representatives from the 21 LMCs attending the conference were invited to attend the expert meeting and to fill in a questionnaire beforehand. Completed questionnaires were received from six LMCs: China, Georgia, Namibia, Surinam, Taiwan, and Uganda. The aim of the questionnaire was twofold: firstly, to get the country experts to think about EIA system performance in their country by answering the following main questions: (i) What is the level of effectiveness? (ii) Which actors influence EIA effectiveness? (iii) Which capacities of the main actors influence EIA effectiveness? And (iv) How can EIA effectiveness be improved? Secondly, by using one set of terms we tried to avoid miscommunication between the participants during the panel discussion. The answers provided a good opportunity to involve the respondents in the discussion. The results of the questionnaire are not presented here because they provide country-specific information and do not contribute directly to the purpose of this paper.

Although the panel discussion was useful and valuable for testing the prototype of the tool, some critical remarks must be made. During the panel discussion there was a lot of misunderstanding and as a consequence different interpretation of the concepts central to our diagnosis tool. This is partly because the questionnaire had been filled in for only six of the 11 LMCs represented. Moreover, representatives from two countries stated that they did not want to discuss particular issues in public, such as the power relationships between the EIA organization and sector authorities or organizations in public; instead, they preferred a one-to-one meeting.

### **Expert panel meeting at the NCEA**

The same prototype of the tool was also presented and discussed during a panel meeting with eight experts of the international department of the Netherlands Commission for Environmental Assessment on June 8, 2015. The experts had been involved as advisors and trainers/coaches in capacity development of EIA systems for about 20 years in more than 30 LMCs.

In the following sections we discuss the steps and explain and justify how we adjusted the prototype based upon the testing with the IAIA and NCEA expert panels. We will explicitly mention lessons learned during the above process.

5.3.2 Step 1: Analysis of EIA system performance

**What to do:** The aim of this step is to raise awareness of the need that capacity development of the organizations in question is required to improve performance. This entails assessing the perceived level of substantive performance collaboratively with the organizations involved. The output is used to facilitate a discussion among organizations involved in EIA, during which their contribution and that of contextual factors to the level of substantive performance is analyzed and explained. It is important to emphasize that it is neither possible nor necessary to precisely determine the level of substantive performance at this stage.

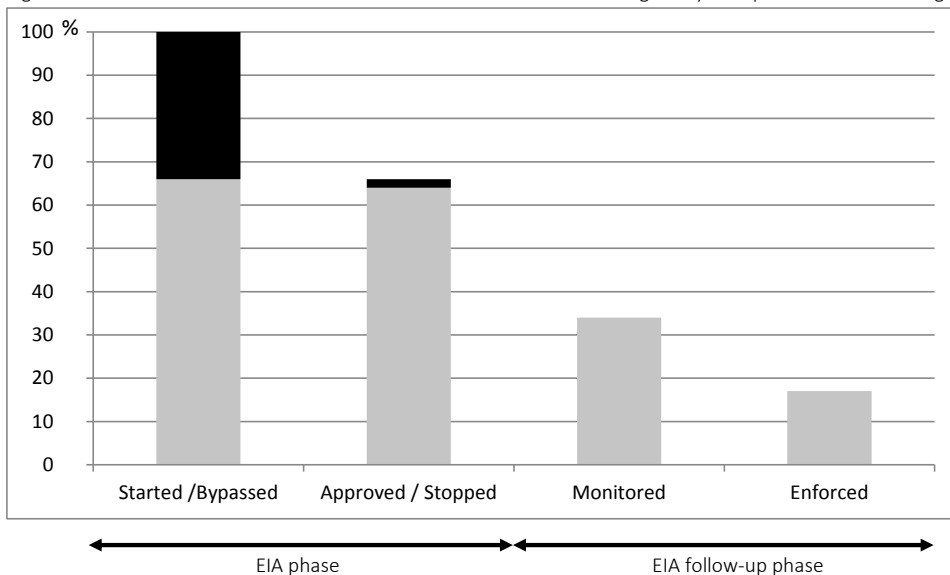
**How to assess:** To assist the joint determination of an impression of the level of substantive performance, use is made of the four indicators described below, three of which are, in principle, objectives and therefore suitable for use when meeting with several organizations having different interests (Armstrong, 2013). In table 5.1 we have listed 10 indicators for measuring performance and we explain which four were selected to use in our tool and why.

Table 5.3: Indicators for assessing the level of substantive performance

Indicators	Level of substantive performance (in % of the EIA projects)		
	Low	Moderate	High
a. Bypassing	<50	1 – 50	0
b. Stopping	<1	1 – 3	
c. Monitoring	<25	25 – 75	>75
d. Enforcing	0	1 – 50	>50

In table 5.3 these four indicators are operationalized and their substantive performance in terms of the extent to which the objectives have been achieved is scored on a three-point scale (low, moderate, high). A three-point scale is used so as to be able to identify sufficient difference. Because so few previous studies were available, the scores presented for the four selected indicators and the correlations between the scores and the level of substantive performance were based on assumptions. The selection of the most suitable indicators was discussed during the second expert panel meeting. The scoring of the indicators and the correlations or assumptions were presented, discussed, and agreed upon during the third expert panel meeting. Therefore, the scores and correlations presented in table 5.3 should be considered as a first outcome which needs to be further analyzed during follow-up research. As an example, figure 5.3 presents the results of the scores for the four indicators for determining EIA system performance for Georgia.

Figure 5.3: Illustration of the scores for the four indicators for determining EIA system performance in Georgia



Explanation:

- Started / Bypassed; indicates the ratio between % of the projects that started an EIA process or bypassed EIA.
- Approved / Stopped; indicates the ratio between % of the projects that are approved or were stopped.
- Monitored; indicates the % of approved projects that are monitored / inspected
- Enforced; indicates the % of approved and inspected projects that are enforced.

a. Indicator (bypass): Ascertain the % of projects implemented without an EIA despite an EIA being mandatory (bypassing EIA).

In countries with a moderate to high level of ownership by the EIA authority, this figure can best be estimated and can therefore best be provided by the EIA authority. In countries where the % bypass is high the EIA authority is probably not interested in providing a true figure, as this might give an indication of their low level of ownership. In countries with a high level of ownership and open access to data, an independent researcher can also do this estimation. Because this figure can only be estimated it is advisable to also request other organizations (e.g., NGOs) to estimate it.

We assume the following correlations between the score on this indicator and the level of substantive performance:

- Low/Moderate: Proponents with a low level of ownership execute a project without EIA and permit because they know that the EIA authority has a low level of ownership or they have the power to influence the EIA authority directly or indirectly. At the expert panel meeting in Georgia the EIA authorities stated that during the period of low ownership of the EIA authority (2004–2008) they estimated that about one-third of the projects requiring EIA bypassed the EIA procedure and this figure dropped to almost zero when ownership of the EIA authority became high after 2012 due to a regime change. A study on EIA performance in Armenia 1996–2003 indicated that many projects bypass EIA because proponents are unaware that EIA is required (CENN, 2004a).

- High: Proponents rarely bypass because ownership of EIA authority is high and the proponent is aware that bypassing will not be allowed. This assumption is supported by an EIA performance study of Estonia (Heinma and Pöder, 2010).
- b. Indicator (stopping): Ascertain the % of projects that started an EIA but were halted by the EIA authority due to expected unacceptable environmental impacts. According to Devlin and Yap (2008), in LMCs it is rare for a project to be rejected due to EIA; they consider this to be an indication of low EIA performance. It is therefore assumed that this indicator is suitable for identifying countries with a low performance.

This figure can be provided by the EIA authority. The % of projects stopped by the EIA authority due to expected unacceptable environmental impacts is small or zero. We assume the following correlation between the % stopped and the level of substantive performance. It is therefore expected that:

- Low: Zero or few projects (<1%) will be stopped, because the EIA authority has a low level of ownership and can be directly influenced by the proponent or indirectly through their allies. Examples from LMCs show the following figures: Armenia 1996-2003, <1% stopped (CENN,2004a) Azerbaijan 1996-2004, 0% stopped (CENN,2004b); Georgia 1995-2003 one project stopped (CENN, 2004c) and for the period 2008-2015 eight projects were stopped <1% (Ministry of Environment, 2016). Moreover, when a project has been stopped, this is often known, as in LMCs where there is opportunity for public debate, it has been discussed (Devlin and Yap, 2008).
- Moderate or high: A few projects (1–3%) are stopped for two reasons: (i) the EIA authority has the motivation and the means to stop projects that do not meet the requirements, and (ii) the proponents are aware at the start of the EIA that they have to meet certain environmental requirements otherwise they will be stopped. When a project has been stopped this is probably because the proponent was unaware that it did not meet requirements. Exceptionally, figures are available for part of India (an LMC in 1991-1994), showing 2% stopped (Banham et al., 1996), for two HICs: Lithuania (2001-2007), showing 2% stopped (Kruopienė et al., 2009) and for the Netherlands, showing 3% stopped (Ten Heuvelhof and Nauta, 1997).
- c. Indicator (monitoring): Ascertain the % of projects that have been monitored (compliance monitoring) or inspected and have been subjected to EIA and granted an environmental permit.

This figure can be provided by the authority responsible for environmental monitoring or inspection and indicates “the will” and “the ability” to perform this task. We assume the following correlations between the score on this indicator and the level of substantive performance: the higher the level of ownership of the EIA authority, the higher the score on this indicator and the higher the level of substantive performance.

- d. Indicator (enforcement): Ascertain the % of projects granted an environmental permit that need to be enforced, that are actually enforced, and that have been monitored, or inspected. Projects need to be enforced when the conditions stipulated in an environmental permit are not followed by the proponent.

This figure can be provided by the authority responsible for environmental monitoring, inspection, and enforcement and indicates “the will” and “the ability” to perform these tasks. According to Khadka and Shrestha (2011), the low score for indicators c. and d. in LMCs is due to the low performance of the respective environmental authorities.

**Experiences from the expert panel meetings:** At the IAIA meeting there was much miscommunication between the stakeholders involved on the use of the indicators to measure the level of substantive performance. It was concluded that the actual score for substantive performance cannot be determined by using the four selected indicators. The IAIA participants had no comments about the selection of indicators to measure the level of substantive performance and agreed that the use of these indicators could be helpful in facilitating a discussion among EIA organizations on the factors explaining substantive performance.

The NCEA experts supported the selection of the four indicators to measure the level of substantive performance but indicated that because two indicators actually measure procedural performance this is an indirect way of measuring the level of substantive performance of an EIA system. They suggested including indicator 7, which measures the “prevention effect”. However, this suggestion was not been followed up, as this indicator is time-consuming to use and therefore does not meet our criteria for the tool. The experts recommended using an absolute instead of a relative scale. This suggestion was adopted, resulting in a score on a three-point scale. They recognized and agreed with the demarcation between low, moderate, and high performance for the four indicators but emphasized that these were still hypothetical and needed to be tested in practice.

### 5.3.3 Step 2: Selection of the EIA organizations for capacity development

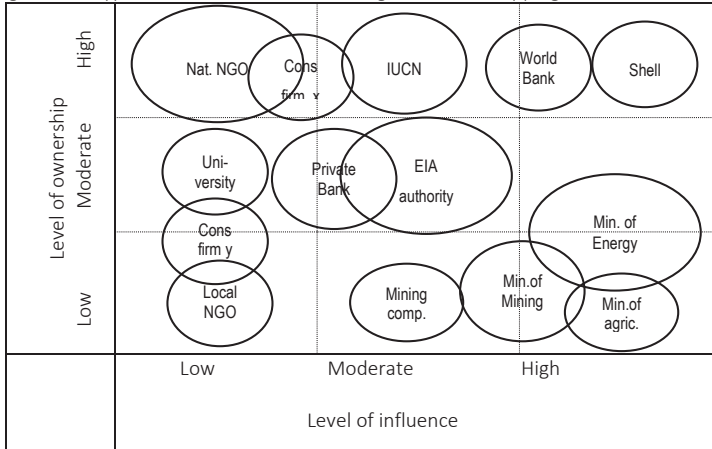
**What to do:** The aim of this step is to identify and select organizations involved in EIA whose capacities need to be and can be enhanced. The main organizations that can be involved were mentioned in section 2.3.

**How to assess:** The methodology for this step is based upon methods for stakeholder analysis and mapping (IBRD, 1998; Bryson, 2004). This method has been adjusted for mapping EIA organizations. All organizations involved in EIA need to be listed. In order to be able to select the organizations, their levels of ownership, influence, and importance need to be assessed, see figure 5.4 for an example.

- Level of importance is based upon the involvement in the number of EIA cases: (i) Low score: involved in few EIA cases; (ii) Moderate score: involved in most EIA cases, and (iii) High score: involved in all cases.
- Level of ownership, defined as an organization’s will and ability to use its capacity to achieve its national EIA objectives, needs to be assessed and scored on a three-point scale in terms of to what extent there is compliance with the EIA procedural conditions: (i) Low score: compliance limited or zero; (ii) Moderate score: level of compliance is unstable and ranges from low to high; (iii) High score: level of compliance is more stable and ranges between moderate and high.
- Level of influence, defined as an organization’s will and ability to use its capacity to achieve its own objective (Avelino and Rotmans, 2010). This needs to be assessed and

scored on a three-point scale in terms of to what extent an organization is able to achieve its own objective (goal attainment): (i) Low score: goal attainment is absent or small; (ii) Moderate score: goal attainment is unstable and ranges from low to high; (iii) High score: goal attainment is more stable and ranges between moderate to high.

Figure 5.4: Hypothetical illustration of EIA organization's mapping



Explanation: The level of importance is indicated by the size of the circle (the larger the more important)

Next, this information needs to be presented in the form of a country stakeholder map:

1. Draw a figure using two axes labeled ownership (y) and influence (x), and assign a scale of low, moderate, high to each axis;
2. Use proportional circles to represent importance;
3. Discuss and debate the location in the grid separately with all organizations listed;
4. Use arrows to illustrate relationships and to depict influence.

Use the figure to select the following groups of organizations whose capacity needs to be assessed in step 3:

- Organizations with a low score for ownership, a high score for influence, and a moderate to high score for importance. They might be less open to and supportive of capacity enhancement but if they are willing to co-operate, their contribution to system performance can be considerable, due to their great influence.
- Organizations with a moderate score for ownership and a moderate to high score for influence and importance need to be assessed in more detail because their capacities can probably be enhanced.
- Organizations with a high score for ownership and influence but a low to medium score for importance. According to the IAIA experts, this category generally consists of international organizations such as IFIs or donors. They have the capacity to influence or even force EIA organizations to improve their level of ownership, as suggested by Boesen and Therskilden (2005) as a feasible intervention.

There is no need to assess the capacity of the organizations with a high score for ownership and any score for influence and importance, as they can already be considered to be strong.

**Outcomes of the expert panel meetings:** The participants in the IAIA expert panel produced the following ranking for the seven types of organizations that according to the literature are supposed to have the largest influence on EIA performance. High influence: IFIs and donors; private proponents; EIA authority; Moderate influence: NGOs and public sector authorities; Low influence: public proponents and knowledge organizations (e.g., consultants). They added commercial banks as highly influential, as these increasingly only provide loans if EIA requirements have been met. They concluded that it would be useful to start with an extensive list of organizations involved in EIA and then prioritize them according to their expected influence on EIA system performance. As a result of this suggestion the level of influence was included as an indicator for selecting organizations.

The NCEA agreed with the list of main organizations identified by the international expert panel but suggested the inclusion of the following organizations as, depending on contextual factors, they are considered to possibly also influence on EIA system performance: the country's president, media, and judiciary. The experts agreed that ownership is indeed an important factor for determining EIA performance but is no guarantee of a high level of performance. They emphasized that application of the criterion influence is very important to be able to select organizations that are suitable for capacity development. For example, if an EIA authority has a high level of ownership and a public authority e.g., mining authority, has a low level of ownership, it is the NCEA's experience that the level of EIA performance in most LMCs depends on which of these two has the most influence. They also recommended a more precise definition of ownership in terms of willingness or commitment, and considered the level of ownership high if the actors want to invest their time and (usually) scarce resources. The criterion of influence was added as a criterion for selecting organizations suitable for capacity development.

#### 5.3.4 Step 3: Selection of the capacities for enhancement

**What to do:** The aim of this step is to assess the key capacities of the selected organizations and determine which of the key capacities of motivation or means needs to be and can be enhanced. This requires two assessments executed consecutively.

**How to assess the capacities:** The method for this step is based on work by Lusthaus et al. (2002), Kirchoff (2006), Stoeglehner et al. (2009), Van Loon et al. (2010), and Kolhoff et al. (2016). In section 2.3 we categorized the capacities of EIA organizations. Our tool focuses on assessing the key capacities of motivation and means, divided into respectively three and six sub-capacities. All sub-capacities need to be scored on a three-point scale: low, moderate, high. This score will be reached in a qualitative way and together with representatives from the organization being assessed and representatives from other organizations that are familiar with that organization.

Then, whether the capacities with a low or medium score can be enhanced must be assessed. This entails assessing the following: the will of the organization's management and contextual factors. This latter assessment can only be made together with representatives of the organization in question, as they are aware of the contextual opportunities for and constraints on enhancing capacities (Hope-Simpson, 1996). Hence, for the selected organizations, this will result in a list of capacities that are planned to be enhanced.

Based upon the results of the analysis in steps 2 and 3, three possible interventions can be identified to enhance the capacities of the selected organizations. The first option is change the motivation or the will, whereas the second option is change to the means or the ability through direct intervention supported by the management of the organization. These options can be executed complementarily. The third option is to change the motivation through indirect intervention in a situation in which an organization (usually the EIA authority or a sector authority) shows low EIA ownership. We agree with Boesen and Therskilden (2005) that this type of change can best (or only) be realized through powerful international organizations capable of, for example, replacing the leaders of an organization. When motivation of the respective organization has improved, the first two options for intervention can possibly also be applied.

**Outcomes of the expert panel meetings:** The IAIA respondents agreed with the selection and categorization of the key capacities of motivation and means and the nine sub-capacities. There was agreement that the most important driver for organizational performance is the sub-capacity of willingness or commitment. It was concluded that the other sub-capacities are also important for good performance and that it is neither possible nor desirable to distinguish a generic hierarchy between them, because the need for enhancement greatly depends on the stage of the EIA system's development. Therefore, they suggested making a country-specific assessment of each of the nine sub-capacities on a three-point scale for the selected organization(s) as a first indication of how an intervention should be developed.

The NCEA experts said they missed an elaboration of the enabling conditions or contextual factors that in their perspective could become important factors that could be enhanced or need to be developed in LMCs to improve EIA system performance. They suggested including an assessment of the enabling conditions in step 3 of the method. We acted on this suggestion by including a second assessment in step 3 in which we involve the representatives of the selected organization in assessing whether the capacities that need to be enhanced can be enhanced by considering the constraining influence of contextual factors. In addition, the NCEA experts suggested categorizing the capacities that need to be enhanced by using the following three categories: always, sometimes, not. We did not adopt this suggestion because we prefer that each of the nine sub-capacities be assessed.

### 5.3.5 Step 4: Developing securing mechanisms

**What to do:** The aim of this step is to develop mechanisms to secure the maintenance and further development of the capacities planned to be enhanced.

**How to develop securing mechanisms:** To secure the maintenance and further development of the capacities that have been enhanced the following four mechanisms can be developed: organizational learning, system learning, institutionalization, and accountability. The sub-capacities of willingness and leadership are considered as a condition for developing these securing mechanisms. If the capacities of one organization are enhanced, the following mechanisms can be developed: organizational learning, institutionalization, and accountability. If the capacities of two or more EIA organizations are enhanced in addition, system learning can be applied. Accountability can be applied at organizational level but will become more effective at system level if at least the following organizations are involved: on the one hand, a government organization and on the other, organizations representing civil society, such as NGOs.



**Outcomes from the expert panel meetings:** The concept of securing mechanisms was new to most of the IAIA and NCEA experts. The IAIA experts recognized that their organization's performance is improving due to organizational learning. They agreed that these mechanisms are important for ensuring that enhanced capacities will not be eroded but they had no firm opinion on how and when to apply which securing mechanism. As part of the operationalization of this step, the NCEA experts suggested developing guidelines for measuring the performance of these mechanisms. We cannot claim that this step has been tested. Before starting a discussion, more time needs to be allocated for introducing this topic to the experts.

## 5.4 Discussion and conclusions

In this paper we have described how we developed a diagnostic tool to enhance and secure the key capacities of major organizations with the aim of contributing to improved substantive performance of EIA systems in LMCs. First, a prototype of this tool was developed. This was subjected to expert review in two different settings and was then adjusted. In this paper we have described and justified to what extent this resulted in changes to the tool.

The value of this tool is that it builds upon the – limited – scientific knowledge available. It facilitates a better understanding of EIA system performance and the systematic selection of the capacities to be enhanced at organizational level. The tool provides suggestions for developing mechanisms to secure the maintenance and further development of the enhanced capacities of organizations. We conclude that the usefulness of the tool described in this paper can be verified in practice in LMCs by external or domestic actors. The tool can be further refined by testing the assumptions during application in practice.

There are four points for discussion. First, the tool supports the execution of an analysis of substantive performance. However, the information it generates is only an indication of the level of substantive performance. Second, the assessment and development of mechanisms to secure the maintenance and further development of capacities that are enhanced is fairly new in the EIA community; because of this, step 4 in our tool needs to be further developed and tested. Third, the development of the EIA regulatory framework is part of the EIA system but has not been incorporated in this tool. In the next version of this tool this factor could be elaborated and incorporated. Fourth, it was decided not to elaborate contextual factors explicitly as part of this tool. The expert panels emphasized the importance of these factors because they influence EIA substantive performance and because some of the contextual factors might possibly be changed through an intervention. Therefore, in the next version of the tool the contextual factors could be elaborated and incorporated.

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## Chapter 6: Conclusions and reflections

### 6.1 Introduction

This thesis aimed to provide a better understanding of the factors that explain the substantive performance of EIA systems in LMCs, in order to provide guidance for more effective capacity development, either by key actors involved in LMCs, such as Environmental Protection Agencies, or by international donor organizations. Substantive performance was defined in terms of informed decision-making about projects with potentially detrimental impacts on the environment (short-term objective) and in terms of environmental protection (long-term objective). This thesis focuses primarily on the latter objective.

The scarce literature tells us that substantive performance of EIA systems in LMCs ranges from no contribution to a moderate contribution to environmental protection, although anecdotal evidence shows that there are large variations between countries (Mwalyosi and Hughes, 1998; Bitondo, 2000; Marara et al., 2011; Kabir et al., 2013). Substantive performance in LMCs is generally considered to be lower than in HICs (Wood, 2003; Khadkha and Shrestha, 2011; Wells-Dang et al., 2016). The majority of performance studies in LMCs focus on so-called procedural performance, that is, the extent to which the various stages in the EIA process, such as scoping, review, and participation, are complied with (Espinoza et al., 2001; Ahmad et al., 2002; El-Fadl et al., 2004; UNECA, 2005; Kakonge, 2006; Khadkha and Shrestha, 2011; Wells-Dang et al., 2016). Little research has focused on measuring substantive performance in LMCs (Mwalyosi and Hughes, 1998; Bitondo, 2000; Marara et al., 2011; Kabir et al., 2013).

As a consequence, little is known about what factors affect substantive performance in LMCs, how context-specific these factors are, and to what extent they can be manipulated. Information about these factors is necessary to be able to identify whether and, if so, how to improve substantive performance of EIA systems in LMCs.

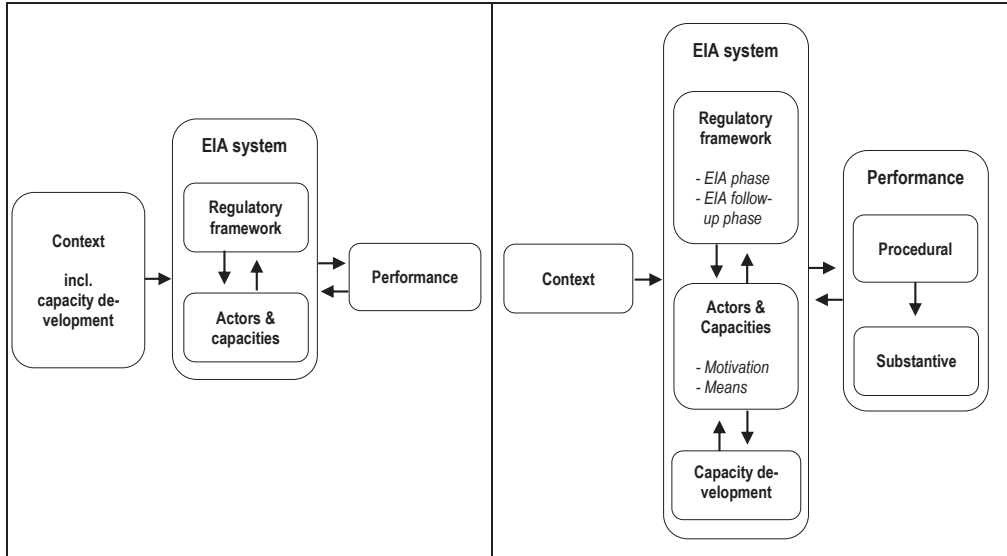
The aim of this last chapter is to present the main research findings and to reflect on the research. In section 6.2 the research questions will be answered. In section 6.3 the overall conclusions are presented. A reflection on the main findings will be presented in section 6.4 and a reflection on the methodology is presented in section 6.5.

### 6.2 Answering the research questions

#### 6.2.1 RQ 1: How can the factors influencing EIA system performance in LMCs be conceptualized?

Conceptualization of the factors influencing EIA system performance is important because it helps to identify dependent and independent variables, and which causal relations need to be studied to better understand and improve substantive performance. At the start of this research project there was no commonly accepted framework in the EIA literature. Therefore, this research started with the development of an initial conceptual model presented in chapter 2, which is reproduced in figure 6.1 and that was based upon a literature review and built mainly upon the work of Kakonge (1996); Cherp (2001); Annandale (2001); Ahmad and Wood (2002); Lusthaus et al. (2002), and Baser et al. (2008).

Figure 6.1: Factors influencing EIA system performance in LMCs: initial model (left) and revised model (right)



During the research, four minor refinements were made: see figure 6.1. Firstly, the variable ‘performance’ has been refined into procedural and substantive performance. Researchers who have studied EIA performance in HICs often assume that there is a strong correlation between procedural and substantive performance (Zhang et al., 2012; Arts et al., 2012). For LMCs this relationship has not yet been studied. It was decided to focus on substantive performance and study the correlation between the two forms of performance, the findings of which are presented in chapter 4. Secondly, in the regulatory framework, in addition to the EIA phase the EIA follow-up phase (compliance monitoring, inspection and enforcement) has been included, because the research presented in chapter 4 showed the importance of this phase in explaining substantive performance. Thirdly, the categorization of the actors’ capacities has been changed from a focus on the more technical capacities (see chapter 2) summarized as “means” toward a stronger focus on organizational capacities such as ownership, willingness, and leadership, summarized as “motivation” in figure 6.1 (see chapter 4). Fourthly, capacity development was included as an element of the EIA system, rather than as an external factor. In chapter 5 it is argued that capacity development should be initiated by domestic actors instead of external actors, as they are in a better position to secure that enhanced capacities are maintained and further developed. As a result, the revised conceptual model has been instrumental in identifying and structuring the main factors influencing EIA system performance.

After the initial conceptual model was published (Kolhoff et al., 2009) others contributed to the further conceptualization of substantive performance (Van Doren et al., 2013; Arts et al., 2012; Lyhne et al., 2015). Van Doren et al. (2013) developed a framework to evaluate the degree of substantive performance of SEA at project level, applied to the Netherlands, in which a hierarchy of six cumulative levels for effectiveness, a concept that resembles something that is called performance, were conceptualized: awareness of environmental impacts, considering these in decision-making, change in understanding and / or vision, adjusting decisions accordingly, decisions implemented, and environmental protection. This thesis research focuses on the latter three levels to evaluate substantive performance (chapter 4). The first three levels mentioned



have not been identified or measured in the thesis research but are assumed to be prerequisites for change in effectiveness of the latter three levels identified by Van Doren et al. (2013). Arts et al. (2012) developed a model to evaluate substantive performance at the project level in HICs, which was refined by Lyhne et al. (2015). There are two main differences between the model presented in figure 6.1 and the model of Lyhne et al. (2015). The model by Lyhne et al. (2015) is detailed and focuses on governance mechanisms and in particular the regulatory framework, whereas the conceptualization in figure 6.1 focuses primarily on the capacities of the main actors. And the model of Lyhne et al. (2015) is intended to explain performance at project level whereas the model presented in figure 6.1 aims to explain performance at system level, because that model is helpful for identifying the main organizations involved in EIA and to enhance their capacities in a structural manner.

### 6.2.2 RQ 2: How and to what extent is the EIA system influenced by its context?

The literature suggests that the context in which EIA is conducted is important for its performance (Kakonge, 1996, 1998; Cherp, 2001; Annandale, 2001; Mao and Hills, 2002; Bitondo, 2000, 2007; Clausen et al., 2011; Wells-Dang et al., 2016). It is assumed that one reason for the often weak performance of EIA systems is that in general, donors support the establishment of overambitious EIA legislation that cannot achieve its objectives because of constraining contexts (Wood, 2003; Cherp and Antypas, 2003; Doberstein, 2004). So a fit is needed between the ambitions reflected in the legislation and the context. In this thesis, context was therefore explicitly included in the conceptual framework (see figure 6.1). Chapter 3 investigated the influence of context on the EIA legislation whereas chapter 4 focused on the influence of context on substantive performance.

Chapter 3 showed that the context has an important influence on the adoption of EIA legislation and the level of ambitions set in that legislation. Three main categories of ambition have been distinguished: object of study, quality of information for decision-making, and accountability of decision-making. The following most important contextual factors were identified: the political system, the state of the environment, and international EIA conventions. The research presented in chapter 3 provides some illustrations of the influence of contextual factors on the adoption of EIA legislation in 1994 by all three countries studied. The UNCED in 1992 was considered as an important driver for adopting EIA legislation, and the authority responsible for EIA was supported by donors. The influences of these two factors in adopting EIA legislation is recognized in many LMCs (Hironaka, 2002).

Chapter 3 showed that the influence of contextual factors on the level of ambitions as reflected in the EIA legislation differs for two phases: the first phase of adoption of EIA and the next phase in which adjustments are made to the legislation. During the first phase in Georgia and Yemen the influence of the sector ministries on the ambition level was relatively small in comparison to the influence of the EIA authorities because the former were hardly aware of EIA and the latter were supported by donors. In Ghana the situation was different because sector ministries already had experience with a forerunner of an EIA type of tool, but the influence of the EIA authority was also stronger, due to support from civil society as a result of a legacy of environmental disasters caused by the mining sector. The EIA authority in Ghana, with support from donors, established a relatively ambitious EIA legislation. During the adjustment of the EIA legislation the sector ministries were aware of the potential effect of EIA in Georgia and Yemen. In Georgia the EIA authority was overruled after a government shift, that resulted in adjusted

and overall less ambitious EIA legislation. In Yemen the EIA authority was supported by the president to develop more ambitious legislation. It seems that the deteriorating environmental situation contributed to an increased environmental awareness of at least the staff in the office of the president but sector ministries with private interests, managed to delay this adjustment for many years. In Ghana, the ambition to execute EIA for plans was included in the second phase, and this was the result of a requirement (supported by the influential National Planning Commission) for international actors.

The research presented in chapter 3 indicated that some ambitions seem to be influenced by particular factors. The object of study seems to be influenced by the level of environmental awareness of the sector ministries and parliament. Secondly, the development of quality assurance of information for decision-making seems to be influenced by two main factors, on the one hand leadership and EIA experience of the lead EIA authority, and on the other hand the level of democracy of the political system. It seems that the more and stronger autonomous leadership and experience, the higher the ambitions for quality assurance of information for decision-making. It seems that a certain level of democracy is required before the highest ambition is aimed for.

The research presented in chapter 4 suggests that contextual factors, particularly the political system, can have a considerable constraining influence on the achievement of a moderate or high level of substantive performance. This is illustrated by a category of cases in which the proponent has a low level of ownership and the influence of the EIA authority on the proponent is limited because the latter has good relations with powerful sector authorities. The opportunity of these sector authorities to overrule the EIA authorities is assumed to be made available by the political system that is in place and that lacks the institutions to prevent this type of influence. Another example of the influence of the political system is when the independence of the judiciary is contested by the NGOs in Georgia and therefore they no longer bring EIA cases to court. These situations seem to be more or less comparable for Georgia and Ghana.

How do the above findings relate to the literature? In the EIA literature there is a debate about the importance of the context of EIA, particularly about how ambitious EIA legislation can contribute to performance in terms of environmental protection (Doberstein, 2004). Various scholars are of the opinion that the context largely determines the level of ambitions that can be realized (Wood, 2003; Cherp and Antypas, 2003; Doberstein, 2004). In contrast, others, particularly donors and IFIs, are of the opinion that EIA ambitions should be high because the context has limited influence *or* can be changed (UNEP, 2004; Li, 2008; IEG, 2010). The research presented in chapter 3 provides evidence in support of the first line of reasoning because this chapter suggests that the political system has an influence on the level of ambitions in EIA legislation. However, this thesis focused on three countries, and perhaps evidence in support of the second line of reasoning can be found in other countries.

In chapter 4 it was concluded that in both countries contextual factors, in particular the political system, enable the situation in which in some cases the rule of law is not applied and private interest prevail above the public interest of protecting the environment. In both countries the political system can be characterized as a young or new democratic system. The literature assumes a positive relation between application of the rule of law and the level of democracy because that enables checks and balances, transparency, participation of the public in decision-

making, accountability and an independent judiciary to be in place (Devlin and Yap, 2008). Blagescu and Court (2008) suggest a strong correlation between the regime type (non-democracies, new democracies, and consolidated democracies) and the influence of the civil society on policy-making. This might explain why although democratic institutions are in place decision-makers do not agree that in all cases checks and balances are applied. Chen (2014) argues that the independence of the judiciary is an important factor to secure that public interest prevails over private interest in EIA decision-making in democratic countries. To better understand the influence of the level of democracy of a political system on substantive performance it is recommended to study the following hypothesis in LMCs that have developed from non-democracies into new democracies, such as Indonesia or Myanmar: that in LMCs that have developed from a non-democratic system into a democratic political system, the level of substantive performance will rise due to increasing public involvement.

Concluding, firstly, the EIA ambitions of LMCs as reflected in the EIA legislation are to a large extent determined by contextual factors, such as the political system and the influence of international conventions dealing with EIA and the state of the environment. Secondly, substantive performance is influenced by the contextual factors, and the political system seems to be the most important factor, as it is assumed that this factor drives independence of the judiciary and the institutions that secure accountable decision-making, such as NGOs and compliance mechanisms.

### 6.2.3 RQ 3: Which capacities of the EIA organizations explain EIA system performance?

The conceptual model assumed that the organizations involved in EIA contribute to EIA system performance through their capacities. In the research presented in chapter 4 the focus is on the proponent and the EIA authority, as they have a formal role in each of the EIA process steps. To answer the above question first the findings concerning the measured level of EIA system performance as presented in chapter 4 are described. In addition, the measured level of performance is explained through the capacities of the proponent and the EIA authority.

In this research, long-term substantive performance is defined as the contribution of EIA to environmental protection. Environmental protection as such has not been measured directly. Instead, national and international environmental standards have been used to determine the level of substantive performance on a three-point scale; low when the national standards have not been met, moderate when they have been met and high when international good or best practice standards have been met. The national environmental standards might differ due to a different level of ambition as set in the EIA legislation. The level of substantive performance has been measured at three moments during the EIA process (at the start, during environmental approval and during follow-up) which provides insight in the change of the level of substantive performance during the process, see chapter 4. It has been assumed that the higher the score on substantive performance, the larger the contribution to actual environmental protection. It is concluded that the level of substantive performance seems in general to increase during the EIA phase and to drop during the EIA follow-up phase. It seems that the EIA process has overall slightly contributed to an increase of substantive performance.

At the start of the thesis research, a categorization of capacities of EIA organizations was co-authored that was based upon an extensive literature review resulting in six main categories of

capacities and 48 sub-capacities (Van Loon et al., 2010). To answer the question which capacities of the EIA organizations are more important to explain substantive performance, the categorization by Van Loon et al. (2010) was used and refined by consulting additional literature. The following are stated to be the main capacities to explain performance of an organization: willingness or motivation (Lusthaus et al., 2002); willingness or ownership and leadership (Lopes and Theisohn, 2003; Baser and Morgan, 2008); and ownership (Stoeglehner et al., 2009). Building upon Van Loon et al. (2010) and making use of the work of Lusthaus et al. (2002), Lopes and Theisohn, 2003), Kirchoff (2006), Baser and Morgan (2008), and Stoeglehner et al. (2009), a refined categorization was composed and presented in chapter 4 (reproduced in table 6.1) in which a more important role is given to the key capacity “motivation” or “the will to”, consisting of the sub-capacities willingness, leadership, and networking. In chapter 4, “the will to” is considered to be the most important key capacity to explain the level of ownership, defined as to what extent the primary actors aim to achieve the EIA objectives.

Table 6.1: Capacities of the key EIA actors

Key capacities		Capacities	Sub-capacities
Ownership	Motivation “the will to”	Organizational capacity	- Willingness to goal attainment and incentives - Leadership (e.g. strategy, performance perception of other key actor) - Networking (formal-/ informal linkages)
		Human capacity	- Number of staff
	Means “the ability to”	Scientific capacity	- Quality of information (e.g. compliance history) - Expertise (e.g. analytical skills) - Adjustability (organizational learning)
		Technical capacity	- Technical means
		Resource capacity	- Access to funds

Source: Based upon Lusthaus et al.,2002; Kirchoff, 2006; Van Loon et al., 2010.

The empirical research in chapter 4 was based upon twelve cases divided over two countries (Ghana, four cases and Georgia, eight cases). It was concluded that the level of substantive performance ranges from low to moderate, low when the national environmental standards have not been met and moderate when they have been met. The following conclusions were drawn to explain the level of substantive performance. Firstly, the proponent’s ownership or will is more important in explaining substantive performance than the EIA authorities’ ownership or will. Because, in a number of cases, the research indicates that public proponents can overrule the EIA authorities and private proponents get support from sector authorities to overrule the EIA authority. This conclusion supports the findings of Stoeglehner et al. (2009) for EIA for plans. Secondly, in the few cases where IFI’s supported proponents, the research findings indicate that the IFI’s have a considerable influence on proponent’s ownership or will. But only when IFIs remain involved during the EIA follow-up phase is the potential level of substantive performance achieved in the EIA phase achieved in practice, in terms of proposed mitigation measures. Kabir et al. (2013) and (IEG 2010) support this conclusion. Thirdly, the influence of the EIA authority on substantive performance is dependent on proponent’s ownership. When proponent’s ownership is high, the EIA authority can stimulate optimization of the project. When proponent’s ownership is moderate, a high ownership of the EIA authority during the EIA and the EIA follow-up phase is required, to ensure that project changes agreed during the

EIA phase are implemented. When proponent's ownership is low, the EIA authority has no influence on substantive performance. The influence of the public and NGOs on ownership of the proponent directly or indirectly through the EIA is usually limited. Fourthly, the research concluded that in general it is difficult to determine the contribution of the identified sub-capacities to explain the level of ownership by the proponent and the EIA authority. However, the research presented in chapter 4 showed that when the capacities of the EIA authority categorized as "means" are low, the sub-capacity leadership of the category "motivation" can make a difference to substantive performance. This is illustrated by the strategy that is applied by the EIA authority in Ghana and Georgia for compliance monitoring and enforcement. In Ghana a proactive strategy is applied, the limited means are invested in those projects that are expected to cause significant negative environmental and or social impacts. But in Georgia a reactive strategy is applied, the EIA authority primarily is willing to monitor and enforce when people start complaining. This conclusion supports the assumption by Lopes and Theisohn (2003) and Baser and Morgan (2008) that once ownership and leadership are in place, they ensure that the capacities identified as "means" contribute to performance.

It would be interesting for future research to study what explains the differences in ownership of the proponent and the EIA authority. As it is assumed by (Stoeglehner et al., 2009) that contextual factors have an influence on the level of ownership, it is recommended to execute this research in LMCs with different political contexts.

Concluding, the key capacity "the will to" or "motivation" of the proponent and the EIA authority is more important for determining the level of substantive performance than the capacities categorized under the key capacity "the ability to" or "means". From the research reported in chapter 4 it is also concluded that when ownership in terms of "motivation" and, in particular, leadership is high, other capacities are expected to be less problematic to build. As a consequence, capacity development should put more emphasis on strategies to improve the "motivation" of the proponent and the EIA authority, especially during the EIA follow-up phase.

#### **6.2.4 RQ 4: In what way is it possible to enhance and to secure key capacities of the main organizations involved in EIA in order to contribute to improved substantive performance of EIA systems in LMCs?**

Capacity development can improve substantive performance and therefore it is necessary that the weak capacities of the organizations involved in EIA are identified, enhanced and secured. In the framework of this thesis research it was decided at the start of this research to develop a diagnostic tool that provides guidance to identify the weak capacities of the main EIA organizations: see chapter 5. This tool provides guidance for the diagnosis, which according to Pearson (2011), is the first of a three-stage capacity development process consisting of, firstly, diagnosis, secondly, design, and thirdly, implementation, including monitoring and evaluation. This tool is a diagnostic tool that can be applied in a few days because it makes use of available data and requires little time. It consists of the following four steps: Firstly, the level of substantive performance is assessed by making use of four performance-measuring indicators, on the basis of which a discussion is facilitated among organizations involved in EIA to determine their contribution versus the influence of contextual factors to substantive performance of EIA. Secondly, the organizations will be selected based upon their score on the following three criteria:

the level of importance, the level of influence and the level of ownership. Thirdly, the key capacities “motivation” and “means” of the selected organizations need to be assessed, in order to identify which of the sub-capacities need to be and can be enhanced such as networking or the level of expertise. Fourthly, the tool identifies securing mechanisms that need to be in place to maintain and further develop the enhanced capacities. Two such mechanisms are (i) the institutionalization of learning outcomes in an EIA organization (e.g. by means of establishing a monitoring and evaluation system by the management), and (ii) accountability mechanisms functioning at EIA system level (e.g. by improving the transparency or the influence of NGOs). Based upon the results of the application of this diagnosis tool, a more time-consuming in-depth assessment of the weak sub-capacities may be required when considered necessary and supported by the respective organization(s), or some preliminary ideas for a strategy to enhance and secure the weak capacities can be elaborated.

In section 6.2.4 “the will” or “motivation” of the proponent was identified as the most important organization’s main capacity that accounts for the level of substantive performance of EIA systems. This raises the question of what can be done to increase the “motivation” and to secure and further increase the proponent’s “motivation”. Two capacity development strategies are identified in order to improve substantive performance. Firstly, increasing the proponents level of “motivation” could contribute to a higher level of substantive performance. This seems obvious, but direct change is most likely difficult because proponents that show a low level of ownership are assumed not to co-operate to increase this level. Indirect change might be possible where international finance institutes are involved: they can increase ownership, as the proponent is dependent on their funding. Secondly, since the influence of the EIA authority on the level of ownership by the proponent is limited, EIA authorities are advised to adopt a pro-active strategy, focusing on those projects where the largest contribution to environmental protection can be achieved. These strategies have been elaborated in chapter 4.

The diagnostic tool builds upon the limited research that is available on capacity development for improving EIA system performance in LMCs (Annandale, 2001; Doberstein, 2003; Kirchoff, 2006; 2016; Bitondo et al., 2014; Dijkstra et al. 2016). SAIEA (2011) and NCEA (2015) are, as far as known, the only organizations that have developed a comparable tool that aims to assist the main EIA organizations in understanding their level of performance, by identifying and analyzing their weak and strong capacities, given the country-specific EIA legislation. The tool developed by SAIEA (2011) is primarily meant as an African benchmark for the quality of the EIA legislation and it provides some information on procedural performance of the main actors by answering 35 questions. The diagnostic tool developed by the NCEA (2015) aims to assess the procedural and substantive performance of the EIA system jointly with EIA stakeholders by making use of a list of about 600 questions and discussing the findings.

The diagnostic tool developed in chapter 5 contributes to the abovementioned tools in the following ways. First, it is based on scientific literature, although this literature is limited. Second, it guides the diagnosis of substantive performance of the EIA system in a systematic manner through a four-step approach. Third, it explicitly includes the identification of possible mechanisms that secure that capacities are kept at an adequate level or even strengthened.

In order to improve the diagnostic tool, future research should address: (i) the elaboration of the interventions in order to enhance the capacities, particularly “motivation” (ii) the elaboration of identified and additional securing mechanisms and (iii) the development of a method to *ex ante* assess the feasibility of the proposed interventions.

### 6.3 Overall conclusions

The aim of this thesis research was to provide a better understanding of the factors that explain EIA system substantive performance in LMCs in order to provide guidance for capacity development that contributes to improved performance of EIA systems in LMCs. This research objective consists of two parts, which will be dealt with successively in this section.

#### **Toward a better understanding of factors explaining substantive performance**

In this research, long-term substantive performance is defined as the contribution of EIA to environmental protection. Environmental protection as such has not been measured directly. It is concluded that the level of substantive performance seems in general to increase during the EIA phase and to drop during the EIA follow-up phase (i.e. when the projects that were subject to EIA are implemented, whether or not in revised form as a consequence of the EIA phase). Overall, it seems that the EIA process has slightly contributed to an increase of substantive performance.

The level of substantive performance can be explained by three main groups of factors, as explained in chapter 2: the EIA ambitions as reflected in the EIA legislation, the key actors and their key capacities, and contextual factors.

The ambitions as set in the EIA legislation are important, as they determine the potential of EIA that can be utilized. This potential can range from low (when, for example, only provisions for mitigating measures are included), to high (when provisions for developing alternatives are also included). The development of the ambition level reflected in the EIA legislation seems to be largely determined by contextual factors, such as the political system, the influence of international conventions dealing with EIA, and the state of the environment. There is an indication that the level of democracy of the political system might explain the inclusion of provisions for public participation. To what extent the ambitions are applied in practice is determined by the other two groups of factors that have been identified: the key actors with their key capacities and contextual factors.

The research found that ownership of the primary actors, the proponent, and the EIA authority, is a key capacity that explains EIA system substantive performance to a large extent. The level of ownership by the proponent is more important than the level of ownership of the EIA authority to explain substantive performance. Other actors, such as donors and international finance institutes, can have a considerable influence on the level ownership by the proponent; in this research, NGOs had only limited influence on the level of ownership by the proponent and of the EIA authority.

#### **Guidance for capacity development to improve EIA system performance**

The research has contributed to a better understanding of the factors determining substantive performance. Based upon these insights a diagnosis tool has been developed that provides

guidance for development of the capacities of the main EIA organizations. This tool provides systematic guidance on which capacities of which organizations need to be enhanced and which securing mechanisms can be implemented in order to maintain and further develop the capacities enhanced. But the research presented in chapter 3 also provides guidance for a debate about how ambitious EIA systems should be. It was concluded that contextual factors— in particular, the political system —have a considerable influence on the ambitions as reflected in the regulatory framework. A framework has been developed to analyze and classify the ambitions of the three countries studied. This framework can be used to explore the room for maneuver for more ambitious EIA objectives and in this way facilitate a debate about what to achieve with EIA in a particular country.

## 6.4 Reflection on the main conclusions

The main conclusions of this thesis research raise four more fundamental questions that fall beyond the scope of this research but are important to be addressed because they might affect future research and capacity development to respectively better understand and improve EIA system performance.

### **Is procedural performance a good indicator for substantive performance?**

In chapter 1 it was shown that an overwhelming majority of EIA system evaluations in LMCs focus on procedural performance, in particular in the EIA phase, and only a very small minority focus on substantive performance. One of the possible reasons for this focus on procedural performance during the EIA phase is the assumption that the strong correlation between procedural and substantive performance shown for Western HICs (Arts et al., 2012; Lyhne et al., 2015) is also true for LMCs. The research presented in chapter 4 shows that the correlation between procedural performance (EIA phase) and substantive performance is weak and that this correlation is stronger when the EIA follow-up phase is included, but the research indicates that the latter correlation is not as strong as that observed for Western HICs by (Arts et al. (2012) and Lyhne et al. (2015).

Concluding, procedural performance is a condition but no guarantee for substantive performance in LMCs. Studies that measure procedural performance during the EIA phase do not provide a reliable indication of the level of substantive performance, this reliability increases when the EIA follow-up phase is also included.

### **Why is ownership by the proponent so low?**

The research revealed that the level of ownership by the proponent is the most important factor that explains the level of substantive performance: for a quarter of the projects evaluated during the EIA phase and half of the projects during the EIA follow-up phase, the proponents showed a low level of ownership, with the public proponent having a slightly better score than the private proponent (Appendix 2, table 3). The research indicated some explanatory factors for the low levels of ownership but these were not studied systematically, as this was not the aim of the research. It is, however, important to better understand why this level of ownership is so low, because these insights can possibly lead to better guidance and an improvement of substantive performance.



In the literature, the low level of ownership of private proponents, mainly environmental ownership, has primarily been studied in HICs (Kagan and Scholz, 1984; Bansal and Roth, 2002; Kagan et al., 2003), whereas this has hardly been studied for the public proponent in HICs and even less for the public proponents in LMCs (OECD, 2004; INECE, 2009). According to INECE (2009) in each country there is always a group of private proponents that show a low level of ownership. This group will not comply unless they are forced to do so. According to the rationalist theory, this group is motivated by self-interest and they make a calculated choice between the pros and cons of compliance or non-compliance, known as the logic of consequence (Kagan and Scholz, 1984; Bansal and Roth, 2002; INECE, 2009). This is different from the group that shows a moderate to high level of ownership. The explanation can be found in normative theory; this group of actors in principle follow the rules, known as the logic of appropriateness (Kagan and Scholz, 1984; 1998; Bansal and Roth, 2002; INECE, 2009).

Concluding, the literature provides some insights that explain the low level of EIA ownership of the private proponent and enforcement as the strategy to increase it. These insights are mainly based on research in HICs and therefore they need to be tested in LMCs to show their value for these countries. Moreover, research is also required in LMCs, to explain the low level of ownership of the public proponent.

#### **Why is ownership for substantive performance so low?**

It is remarkable that so many LMCs, whether or not supported by donors, have invested in establishing EIA systems in LMCs and are supporting capacity development and yet the effectiveness of EIA as a tool in terms of achieving the long-term objective has hardly been studied (chapter 1) and, moreover, seems to be relatively low (chapter 4), particularly in comparison with that in HICs (Arts et al., 2012; Lyhne et al. 2015). Why do domestic and international actors involved in EIA system development in LMCs accept this situation? This question is hardly discussed in the EIA literature. Below two possible explanations are provided.

The first possible explanation relates to what people want to achieve with EIA. Many representatives of the Western EIA community seem to be of the opinion that EIA should not only contribute to environmental protection but also to enable public participation in order to execute fundamental principles of democracy and strengthen the democratic fabric of society in LMCs (IAIA, 1999; Sinclair et al., 2008; Glücker et al., 2013). By supporting EIA, the western HICs are distributing their values of giving a voice to the people in decision-making. The second possible explanation is that domestic actors, international donors and IFIs use EIA in a symbolic way, i.e. meet EIA requirements in order to be accountable to their constituents in terms of respecting the environment. The research by Kabir et al. (2013) and the research presented in chapter 4 support this assumption.

It needs to be studied to what extent these motives drive the survival of EIA and hamper a critical attitude toward the study and effectiveness of EIA as a tool in LMCs.

#### **Are there alternative tools for stimulating environmental protection?**

Finally, the question needs to be answered whether the long-term objective of EIA can also be achieved by making use of other tools. The literature suggests two alternatives: prescriptions or application of best available technology (BAT) (Runhaar, 2016) and the introduction of EIA for plans (i.e. Strategic Environmental Assessment; Briffett et al., 2003).

Runhaar (2016) made a typology of tools that aim to incorporate environmental objectives in government policies and practices. He categorized EIA as a regulatory tool that is associated with top-down governance. Runhaar (2016) identifies an alternative namely, replacing the EIA phase of the EIA process through prescriptions in the environmental permit and the obligation to stipulate BAT. As far as known, no country in the world applies this tool instead of EIA. Singapore comes closest, as they have an ad hoc EIA system and very stringent environmental standards that are well enforced (World Bank, 2006). Therefore, one can only hypothesize whether this tool could be an alternative for EIA. Below, four arguments will be discussed: two supportive and two against the alternative tool.

Arguments supporting the replacement of EIA by BAT are the following. It is assumed that BAT is primarily applicable in a small group of mainly industrial and extractive industries projects for which BAT can be standardized and applied. BAT is less applicable for many other groups of projects, such as linear infrastructure projects and complex projects such as port development and hydropower development, because these projects require a project- and site specific assessment that can potentially be fulfilled by EIA. This is supported by Lattemann (2010), who states that for desalinization plants BAT can be used and EIA is required to assess the site-specific aspects. However, for the group of projects in which BAT is applicable, the advantage is that compared with EIA, application is less costly and time-consuming for the proponent and the EIA authority, while the expected effectiveness in terms of contributing to environmental protection is more or less similar. It is assumed that BAT does not consider public involvement, a provision that is part of EIA although often weakly applied in practice. In conclusion, it would be interesting to execute an experiment in an LMC, in which both tools can be applied in practice and compared, to assess their pros and cons.

The second alternative for EIA is introduced by Briffett et al. (2003). Briffett et al. (2003) state that implementation of EIA for projects in Asian countries is weak and to improve the contribution of EIA to environmental protection they argue that the issue of alternative site selection should be taken out of EIA for projects and should become part of EIA for plans, as it is expected that EIA for plans provides better opportunities to contribute to environmental protection than EIA for projects. This means that EIA for plans first need to be introduced in LMCs. But as long as the public project proponent responsible for EIA for projects shows a low level of ownership to EIA for projects, it is uncertain whether the potential added value of EIA for plans will be utilized as the public proponent for EIA for plans is in general the same organization. Therefore, it is recommended to make an assessment of EIA systems in LMCs that have introduced EIA for plans and have shifted site selection from EIA for projects to EIA for plans.

Concluding, it seems unlikely that shifting site selection from EIA for projects to EIA for plans will improve substantive performance of EIA in LMCs, but this assumption can be studied. An alternative to the present form of EIA in LMCs might be mandatory use of BAT in combination with a strong level of ownership of the EIA authority during the EIA follow-up phase, resulting in adequate enforcement. This might be interesting to study further for some categories of projects, probably those involving industrial and extractive industries.

## 6.5 Reflection on the research approach and methodology

### **Scope of study is limited**

The research in this thesis focused on long-term substantive performance of EIA systems. The research purposely did not study to what extent EIA contributed to the short-term substantive performance that is in general defined as well-informed decision-making. This is important to acknowledge because in the discourse on well-informed decision-making the idea that decision-making should also be acceptable to the people affected, framed as “a social license to operate” is receiving growing attention in the EIA discourse (Vanclay, 2015). The research did not consider the social aspects explicitly either. This is important to acknowledge because in a growing number of countries social effects are increasingly being considered to be part of EIA in LMCs (NCEA, 2016).

Concluding, in this research one should take into consideration that the full potential of EIA in the countries studied has not been assessed because the short-term objective and the social aspects were not part of the research.

### **Scope of the research and selected countries**

The empirical research for this thesis was executed in three countries: Yemen, Georgia, and Ghana. Unfortunately, the research in Yemen had to be stopped due to the deteriorating safety situation, with the result that substantive performance has not been measured and explained. The additional research that has been conducted in Yemen, Ghana, Maldives, Nicaragua, and Costa Rica with MSc students (see Van Loon et al., 2010; De Jong et al., 2012; Glücker, 2012 and Glücker et al., 2013) has improved understanding of the factors contributing to EIA system performance (chapters 3 and 4). The focus of these studies was, respectively, an analysis of the capacities at system level in Yemen (Van Loon et al., 2010), donor-driven indirect learning at EIA system level, tested and compared for Ghana and the Maldives (De Jong et al., 2012), and the role of public participation in EIA on the basis of a comparative assessment between Nicaragua and Costa Rica (Glücker, 2012 and Glücker et al., 2013). The studies by Van Loon et al. (2010) and De Jong et al. (2012) have also contributed to the development of guidance for capacity development (chapter 5).

The research has indicated the importance of the political system as an important factor explaining the level of substantive performance. Georgia and Ghana, in which substantive performance was studied in more detail, are countries with a comparable political system that can be characterized as young democracies and are probably illustrative for a group of LMCs with a comparable political system. It is therefore unfortunate that the research in Yemen - a country with a less democratic political system - had to be stopped, because this country could have been illustrative for LMCs with this type of political system.

It is important to acknowledge that the research in the selected countries was done at the request of the responsible directors of the EIA authority. They were willing to co-operate with this research and support the public discussion and presentation of the findings that aimed to improve performance. It requires leadership to request such research, because they knew that the findings would be critical and in a political situation that cannot be considered as “comfortable”. This assistance contributed enormously to the research through the access provided to

all information and key respondents. It is assumed that this level of willingness of the EIA authority is not illustrative for the LMCs and therefore it is expected that the findings for Ghana and Georgia are typical for the group of LMCs that have a better score than the average LMCs.

### **Research method and data collection**

In this research, surveys have not been used to gather data, as the author was aware that the chance of misinterpretation of terms and socially desired answers could be considerable. This was illustrated by the expert panel meeting at the IAIA conference in Florence in 2015, where all 21 participants from 11 LMCs, all working for the EIA authority, had difficulty understanding each other due to the different definitions of terms such as the EIA system and substantive performance. Moreover, key respondents working for the EIA authorities provided information—often confidentially—about how sector authorities influence EIA decision-making by using informal institutions such as political pressure. It was therefore decided to use other forms of data gathering: desk research, site visits, case studies, interviews, and expert panels (see section 1.6).

In chapter 4, the findings of twelve case studies (four in Ghana and eight in Georgia) are presented. Due to limitations in the budget and limitations in the access to some sites it was not possible to visit the sites of all the cases studied. Although the findings have been validated with the stakeholders in the respective countries, the validity of the findings could have been further increased if it had been possible to assess the projects on-site.

As explained in chapter 4, the level of substantive performance of the EIA system was measured and explained by studying twelve cases (four in Ghana and eight in Georgia). Three criteria were applied for the selection of these EIA case studies: they should be in the phase of construction or already be under construction or implemented; a full record of documents need to be available; and they should represent the full range of projects. The projects that were selected were all approved and projects that were stopped during the EIA process were not covered. The findings were discussed during validation meetings and it was concluded that the projects studied are illustrative for the category of approved projects, which in both countries is by far the largest category of projects.

### **Final thoughts**

The research findings regarding contribution of EIA to environmental protection in LMCs are disappointing. This research provides some suggestions that could contribute to better performing EIA systems in LMCs, albeit most probably up to moderate level. The level of motivation of the proponent is crucial in this. Important conditions to improve the proponent's motivation are a strongly motivated EIA authority and an enabling context that offers the civil society the opportunity to be involved in EIA. Capacity development by international and domestic actors can play an important role in enhancing the proponent's motivation and the motivation and means of the EIA authority. Therefore, the international community supporting the development of EIA systems in LMCs should provide more support to improve performance in the phase of EIA follow-up. At the same time they should support an autonomous and continuous learning process by the organizations involved in EIA, as self-sustaining capacity development can optimize the contribution of EIA toward better environmental quality.

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## Appendix 1: Supplementary information to Chapter 1

The selected articles on procedural and substantive performance of EIA in LMCs that were included in this thesis research and had been published in three journals during the period 1996–2015

Author(s)	Country	Performance PP / SP*	Author(s)	Country	Performance PP / SP*
1996 Banham et al.	India	PP+SP	2006 - Kakonge (b) - Paliwal	Gambia India	PP PP
1997 Lo et al. Leu et al.	China Taiwan, Malaysia, In- donesia	PP PP	2007 - Bitondo et al. - Zeremariam et al. - Ali - Alemagi et al.	Cameroon Eritrea Sudan Cameroon	SP PP PP PP
1998 - Olokesusi	Nigeria	PP	2008 - Nadeem et al.	Pakistan	PP
1999 - None			2009 - Badr	Egypt	PP
2000 - Bitondo - Memon - Glasson et al. - El-Fadel et al.	Cameroon Malaysia Brazil Lebanon	PP PP PP PP	2010 - Ruffeis et al. - Van Loon et al. - Toro et al. - Haydar et al.	Ethiopia Yemen Colombia Syria	PP PP PP PP
2001 - Mokhehle et al. - Annandale - Appiah-Opuko - Zubair	Lesotho Maldives Ghana Sri Lanka	PP PP PP PP	2011 - Clausen et al. - Badr et al. - Marara et al.	Vietnam Egypt Kenya, Tanzania, Ethiopia	PP PP PP+SP
2002 - Mao et al. - Bektashi et al. - Obbard et al. - Momtaz - Ahmad et al.	China Azerbaijan Vietnam Bangladesh Egypt, Tunisia	PP PP PP PP PP	2012 - Panigrahi et al. - Kabir et al.	India Bangladesh	PP PP
2003 - Turnbull - Purnama - Wang et al.	Fiji Indonesia China	PP PP PP	2013 - Ren - Kabir et al. - Sandham et al.	China Bangladesh South Africa	PP PP+SP PP
2004 - Ahammed et al. - Innanen - Khusnutdinova - Palerm et al. - Briffett et al. - Ramjeawon - El-Fadl et al.	Bangladesh Turkey Uzbekistan Mexico Malaysia Mauritius MENA coun- tries	PP PP PP PP PP PP	2014 - None		
2005 - None			2015 - Saif et al. - Bilgin	PP PP	Pakistan Turkey

\*PP = procedural performance; SP = Substantive performance.

Source: Environmental Impact Assessment Review, Journal of Environmental Assessment and Policy Management; Impact Assessment and Project Appraisal.



# Appendix 2: Supplementary information to Chapter 4: The influence of actor capacities on EIA system performance in low and middle income countries illustrated for Georgia and Ghana

## 1. Introduction

This supplementary information consists of four sections. In the first part the methodology is further explained, namely the desk research and validation of research findings. In table 1 the number of interviewees divided over the different actor groups per country are presented and in table 2 a list of issues is presented that were used during the semi-structured interviews. In the second part primary data is presented in the tables 3 and 4. Table 3 presents all the primary data that is used to determine the level of procedural- and substantive performance. In table 4 the level of ownership of the proponent and the EIA authority for both EIA phases is presented as well as the scores on the main contextual factors. Table 5 provides a formula that is used to determine the level of procedural performance. In figure 1 the scores on substantive performance (see also table 3) are also presented in a graphic way for each of the twelve cases. In the third part of this supplementary information the twelve cases are briefly described.

## 2. Methodology

### **Desk research**

During the desk research the documents and reports produced in each of the procedural steps by the proponent and EIA authority have been studied and compared to identify the project changes that have been made and the decisions that have been taken during these steps. For the Ghana cases we studied the starting document, the scoping report, response to the scoping report, the EIA report, the review report, the environmental permit, and inspection report(s). For the Georgia cases we studied the starting document, the EIA report, the EIA report, the review report, the environmental permit and inspection report(s). As stated in the paper in Georgia there is no formal scoping phase and therefore a scoping report is not prepared and has therefore not been studied during the desk research. All the documents studied have been made available by the EIA authority in respectively Ghana and Georgia and have been studied on site in the office of these respective authorities.

### **Interview of actors**

In table 1 the number of interviewed people divided over the different actor groups per country are presented. In Georgia, there are only a few national NGOs that are frequently involved in EIA procedures. In total two NGOs were active in the cases studied in Georgia. One international NGO was involved in one case but has not been interviewed. The other NGO (Green Alternative) is well known in Georgia linked to international NGOs and for many years active in EIA in Georgia and has been involved in a number of the cases studied. Therefore, this NGO was selected and has been interviewed.

Table 1: interviewed actor groups per country

	Total Ghana	Total Georgia
EIA authority	15	39
Proponent / consultant	12	11
NGOs / affected people	23	1
Research institutes	1	3
Other Government authorities	2	12
Total	53	66

In table 2 main issues are listed that have been used during the semi-structures interviews with the people mentioned in table 1. Dependent on the relevance for a specific stakeholder group a selection of the issues listed were used during the interviews.

Table 2: Issues raised during semi-structured interviews

1. What is the level of resources, knowledge and network of each actor (see questions for these capacities below)?
2. How often did the actor achieve their goals completely/partly/not at all during each EIA project stage?
3. Suitability of prior education and work experience for job – which education did the actor have? Which working experience? Does the educational and work background of the actor equip them for their current job requirements?
4. Experience with EIA – how extensive is the actor’s involvement with EIA (frequency per year, amount of years)
5. Equipment and methodologies used – which equipment was used, did the operator receive training to use the equipment? Are methodologies clearly specified in handbooks and used in practice?
6. Perceived goals of EIA (sub)stages - which expressed goals did the actor aim for during each EIA process stage?
7. (In)dependence of knowledge actors – What is the place of the knowledge actor in their organizational hierarchy? What knowledge do they contribute to the process? What is the quality and comprehensiveness of the knowledge they introduce?
8. Knowledge gathering (in network) – who had which information at what stage in the timeline of the EIA process, and who shared which information at what time with whom during the EIA process?
9. Discourse / issue framing – which issues are expressed by actors as being central to the negotiations in the EIA process (e.g. technocratic, bureaucratic, environmental conservation)? How is the problem defined?

10. Type of knowledge used (process, content, informal) – did the actor focus on content of environmental assessment or permit requirements, or was the focus on influencing process rules? Was the information used related to the formal requirements of the EIA process?
11. (Type of) evaluation knowledge available – which processes are in place to evaluate outcomes of EIA process stages? Which information is used in this evaluation?
12. Mechanisms for learning in place – Do changes in written or operational policy result from evaluation efforts?
13. Staff hours allocated to EIA process – how many staff hours are available to the actor to participate in the EIA process?
14. Equipment available – which database, computers, transport, environmental modelling software etc. does the actor have access to?
15. Travel expenses allocated – what is the allocated budget for travelling to meetings and project sites for observations?
16. Source of funding (fixed budget, periodical renewal of budget allocation) – who allocates the budget and what are the conditions for the allocation?
17. Amount of connections – how many connections can be traced for each actor pertaining to the EIA process?
18. Directionality of connections – who contacts who in the network? What is the reported reason to contact others?
19. Policy level of connections – at which policy level do the network connections operate?
20. Formal or informal connections – are the contacts with other actors who have a formal role in the EIA process, or are boundary actors contacted that formally do not have a role in the EIA process but can pressure actors within the EIA process?
21. Quality of connections – What are the network connections based on (business network, friendship/family relations, knowledge about EIA, political influence, duration in years and intensity of contact)
22. Social status of actor within the network – what is the self-reported status of actors in the network? What is their status as seen by the other actors?
23. (In)visibility of the network – to what extent are other actors aware of the network connections of actors in the EIA process? To what extent is the general public aware of the network?
24. Did the actor have a formal role and responsibility allocated to them in the EIA process?
25. Do the goals of the actor align with EIA process goals?

26. Do the goals of the actor align with the goals of other actors (co-ownership of goals)?
27. Did the actor participate in the EIA process beyond the minimum requirements as laid down in their mandate, did they fulfill the minimum requirements, or was the actor's compliance to EIA process requirements below the minimum requirements?
28. Duration of involvement – how long was the actor involved in the EIA project?
29. Intensity of participation – were the same representatives involved in each meeting?
30. Determination of formal agenda points for meetings – who created the agenda?
31. Directed towards EIA process goals or other goals – were the actions of the actor directed to achieving EIA process goals?
32. Focused on own or mutual benefit – were the goals aimed for in line with the interests of other parties?
33. Interaction style (leading / dictating, assertive / passive) – was the leadership style confrontational or explorative with regard to negotiating outcomes? Was the expressed leadership active or avoiding? Did the actor create situations that enhanced the trust levels in negotiations? Were requirements actively enforced?
34. Task-oriented or relation-oriented – Was the actor focused on keeping good relations with other actors? Was the actor focused on ensuring the quality of the environmental assessment/permit procedure/information used in compliance monitoring
35. Use of media – did actors mobilize journalists/papers/internet sites to support their goal achievement?
36. Development/change of use of network, resources, and knowledge during EIA process – did the actor use different knowledge/network contacts/resources during different stages of the EIA process? Which circumstances triggered a change in the use of knowledge/network/resources? Did the emphasis of the actor on the use of either knowledge/network/resources vary per stage of the process?
37. Development of expressed goals during EIA process – do the actors report a change in the goals they were trying to achieve at the onset of the EIA process, during the process, and at the end of the process?

### Validation of results

In order to validate the research findings validation workshop have been organized in each of the respective countries studied Ghana and Georgia.

Objective of the validation workshop is twofold: firstly, to check with the people who have been interviewed or were involved in the cases studied whether the description of the cases and analysis are in accordance with their observations. Secondly, to what extent the findings are representative for the performance of the EIA system. Therefore, during the validation workshops in Ghana and Georgia the following steps have been implemented:

1. Firstly (nearly) all people that have been interviewed (or that played a role in the EIA cases) have been invited to attend the workshop. In Ghana the senior staff of the EIA department and some experts of other departments attended the workshop. In Georgia senior staff of the EIA department, some experts of another department and one consultant attended the workshop.

2. Secondly, the preliminary description and analysis of the cases was presented plenary to the people attending the workshop. They were asked whether the description and analysis of each of the cases is in accordance with their observations. The second step of the workshop did not result in changes of the Ghana cases and resulted in minor changes of the analysis of one case studied in Georgia.

3. Thirdly, the people attending the workshop were asked whether the analysis findings of the cases were representative for other cases.

It was concluded during an open discussion during the third step of this approach in Ghana as well as in Georgia that the analysis findings of the cases are considered to be illustrative (not representative) for the majority of cases with comparable project characteristics

### **3. Baseline data**

In this section table 3 and 4 present the base line data that is used for the analysis. Table 5 shows how the level of procedural performance for the EIA- and EIA follow-up phase have been calculated.

To measure the quality of the EIA report the following criteria have been used: To what extent the country specific legal mandatory requirements concerning the contents of an EIA report have been met. A three point scale low, moderate and high has been used to categorize the quality of the EIA report:

- Low quality: EIA report does not meet the national mandatory requirements on the contents of an EIA report;
- Moderate quality: EIA report meets the national mandatory requirements on the contents of an EIA report;
- High quality: EIA report meets the national mandatory requirements and international good practice standards on the contents of an EIA report.

Two sources were used to assess the quality of the EIA report (i) the review report prepared by the reviewing authority and (ii) a review by the researcher. In table 3 we have scored the quality of the EIA report.

Table 3: Project characteristics and overview of the indicator scores for each of the cases in Ghana and Georgia for substantive- and procedural performance, specified for the EIA- and EIA follow-up phase

Cases: - Ghana # - Georgia ~	Project characteristics				Substantive performance					Procedural performance							
	Status	Prop.	Sector	Int. actor	Change during EIA phase	Change during EIA f-up phase	Changes implem. during EIA f-up phase	To	T1	T2	Start of EIA	Qual. EIA rep.	Qual. PP	Compli. monit.	Compli. assur.	1 <sup>st</sup> EIA phase	2 <sup>nd</sup> EIA phase
Adamus #	New	Private	Mining	No	Minor	Major	High	3	3	4	Timely/H	Low	High	High	High	Moder.	High
Paravani ~	New	Private	Energy	EBRD	Minor	Minor	Moder.	2	3	4	Timely/H	High	High	Moder.	Not applic.	High	Moder.
Ferro Zestaph. ~	Existing Extension	Private	Mining	No	None	Minor	High	3	3	3	Timely/H	Low	Low	Low	Low/moder.	Low	Low
Cement ~	Existing permit required	Private	Mining	No	None	No info yet	No insp. Yet	3	3	3	Not applic.	Low	Moder.	None/Low	Not applic.	Low	Low
Bui #	New	Public-private	Energy	Chinese bank	Major	Major not y. all	High not y. all	2	3	3	Sub-optimal	Moder.	Moder.	Moder.	High	Moder.	Moder.
Koforodua #	New	Public-private	Water	Belgian donor	Minor	None	None	3	4	2	Timely/H	High	Moder.	None/Low	Not applic.	High	Low
Railway ~	New	Public	Infra-structure	Int. donor	Major	None	Incomplete	3	4	2	Timely/H	Moder.	High	Low	Low	High	Low
Oil terminal ~	Existing permit required	Private	Energy	No	Minor	Minor	Incomplete	3	3	2	Not applic.	High	High	Low	Low/moder.	High	Low
Newmont #	Existing extension	Private	Mining	IFC (loan)	Major	Major	High	2	3	2	Timely/H	Moder.	High	High	Moder.	High	Moder.
Accumulators ~	Existing permit Required	Private	Industry	No	Minor	Minor	Incomplete	2	2	2	Timely/H	Moder.	Low	Low	Low	Moder.	Low
Manganese ~	Existing permit Required	Private	Mining	No	Major	None	None	1	2	1	Late start/L	High	High	Low	Low	Moder.	Low
Ferro Terjola ~	New	Private	Mining	No	None	None	None	1	1	1	Timely/H	Low	Low	Low	Low	Low	Low

\* Level of substantive performance: 1-low, 2-low+, 3-moderate, 4-moderate+.

\*\* 1<sup>st</sup> = EIA phase; 2<sup>nd</sup> = EIA follow-up phase



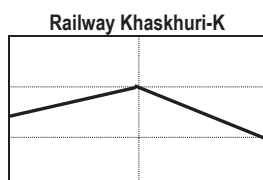
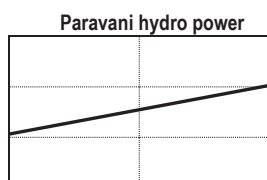
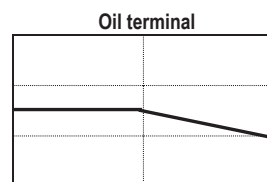
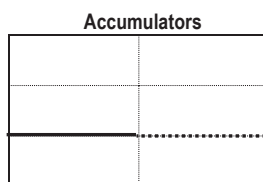
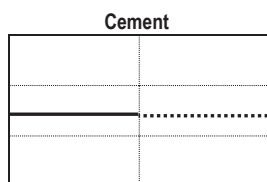
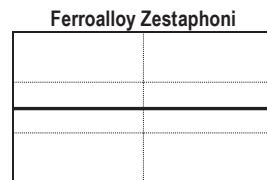
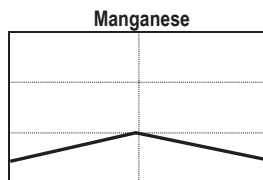
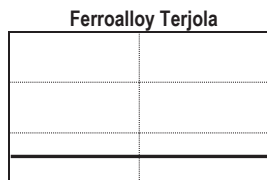
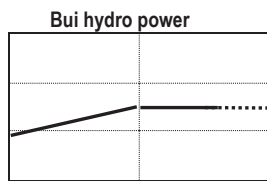
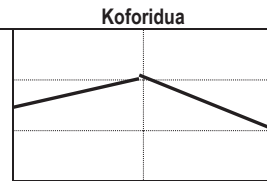
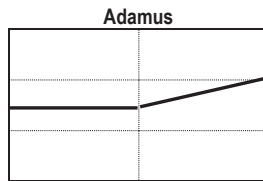
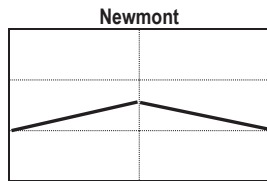
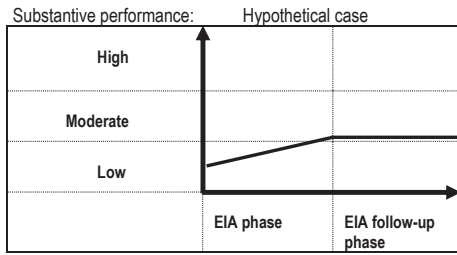
Table 4: Overview of the indicator scores for each of the cases in Ghana and Georgia to determine ownership of the proponent, ownership of the EIA authority and contextual factors, specified for the EIA- and EIA follow-up phase

Cases: - Ghana # - Georgia ~	Proponent Ownership		EIA authority Ownership		Contextual factors							
					IFIs		Sector authorities		Affected people		Neg. impacts	
	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>
Adamus #	High	High	High	Moder.	-	-	-	-	-	√	√	√
Paravani ~	High	High	Low	Low	√	√	-	-	-	-	√	√
Ferro Zestaph. ~	High	High	Moder.	Moder.	-	-	-	-	-	-	?	?
Cement ~	High	High	Low	Low	-	-	-	-	-	-	-	-
Bui #	Moder.	High	Moder.	High	-	-	√	√	-	√	√	√
Koforidua #	High	Low	High	Low	√	√	-	-	-	√	-	-
Railway ~	Moder.	Low	Moder.	High	√	?	√	√	-	√	√	√
Oil terminal ~	Moder.	Low	Moder.	Moder.	-	-	-	-	-	-	√	√
Newmont #	Moder.	Low	High	High	√	-	-	-	-	√	√	√
Accumulators ~	Low	Moder.	Low	Moder.	-	-	-	-	-	√	-	-
Manganese ~	Low	Low	Low	Moder.	-	-	?	?	-	√	√	√
Ferro Terjola ~	Low	Low	Low	Moder.	-	-	?	?	-	√	?	?

Table 5: Formula to determine the level of procedural performance for the EIA- and EIA follow-up phase

Procedural performance EIA phase	Procedural performance EIA follow-up phase
LLL = 3 - Low LLM = 4 - Low LLH = 5 - Low LMM = 5 - Low MMM = 6 - Moderate LMH = 6 - Moderate LHH = 7 - Moderate MMH = 7 - Moderate HHM = 8 - High HHH = 9 - High	LL = 2 - Low LM = 3 - Low LH = 4 - Moderate MM = 4 - Moderate HM = 5 - Moderate HH = 6 - High

Figure 1: Substantive performance of the case studies



## 4. Brief description of the cases

### Ghana cases

#### **Koforidua**

Koforidua drinking water supply project is of regional importance and funded by a Belgian donor; Substantive performance of this project initiated by a government agency (the proponent) that falls under the responsibility of the Ministry of water is low+. Procedural performance during EIA phase is in general high but moderate for public participation. The proponent, co-operating with a Belgian company developing and implementing the project and EIA, showed high ownership during the EIA phase because the Belgian firm applies high environmental standards. In the EIA phase ownership by EPA was high and minor changes recommended led to a further improvement of the project design that was already environmental friendly at the start. The proponent and donor had applied the lessons learned from implementing four comparable projects. During the EIA follow-up phase, affected people informed local and regional authorities that they were not compensated for loss of crops and land. Procedural performance as well as ownership by respectively the proponent and EPA during this phase was low. EPA justified their low level of ownership by stating that the project has hardly negative environmental effects and the majority of the people are benefitting from the project and therefore they decided not to use their limited means for compliance monitoring. Moreover, EPA and the proponent stated that other government agencies are responsible for payment of compensation.

#### **Bui**

Bui hydro-power project is of national importance and for 90% funded by a Chinese bank. Substantive performance of this project that is executed by a government agency (the proponent) representing the ministry of energy is moderate so far as the project was not yet implemented completely during the execution of this research. Procedural performance during EIA phase is in general moderate but low for public participation and EPA has provided a positive review decision under pressure of the proponent. During this phase ownership by EPA was moderate as they were overruled by the proponent, a sector authority. Due to the EIA, major project design changes were made. Procedural performance during EIA follow-up phase was moderate to high as a result of high ownership (quarterly monitoring visits) by the EPA and high ownership by the proponent. It is too early to assess whether all the proposed and agreed project changes due to the EIA will be implemented. Ownership by the proponent is increasing from moderate during the EIA phase to high during the EIA phase as a result of high ownership by the EIA authority during the EIA follow-up phase.

#### **Newmont**

The South Ahafo gold project initiated by Newmont the largest gold mining company in the world, is of national importance and IFC is funding about 25%. Substantive performance of this project is low+. Procedural performance during the EIA phase is considered to be high. During this phase ownership by the proponent was moderate and by the EPA was high and that resulted in three major design changes, the reduction of tailing storage facility land take, commitment to nil discharge of affluent and design changes to the processing plant. Some other project changes regarding the mitigation on affected people and forest reserves, were made on request of IFC. Procedural performance during EIA follow-up phase by the proponent was

low after they have received the permit because they showed non-compliance on the EPA instructions on blasting repairs and the reclamation plan. Affected people informed EPA about the negative impact of blasting and used force after some time. After four years Newmont met permit conditions due to pressure by EPA that showed high performance. The influence of IFC in this phase seems to be absent.

### **Adamus**

The Nzema gold project initiated by Adamus company is of national importance. Substantive performance of this project is moderate. Procedural performance during the EIA phase is moderate. Ownership by respectively Adamus and EPA are high during this phase. According to the EIA review, the proposed project meets the environmental standards and is in general of good quality. A minor project change that was made during this phase is the use of hydro-foam blocks for a resettlement village to avoid the negative effects of blasting. During the EIA follow-up phase the people from four affected communities asked for an alternative routing of the new bypass road to mitigate the effects and that was agreed and implemented as such. In addition, in consultation with EPA two major design changes were made and implemented, the reduction of tailing storage facility land take with 30% and the shift from using ground water for the processing plant towards using river water. Adamus showed high ownership in this phase and EPA showed moderate ownership as Adamus was in compliance with all conditions and proposes design changes themselves to further mitigate the negative environmental effects.

## **Georgia cases**

### **Ferroally plant Terjola**

In the EIA phase no design changes were made. The project was permitted whilst the environmental standards were not met, the shortcomings were included as permit conditions. In the EIA follow-up phase no additional changes were made and conditions were not met. Fines by the EIA authority did not change the behaviour of the proponent and therefore, substantive performance is low.

Ownership by the proponent is low during both phases. The EIA authority shows low ownership as they provide a permit whilst the project and the EIA does not meet standards. When the people affected by air pollution starts complaining ownership of the EIA authority increases, inspection shows non-compliance and they start fining. At the court the proponent wins because the EIA authority was not able to adequately justify non-compliance due to lack of means.

### **Manganese plant**

This plant owned by a Georgian company is operational since soviet times and requires an EIA and permit due to new legislation. In the EIA phase major design changes were enforced by the EIA authority. The project was permitted whilst the environmental standards were not met, the shortcomings were included as permit conditions. In the follow-up phase no additional changes were made and conditions were not met. Fines by the authority did not change the behaviour of the proponent and therefore, substantive performance is low.

Ownership by the proponent is low. The EIA authority shows low ownership as they provide a permit whilst the project and the EIA does not meet standards. When the people affected by air pollution and health problems and supported by the US-EPA start complaining, ownership of the EIA authority increases, inspection shows non-compliance and they start fining. In 2013 the company was sold to an US company.

### **Accumulators**

The new processing plant is owned by a Georgian company. The company received a permit in 2009 based upon an EIA that did not meet environmental standards. Due to a complaint, an inspection was executed that showed non-compliance and the company was fined. As a result the company changed the design considerably and started a new EIA procedure in order to get a new permit. This latter EIA procedure has been object of study in this research. In the EIA phase no additional project changes were made. The project did not meet all environmental standards and the shortcomings were included as conditions in the permit issued in 2011. Since then, compliance monitoring has not been executed and complaints have not been received. Therefore, it is unclear whether the company is in compliance with the permit conditions. Ownership by the proponent was low in 2009-2010 but they responded actively towards non-compliance, changing the design this shows moderate ownership. The EIA authority shows low ownership as they provided a permit whilst the project and the EIA did not meet standards. One public complaint resulted in a temporarily increase in ownership of the EIA authority and Compliance monitoring resulted in non-compliance and fining. Since permit issuing ownership by the EIA authority is low.

### **Railway construction**

Georgia railway is a state owned company. The project aims to modernize sections of the main railroad Tbilisi - Black Sea. In the EIA phase considerable design changes were made and an environmental friendly alternative was selected. Resettlement of some dozens of residents and compensation of affected people is not included in the EIA nor permit as it is not the responsibility of the EIA authority. During construction a village started complaining and two compliance monitoring inspections, including a joint inspection with the ministry responsible for construction permits showed non-compliance with the permit conditions and fining of the company. Ownership by the proponent is considered to be moderate and because the environmental beneficial design changes were made on request of the involved international funding organization. Ownership by the EIA authority seems to be moderate in the EIA phase and high in the follow-up phase where non-compliance resulted in fining.

### **Paravani hydro-power project**

The proponent is a Georgian company constructing a hydro-power plant of 85MW, resettlement is not necessary. EBRD is funding and applies their own environmental and social safeguard policies. In the EIA phase minor design changes are made. The need to study alternatives were limited because in a Memorandum of Understanding between the company and the Georgian Government decisions were taken already on location, capacity and type of dam. The project is under construction and not yet operational. The EIA authority did not execute compliance monitoring yet. The EBRD noticed two shortcomings during monitoring that were remedied. Ownership of the proponent is high. This high level is to a certain extent influenced by the EBRD. The EIA authority shows low ownership during both EIA phases and that is explained by the involvement of the EBRD who secures a high level of environmental and social beneficial performance.

### **Ferroalloy plant in Zestaphoni**

The plant is owned by a Georgian company and requires an EIA and a new permit because the production capacity of ferro-silico manganese will be increased. In the EIA phase no design modifications were made. When the permit was issued the project met the environmental

standards. Compliance monitoring showed full compliance (July, 2013). In the follow-up phase the proponent voluntarily replaced existing filters by more effective ones resulting in a minor increase towards moderate substantive performance. Ownership by the proponent is high because environmental standards were met without regulatory pressure, monitoring showed full compliance and additional changes made during the follow-up phase were made voluntarily. Ownership by the EIA authority is moderate.

### **Cement plant**

Heidelberg, an international company, became in 2006 the owner of the plant that was operational since Soviet times. The installation required a permit and EIA due to new legislation in 2007. In the EIA phase no design changes were made. Heidelberg has changed the design by installing new air filters avoiding severe air pollution before applying the permit. The EIA is assessed as being of low quality but the project did meet environmental standards during permitting in 2009. Since new filters have been installed no complaints were received anymore. Compliance monitoring has not yet been executed. Substantive performance is considered as moderate. Ownership by the proponent is high as reflected by the change of the design before applying for a permit. This design change was explained due to the willingness of the new owner and the perceived necessity to receive a permit. Ownership by the EIA authority is low.

### **Oil terminal Batumi**

The oil terminal is operating for decades and since 2008 owned by KazTransOil a company based in Kazakhstan. A permit is required due to the new 2007 legislation. In 2007 a MoU was signed by the terminal and the environmental ministry based upon a number of environmental audits by the EIA authority, aiming to remedy the shortcomings and implement measures to improve environmental performance. In the EIA phase no design modifications were made but the EIA report of good quality recommended a large number of mitigating measures. Subsequent inspections showed partly non-compliance and therefore the company was fined. Substantive performance is low+. Ownership of the proponent is moderate during the EIA phase and after the permit was issued the level of ownership decrease because of partly non-compliance. Ownership by the EIA authority is moderate during both phases they apply routine monitoring and fine when required but do not succeed to force the proponent to make the necessary changes in order to be in compliance with the permit conditions.

# Summary

## Introduction

Environmental Impact Assessment (EIA) is a legal tool used to support government decisions on projects that could harm the environment. It is applied to such decisions, to study the possible environmental impacts of the proposed project and any mitigating measures necessary to minimize them. In the EIA process a number of activities are implemented consecutively, generally in three phases: pre-EIA, EIA, and EIA follow-up. EIA is typically mandatory for projects such as the exploitation or extension of a quarry, the processing of ores, the exploration and exploitation of oil and gas, oil refineries, the development of hydropower dams, and the construction and development of roads and ports.

This thesis focuses on EIA in low and middle income countries (LMCs). According to the World Bank's 2015 classification, low income countries have a Gross National Income (GNI) of maximum US\$ 1,025 per capita, whereas the GNI for middle income countries is between US\$ 1,025 and 12,475. EIA is currently mandatory in nearly all LMCs and, in many cases, has been so for 15-25 years. Despite the experience gained and extensive capacity development support by international donors such as the World Bank, the performance of EIA in LMCs is considered to range from low to moderate, although differences between countries exist. This means that EIA contributes to environmental protection only modestly, for instance by ensuring that the projects for which EIA is mandatory meet the minimum environmental standards prescribed by legislation. The performance of EIA in LMCs also seems to be lower than in high income countries.

The literature does not clearly indicate which factors explain the poor performance of EIA in LMCs and to what extent these factors are context-specific. This thesis therefore aimed to provide a better understanding of these factors and their dependence on context, in order to provide better guidance for capacity development that contributes to improved performance of EIA in these countries. The thesis focuses on national EIA systems (defined as an association of actors involved in EIA, each with their own capacities and often opposing interests), and also on "the rules of the game" that have been set in the EIA regulatory framework. Empirical research has been conducted in three LMCs: Ghana, Georgia, and Yemen.

## Conceptual framework

Substantive performance of the EIA system is defined as the extent to which the objectives of EIA have been met. The short-term objective is informed decision-making about the environmental impacts of the proposed project and the avoidance or limiting of negative impacts. The long-term objective is environmental protection. This thesis focuses primarily on the extent to which EIA contributes to environmental protection.

To guide the empirical research, a conceptual framework is elaborated in chapter 2. This framework consists of the following factors to explain the substantive performance of EIA systems: (i) the EIA system itself, consisting of the regulatory framework, the actors and their capacities, and capacity development and (ii) the context of the EIA system.

The regulatory framework consists of the EIA legislation, procedures, and guidelines that provide formalized or legal guidance to the EIA process. In addition to these formal rules, in practice, informal or unwritten rules can also be part of the EIA regulatory framework.

The capacities of the actors involved in EIA largely determine whether the objectives and ambitions set down in the regulatory framework will be achieved. For this research, six main groups of actors were distinguished:

- The proponent or developer of the project subjected to EIA. This may be a private investor or a government organization;
- The government organization(s) that as competent authority take(s) decisions during the EIA process and on the basis of the EIA make(s) a decision about the environmental permit for the project and its compliance;
- Knowledge organizations (e.g. a consultant or a university) that conduct EIA studies on behalf of the proponent;
- Other government organizations and non-governmental organizations (NGOs) that have an interest in that project;
- Donors and international finance organizations that fund projects for which EIA is mandatory or that fund or implement capacity development for EIA;
- The government organization responsible for the EIA regulatory framework and functioning of EIA.

The thesis focuses primarily on the proponent and the government organization that takes decisions on the project on the basis of the EIA, as they are the actors that are primarily accountable in the EIA process and are therefore distinguished from other actors. In order to explain their contribution to the performance of the EIA (in terms of environmental protection), the capacities of these actors were divided into two categories: “motivation” (i.e. “the will to”) and “means” (i.e. “the ability to”). The capacity “motivation” was divided into willingness to contribute to environmental protection through EIA, leadership, and co-operation with other organizations. The capacity “means” was divided into number of staff and their expertise, the data available, adjustability, technical means, and access to funds.

Capacity development was defined as a process that aims to improve EIA system performance by enhancing the capacities of the actors involved in EIA (for example by training). Besides, capacity development is the development and application of mechanisms to secure the maintenance or further development of the enhanced capacities. Examples of this include regular evaluations and the implementation of the lessons learned from these.

Contextual factors were defined as all those factors that influence EIA system performance but are not part of the EIA system. Examples of contextual factors are the political system and the way the judiciary is organized. It was assumed that contextual factors influence EIA but can hardly be influenced. The political system, for example, determines to what extent NGOs can play a role in EIA and to what extent they can hold the proponent accountable. In the case of political systems in which these organizations are given little room for maneuver and in which the judiciary is not independent, it is assumed that performance of EIA is lower because it is more difficult to hold influential actors accountable in case of incompliance of the EIA regulations.

### **Empirical research**

A possible explanation for the often weak performance of the EIA systems is that in general, the objectives in the EIA legislation are often over-ambitious and therefore cannot be achieved in the given context. To provide more effective capacity development it is necessary to better understand the contextual factors that influence the development of EIA legislation in terms of



ambitions. In chapter 3 therefore, the development of the EIA legislation is described and explained for Ghana, Georgia, and Yemen. This is done using eleven ambitions in EIA legislation, divided into three groups: object of the EIA study, quality of information for decision-making, and accountability of decision-making. The ambition for the object of the EIA study may, for example, range from only considering mitigating measures to minimize the negative environmental impacts (low ambition), but it may also focus on design and site alternatives for the project to avoid negative environmental impacts (high ambition). Three main conclusions are drawn. (1): EIA legislation may develop in various directions in terms of ambition levels. This means that some ambitions might be toned down, whereas meanwhile others are raised. (2): Ambitions in EIA legislation are largely determined by the power and capacity of, on the one hand, the organization(s) responsible for environment and that support EIA and, on the other hand, the government organization(s) that is/are responsible for, for example road or energy projects subject to EIA and that (sometimes) block(s) the development of EIA legislation. (3): The political system is the most important contextual factor influencing the rules of policy-making and the power of the different actors involved, as is indicated, for example, by NGOs being given few rights in EIA. Some ambitions seem to be influenced by specific factors. The ambitions for the object of the EIA study seem to be influenced by the level of environmental awareness of the (often) influential organizations that are responsible for interests other than environment but have a role in approving EIA legislation.

In chapter 4 the factors that contribute to substantive performance of EIA systems in LMCs are analyzed in more detail. A distinction is made between the EIA phase and the EIA follow-up phase. The EIA phase encompasses the steps in the EIA procedure that have to be complied with in almost all LMCs: ascertaining whether the project is legally required to undergo EIA (screening); ascertaining which environmental impacts the EIA should study (scoping); assessing the quality of the EIA (reviewing); input from the general public and experts; and, finally, the decision, which generally results in the issuing of an environmental permit (sometimes subject to certain conditions). The EIA follow-up phase is about the impact of the EIA and the conditions in the environmental permit on the construction works and operation of a project – be it a quarry, hydropower dam, harbor or whatever. Important steps in this phase are compliance monitoring via inspection, and, if relevant, enforcement. The analysis in chapter 4 focuses on the proponent and the government organization(s) that as the competent authority take(s) decisions during the EIA process, decide(s) on the project on the basis of the EIA, and need(s) to enforce the environmental permit.

The empirical analysis is based on twelve case studies of the implementation of an EIA: four from Ghana and eight from Georgia. Three main conclusions are drawn. (1): In most cases, the substantive performance increases during the EIA phase but declines during the EIA follow-up phase, with the result that ultimately only five of the twelve cases have complied with permit conditions or national environmental standards. (2): Motivation of the proponent is the most important factor explaining the level of substantive performance: the greater the proponent's motivation, the higher the substantive performance (although the performance level itself remains modest). The influence of the government organization(s) that as the competent authority take(s) decisions during the EIA process, decide(s) on the project on the basis of the EIA, and need(s) to enforce the environmental permit, seems to be limited. (3): The extent to which all steps of the formal EIA procedure are applied as prescribed (i.e. the procedural performance) seems to be less important for the ultimate substantive performance in terms of environmental protection than might be expected, given the literature in this field. This applies especially for

the EIA phase; in the EIA follow-up phase there seems to be a correlation between procedural and substantive performance.

In chapter 5 a tool is presented that interactively and generally provides insight not only into EIA performance in a certain context, but also into which capacities of which organizations need to be enhanced to improve EIA performance. This tool also suggests how to enhance and secure the capacities identified. It is a diagnostic tool: it enables a more in-depth and specialized analysis (comparable with a diagnosis by a general practitioner, followed by a referral to a medical specialist). The tool is based upon a structured dialogue with actors who are involved and have expertise in EIA in a certain context, and that has been preceded by a document analysis. It consists of four steps. In the first step the performance of the EIA system is estimated and discussed. In the second step the main actors involved in EIA are identified. In the third step the capacities of these actors are assessed and it is established which ones can be enhanced to improve EIA performance. In the fourth step the options for enhancing and securing the capacities are discussed. The tool was applied in different settings and subsequently adjusted and refined.

### **Conclusions and recommendations**

The aim of this thesis was to identify the main factors that explain the performance of EIA in LMCs. In the conceptual framework three main groups of factors were distinguished: the EIA regulatory framework, the most important actors and their capacities, and finally contextual factors. Their relevance for and contribution to EIA performance are discussed below.

The ambitions as set out in the EIA legislation are important, as they determine the potential contribution of EIA to environmental protection (and other objectives). The development of the level of ambition reflected in the EIA legislation seems to be largely determined by the political system – the most important contextual factor. To what extent the ambitions are applied in practice is determined by the other two groups of factors identified: the key actors plus their key capacities, and contextual factors.

The research revealed that the proponent's motivation and, to a lesser extent, the motivation of the government organizations that take decisions during the EIA process and are responsible for permitting and compliance, are the most important capacities that seem largely to explain EIA substantive performance.

Other actors, such as donors and international finance institutes, can considerably influence the proponent's motivation. In this research, it was found that other organizations (including NGOs) had only limited influence on the motivation of the two key actors.

This research has thus contributed to a better understanding of the factors that contribute to the effectiveness of EIA in LMCs. Based upon these insights a diagnostic tool has been developed that provides systematic guidance for enhancing and securing capacities of those actors that limit the performance of EIA. The research also provides inroads for a debate about how ambitious EIA systems should be and about what is intended to be achieved with EIA in a certain country.

Finally, in order to improve substantive performance, two capacity development strategies have been identified. Firstly, indirectly increasing the proponent's motivation if donors or international financing organizations are involved: the latter can increase the motivation by mak-

ing their funding conditional on compliance with conditions. Secondly, the government organization that issues permits on the basis of EIA should adopt a selective and pro-active strategy, focusing on those projects in which the largest contribution to environmental protection can be achieved and deploying the available capacity for this.

### **Finally**

The research findings regarding the contribution of EIA to environmental protection in LMCs are disappointing and confirm those reported by the few previous studies. Nevertheless, this research suggests that EIA performance in LMCs can be improved, although to not much more than a moderate level. New insights for this that have been yielded by this thesis are: do not focus too much on procedural performance but instead focus on the contribution to environmental protection (substantive performance); do not focus solely on “technical” capacities, but instead focus more on the more fundamental capacities such as motivation; in research on and capacity development for better EIA performance, explicitly consider the EIA follow-up phase because it seems that it is this phase that is decisive for environmental protection.



# Samenvatting

## Introductie

Milieueffectrapportage (m.e.r.) is een wettelijk instrument dat wordt gebruikt door overheden ter ondersteuning van beslissingen over projecten die mogelijk schade aan het milieu toebrengen. M.e.r. is een instrument dat voorafgaand aan dergelijke besluiten mogelijke milieugevolgen en maatregelen om deze te beperken in beeld brengt. In het algemeen worden de volgende drie fasen in het m.e.r.-proces onderscheiden: pre-m.e.r., m.e.r. en post m.e.r. Typische m.e.r.-plichtige projecten zijn bijvoorbeeld de aanleg of uitbreiding van een mijn, verwerking van ertsen, de exploratie en exploitatie van olie en gas, olieraffinaderijen, de constructie van stuwdammen en de aanleg van wegen en havens.

Deze dissertatie richt zich op m.e.r. in de zogenaamde lage en midden inkomenslanden (LMILs). Volgens de indeling van de Wereld Bank in 2015, hebben lage inkomenslanden een Bruto Nationaal Inkomen (BNI) per hoofd van de bevolking van maximaal US\$ 1.025 en voor midden inkomenslanden is het BNI US\$ 1.025 tot maximaal US\$ 12.475. Tegenwoordig is m.e.r. wettelijk vereist in vrijwel alle LMILs, vaak al 15 tot 25 jaar. Ondanks de opgebouwde ervaring in die landen en uitgebreide capaciteitsontwikkelingsprogramma's door internationale donoren zoals de Wereld Bank, varieert de effectiviteit van m.e.r. van laag tot matig, alhoewel er verschillen bestaan tussen landen. Dit betekent dat m.e.r. slechts een bescheiden bijdrage levert aan milieubescherming, bijvoorbeeld door er voor te zorgen dat de projecten die m.e.r.-plichtig zijn voldoen aan de wettelijk voorgeschreven minimum milieustandaarden. De effectiviteit van m.e.r. in LMILs lijkt verder lager te zijn dan in hoge inkomenslanden.

De literatuur geeft geen duidelijke aanwijzingen welke factoren de beperkte effectiviteit van m.e.r. in LMILs verklaren en in welke mate deze factoren context-specifiek zijn. Dit proefschrift heeft daarom als doel om te komen tot een beter begrip van deze factoren en hun contextafhankelijkheid, om op basis hiervan gerichter te kunnen werken aan capaciteitsontwikkeling voor effectievere m.e.r. in deze landen. Het proefschrift richt zich op nationale m.e.r.-systemen, welke zijn gedefinieerd als de combinatie van actoren betrokken bij m.e.r. ieder met hun eigen capaciteiten en veelal tegengestelde belangen en de 'spelregels' zoals die zijn vastgelegd in de m.e.r.-regelgeving. Empirisch onderzoek is uitgevoerd in drie LMILs; Ghana, Georgië en Jemen.

## Conceptuele kader

De effectiviteit van het m.e.r.-systeem wordt gedefinieerd als de mate waarin de doelen van m.e.r. zijn behaald. Het korte termijn doel is goed geïnformeerde besluitvorming over de milieueffecten van het te beoordelen project en het voorkomen dan wel beperken van negatieve effecten. Het lange termijn doel is milieubescherming. Dit proefschrift richt zich primair op de mate waarin m.e.r. bijdraagt aan milieubescherming.

Om het empirisch onderzoek te sturen is een conceptueel kader ontwikkeld dat wordt beschreven in hoofdstuk 2. Het kader omvat de volgende factoren die de effectiviteit van m.e.r.-systemen verklaren: (i) het m.e.r.-systeem zelf, bestaande uit de wet- en regelgeving, de betrokken actoren met hun capaciteiten, en capaciteitsontwikkeling en (ii) de context van het m.e.r.-systeem.

De m.e.r. wet- en regelgeving schetst alle voorschriften, procedures en richtlijnen die wettelijk sturing geven aan het m.e.r. proces. In de praktijk kunnen naast deze formele regels ook informele of ongeschreven regels deel uitmaken van het regulerende kader van m.e.r.

De capaciteiten van de bij m.e.r. betrokken actoren bepalen in belangrijke mate of de doelen en ambities zoals beschreven in de m.e.r.-wet- en regelgeving zullen worden bereikt. In dit onderzoek zijn zes actoren onderscheiden:

- De initiatiefnemer of ontwikkelaar van het m.e.r.-plichtige project. Dit kan een private investeerder of een overheidsorganisatie zijn;
- De overheidsorganisatie(s) die als bevoegd gezag besluiten nemen in het m.e.r. proces en op basis van het m.e.r. een besluit moet nemen over de milieuvergunning voor het project en handhaving hiervan;
- Kennisorganisaties (bijvoorbeeld een consultant of een universiteit) die de m.e.r.-studies uitvoeren in opdracht van de initiatiefnemer;
- Andere overheidsorganisaties en niet-overheidsorganisaties die een belang hebben bij dat project;
- Donoren en internationale financiële instellingen die m.e.r.-plichtige projecten financieren of capaciteitsontwikkeling voor m.e.r. financieren of verzorgen;
- De overheidsorganisatie die verantwoordelijk is voor de m.e.r.-wet- en regelgeving en het functioneren van m.e.r.

Deze dissertatie richt zich primair op de initiatiefnemer en de overheidsorganisatie die op basis van het m.e.r. een besluit moet nemen over het project, omdat deze actoren een primaire verantwoordelijkheid hebben in het m.e.r.-proces en zich daardoor onderscheiden van andere actoren. Om hun bijdrage aan de effectiviteit van m.e.r. (in termen van milieubescherming) te kunnen verklaren, zijn de capaciteiten van deze actoren onderverdeeld in de categorie 'motivatie' (ofwel "de wil om") en de categorie 'middelen' (ofwel: "de mogelijkheid tot"). De capaciteit 'motivatie' is onderverdeeld in de wil om via m.e.r. bij te dragen aan milieubescherming, leiderschap en samenwerking met andere organisaties. De capaciteit 'middelen' is onderverdeeld in aantal medewerkers en hun deskundigheid, aanwezige data, aanpassingsvermogen, technisch middelen en toegang tot financiële middelen.

Capaciteitsontwikkeling is gedefinieerd als een proces met als doel om de effectiviteit van m.e.r. te verbeteren door het verbeteren van de capaciteiten van bij m.e.r. betrokken actoren (bijvoorbeeld door training). Capaciteitsontwikkeling omvat daarnaast het ontwikkelen en toepassen van mechanismen om te waarborgen dat de capaciteiten die zijn verbeterd, worden behouden dan wel verder worden ontwikkeld. Denk hierbij bijvoorbeeld aan het regelmatig uitvoeren van evaluaties en de daaruit geleerde lessen daarna toepassen in de praktijk.

Contextuele factoren zijn gedefinieerd als alle factoren die de effectiviteit van m.e.r. beïnvloeden, maar geen onderdeel zijn van het m.e.r.-system. Voorbeelden van contextuele factoren zijn het politiek systeem en de manier waarop rechtspraak is georganiseerd. Aanname was dat contextuele factoren van invloed zijn op m.e.r. maar nauwelijks kunnen worden beïnvloed. Het politiek systeem bepaalt bijvoorbeeld in welke mate niet-overheidsorganisaties een rol kunnen hebben in m.e.r. en in hoeverre zij de initiatiefnemer via de rechterlijke macht ter verantwoording kunnen roepen. In politieke systemen waar aan deze organisaties weinig ruimte wordt gegeven en de rechtspraak niet onafhankelijk is, is de aanname dat de effectiviteit van m.e.r.

lager is omdat invloedrijke actoren moeilijker ter verantwoording kunnen worden geroepen als deze zich niet aan de m.e.r. regels houden.

### **Empirisch onderzoek**

Een mogelijke verklaring voor de vaak lage effectiviteit van m.e.r. is dat de doelstellingen in de m.e.r.-wetgeving vaak te ambitieus zijn en daardoor onhaalbaar zijn gezien de context. Voor meer gerichte capaciteitsontwikkeling is het noodzakelijk om een beter inzicht te krijgen in de contextfactoren die de ontwikkeling van m.e.r.-wetgeving, in termen van ambitieniveaus, beïnvloeden. In hoofdstuk 3 is daarom de ontwikkeling van de m.e.r.-wetgeving in Ghana, Georgië en Jemen beschreven en verklaard. Hierbij is gekeken naar elf ambities in m.e.r.-wetgeving die zijn verdeeld in drie groepen: het onderwerp van studie in de m.e.r., de kwaliteit van de informatie voor besluitvorming en de mogelijkheden voor verantwoorde besluitvorming. De ambitie voor het onderwerp van studie in m.e.r. kan bijvoorbeeld variëren van het in beschouwing nemen van alleen maar mitigerende maatregelen om de negatieve milieugevolgen te minimaliseren (lage ambitie) maar kan zich ook richten op alternatieven voor het ontwerp en de locatie van het project om zo negatieve milieugevolgen te voorkómen (hoge ambitie). Drie hoofdconclusies worden getrokken. (1): m.e.r.-wetgeving kan zich in verschillende richtingen ontwikkelen in termen van ambitieniveaus. Dit betekent dat sommige ambities kunnen afnemen terwijl tegelijkertijd andere ambities toenemen. (2): ambities in m.e.r.-wetgeving worden voor een groot deel bepaald door de macht en capaciteit van enerzijds de overheidsorganisatie(s) die verantwoordelijk zijn voor milieu en die m.e.r. steunen en anderzijds de overheidsorganisatie(s) die verantwoordelijk zijn voor de projecten die onder m.e.r. vallen (bijvoorbeeld wegen of energieprojecten) en die (soms) de ontwikkeling van m.e.r.-wetgeving blokkeren. (3): het politieke systeem is de belangrijkste contextuele factor die de regels voor beleidsontwikkeling en de invloed van de verschillende betrokken actoren beïnvloedt zoals aangegeven door bijvoorbeeld niet-overheidsorganisatie weinig rechten te geven in m.e.r. Sommige ambities lijken te worden beïnvloed door specifiek factoren. Zo lijken de ambities ten aanzien van de reikwijdte van het m.e.r.-studie te worden beïnvloed door het niveau van milieubewustzijn van de vaak invloedrijke overheidsorganisaties die verantwoordelijk zijn voor andere belangen dan milieu maar die wel een rol hebben in het goedkeuren van m.e.r. wetgeving.

In hoofdstuk 4 worden de factoren die bijdragen aan de effectiviteit van m.e.r. in LMILs nader bestudeerd. Daarbij is een onderscheid gemaakt tussen de m.e.r.-fase en de zogeheten post m.e.r.-fase. De m.e.r. fase bestaat uit de volgende stappen in de m.e.r.-procedure die in vrijwel alle LMILs moeten worden gevolgd. Deze stappen omvatten het nagaan of het betreffende project m.e.r.-plichtig is, het bepalen van de milieueffecten die in het m.e.r.-studie moeten worden onderzocht, toetsing van de kwaliteit van de m.e.r.-studie, inspraak waarbij het publiek en belanghebbenden hun zienswijzen op het onderzoek kunnen inbrengen en tot slot een besluit over het project door een overheid, doorgaans betreft dit de verstrekking van een milieuvergunning (al dan niet onder voorwaarden). De post m.e.r. fase gaat over hoe de m.e.r. en de voorwaarden in de milieuvergunning doorwerken tijdens de uitvoering en ingebruikname van de mijn, stuwdam of haven of waar het project ook over ging. Belangrijke stappen in deze fase zijn monitoring van milieueffecten en naleving van de voorwaarden uit de milieuvergunning via inspectie en, indien relevant, handhaving. De analyse in hoofdstuk 4 richt zich op de initiatiefnemer en de overheidsorganisatie(s) die als bevoegd gezag besluiten nemen in het m.e.r. proces en op basis van het m.e.r. een besluit moet nemen over een project en de milieuvergunning moet handhaven.

De empirische analyse is gebaseerd op twaalf projecten waarvoor een m.e.r. is uitgevoerd: vier uit Ghana en acht uit Georgië. Drie hoofdconclusies worden getrokken. (1): in de meeste cases neemt de effectiviteit in termen van bijdrage aan milieubescherming toe tijdens de m.e.r.-fase maar neemt die af tijdens de post m.e.r. fase, met als resultaat dat van de twaalf onderzochte projecten uiteindelijk slechts vijf projecten voldoen aan de voorwaarden uit de milieuvergunning of aan wettelijke milieunormen. (2): motivatie van de initiatiefnemer is de belangrijkste capaciteit die de mate van effectiviteit verklaart: hoe hoger de motivatie van de initiatiefnemer, hoe hoger de effectiviteit (hoewel deze op zichzelf beperkt blijkt). De invloed van de overheidsorganisatie(s) die als bevoegd gezag besluiten nemen in het m.e.r. proces en op basis van het m.e.r. een besluit moet nemen over een project en de milieuvergunning moet handhaven lijkt beperkt te zijn. (3): de mate waarin alle stappen uit de formele m.e.r.-procedure worden gevolgd zoals voorgeschreven (de 'procedurele effectiviteit') blijkt minder van belang voor de uiteindelijke effectiviteit van m.e.r. in termen van milieubescherming dan mag worden verwacht, uitgaande van de literatuur op dit gebied. Dit geldt vooral voor de m.e.r.-fase; in de post m.e.r. lijkt er wel een verband tussen procedurele effectiviteit en bijdrage aan milieubescherming.

In hoofdstuk 5 wordt een methode gepresenteerd die op een interactieve en globale wijze inzicht biedt in de effectiviteit van m.e.r. in een bepaalde context en welke capaciteiten van welke organisaties versterkt moeten worden om tot een hogere effectiviteit van m.e.r. te komen. Ook biedt de methode suggesties om de geïdentificeerde capaciteiten te verbeteren en te borgen. De methode wordt aangeduid als een 'diagnosemiddel', die een meer diepgaande en gespecialiseerde analyse mogelijk maakt (vergelijkbaar met een diagnose door de huisarts, gevolgd door een doorverwijzing naar een specialist). De methode is gebaseerd op een gestructureerde dialoog met actoren betrokken bij en deskundig ten aanzien van m.e.r. in een bepaalde context en deze is voorafgegaan door een documentenanalyse. De methode omvat vier stappen. In de eerste stap wordt de effectiviteit van het m.e.r.-systeem ingeschat en bediscussieerd. In de tweede stap worden de belangrijkste actoren die zijn betrokken in m.e.r. geïdentificeerd. In de derde stap worden de capaciteiten van deze actoren beoordeeld en vastgesteld welke daarvan kunnen worden verbeterd voor een meer effectieve m.e.r. In de vierde stap worden de opties voor het concreet verbeteren én borgen van die capaciteiten bediscussieerd. De methode is toegepast in verschillende situaties en vervolgens aangepast en verfijnd.

### **Conclusies en aanbevelingen**

Het doel van deze these was om de belangrijkste factoren te identificeren die de effectiviteit van m.e.r. in LMILs verklaren. In het conceptuele raamwerk zijn drie hoofdgroepen van factoren onderscheiden: de wet- en regelgeving rondom m.e.r., de belangrijkste actoren en hun capaciteiten en tot slot contextuele factoren. Hieronder wordt het belang van deze factoren voor en bijdrage aan de effectiviteit voor m.e.r. besproken.

De ambities zoals vastgelegd in de m.e.r.-wetgeving zijn belangrijk, omdat deze de potentiële bijdrage van m.e.r. aan milieubescherming (en andere doelen) bepaalt. De ontwikkeling van het ambitieniveau zoals weergegeven in de m.e.r.-wetgeving lijkt voornamelijk te zijn bepaald door het politieke systeem als de belangrijkste contextfactor. In welke mate de ambities worden toegepast in de praktijk wordt bepaald door twee andere groepen van factoren: de sleutelactoren met hun sleutelcapaciteiten en contextuele factoren.

Het onderzoek laat zien dat motivatie van de initiatiefnemer en, in mindere mate, de motivatie van de overheidsorganisaties die tijdens het m.e.r.-proces besluiten neemt en het project vergunt en handhaaft, de belangrijkste capaciteit is en de effectiviteit van m.e.r. voor een groot



gedeelte lijkt te verklaren. Andere actoren, zoals donoren en internationale financiële instellingen, kunnen een aanzienlijke invloed hebben op de motivatie van de initiatiefnemer. Uit dit onderzoek blijkt dat overige (niet-overheids)organisaties maar een beperkte invloed hebben op het niveau van motivatie van de twee sleutelactoren.

Dit onderzoek heeft daarmee bijgedragen aan een beter begrip van de factoren die bijdragen aan de effectiviteit van m.e.r. in LMILs. Op basis hiervan is een methode voor diagnose ontwikkeld om systematisch sturing te geven voor de ontwikkeling en borging van capaciteiten van die de actoren die de effectiviteit van m.e.r. belemmeren. Maar dit onderzoek geeft ook aanknopingspunten voor een debat over hoe ambitieus een m.e.r. systeem zou moeten zijn dan wel wat men wil bereiken met m.e.r. in een land.

Twee kansrijk geachte capaciteitsontwikkelingsstrategieën zijn geïdentificeerd voor meer effectieve m.e.r. Eén: het indirect verhogen van de motivatie van de initiatiefnemer in het geval donoren of internationale financiële instellingen betrokken zijn: zij kunnen de motivatie verhogen door voorwaarden te stellen aan hun financiering. Twee: de overheidsorganisatie die besluit over milieuvergunning op basis van m.e.r. wordt geadviseerd om zich selectief en proactief te richten op die projecten waar de grootste bijdrage aan milieubescherming kan worden bereikt en hiervoor de beschikbare capaciteiten in te zetten.

### **Tot slot**

De onderzoeksresultaten met betrekking tot de ingeschatte bijdrage van m.e.r. aan milieubescherming in LMILs zijn teleurstellend en bevestigen de schaarse onderzoeken die eerder zijn uitgevoerd. Desalniettemin suggereert dit onderzoek dat de effectiviteit van m.e.r. in LMILs kan worden verhoogd, zij het hooguit tot een niveau van matige effectiviteit. Nieuwe inzichten die dit proefschrift daarvoor biedt zijn: men dient zich niet blind te staren op 'procedurele' effectiviteit maar op de uitkomsten van m.e.r. in termen van bijdrage aan milieubescherming; focus bij 'capaciteiten' niet op alleen op 'technische' capaciteiten maar op meer fundamentele capaciteiten zoals motivatie; neem in onderzoek naar en capaciteitsontwikkeling voor meer effectieve m.e.r. expliciet de post m.e.r. fase mee omdat juist deze fase doorslaggevend lijkt voor milieubescherming.



# Curriculum Vitae

Arend Kolhoff was born in Sneek in the Netherlands on July 29<sup>th</sup>, 1963. He completed his secondary education at the Nassau College in Heerenveen in 1981. He finished a Bachelors study at Ubbo Emmius in Groningen in 1986. At this teachers' training college he received a qualification in Geography and Biology. In 1986 he began studying Human Geography at the University of Utrecht because he was very interested in man–environment interactions. He specialized in Human Geography of Developing Countries, did his fieldwork in Northern Botswana and finished his MSc in 1990. Since then, Arend Kolhoff has worked for a consultancy firm in Yemen and for the provincial authorities, where he was policy advisor for nature development. In 1993 he was one of the three founders of the international department of the Netherlands Commission for Environmental Assessment (NCEA), where he has been a technical secretary ever since. He has about twenty years of experience as trainer and advisor on the subject of EIA and SEA capacity development in the following countries: Armenia, Azerbaijan, China, Bangladesh, Egypt, Georgia, Ghana, India, Kenya, Mongolia, Myanmar, Namibia, Nepal, Sri Lanka, Tanzania, Tunisia, The Philippines, Zambia, Surinam, Vietnam, Yemen.

He has a specific interest in how to make EIA systems more effective as well as in the integration of biodiversity and climate change issues in EIA and SEA. In 2007 he started his PhD research at Utrecht University at the Copernicus Institute of Sustainable Development.

He is happily married to Judith Maes and the proud father of Jet, Sake, Thijs and Krijn.

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