



## Overcoming low EIA performance - A diagnostic tool for the deliberate development of EIA system capacities in low and middle income countries



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### 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) (Netherlands Commission for Environmental Assessment, 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 and Momtaz, 2013; Kakonge, 2013; Kolhoff et al., 2016; Wells-Dang et al., 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 Fig. 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 and Momtaz, 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 and Momtaz, 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 applied and, as mentioned, the development of the EIA legislation (Kakonge, 2006; Kolhoff et al., 2009, 2013; Marara et al., 2011; Kabir and Momtaz, 2013; Wells-Dang et al., 2016).

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). 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. 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 has so far refrained from 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 that have been defined so 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 has been neither elaborated nor operationalized in the EIA literature. Pearson (2011) states that capacity development is a three-stage process. The first stage is to understand which capacities exist, which 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. However, no direct link is made between capacities and the ultimate performance of the EIA system.

More focused and more deliberate capacity development for improved EIA system performance would benefit from a tool that supports a rapid assessment 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 rapid assessment then provides directions for further, specialized analysis: which capacities of the main organizations

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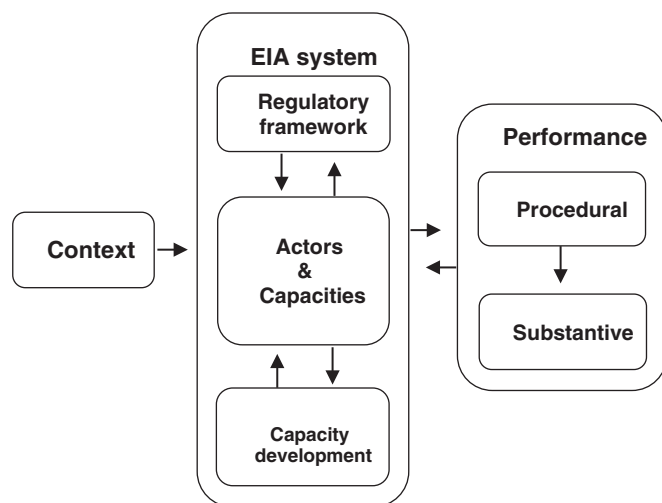


Fig. 1. Factors influencing EIA system performance in LMCs.

involved in EIA need to be examined in more detail, in order for them to be enhanced and their further development secured.

The purpose of this paper is therefore to develop such a rapid assessment tool that aims to identify the capacities of the main organizations that need to be enhanced and secured. 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 long-term substantive performance of EIA systems in LMCs. The tool aims to achieve this by contributing to a quick and qualitative understanding of an impression of EIA system performance in terms of environmental protection (focus on long-term substantive performance) and the key capacities of the main organizations contributing to performance that need to be enhanced. Main organizations are defined as those organizations that considerably contribute to substantive performance. 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 rapid assessment 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., 2017). The 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, international finance institutes (hereafter "donors") involved in developing, implementing, and funding a capacity development program.

Two tools with components comparable to our tool have been developed by two international advisory institutes: The Southern African Institute for Environmental Assessment (SAIEA, 2011) has developed a tool known as the EIA barometer and the Netherlands Commission for Environmental Assessment (NCEA, 2015) has developed a tool known as EIA mapping. The EIA barometer aims to assess primarily procedural performance of a national EIA system by making use of 35 questions (SAIEA, 2011). These questions are answered by representatives of EIA organizations in a participatory way and the scores are discussed and compared with international good practice. Gaps are listed and prioritized and a strategy is developed to remedy the gaps. EIA Mapping is a diagnostic tool that aims to primarily assess procedural performance of a national EIA system (NCEA, 2015). EIA practitioners and stakeholders discuss the performance of their system with the aid of a set of about 800 questions focusing on the regulatory framework and capacities. The outcome is a graphical representation of the current EIA system showing the gap with international good practice and opportunities for

improvement. Both tools focus on procedural performance, they do not systematically identify the main EIA organizations and assess the capacities of the main EIA organizations, they do not assess securing mechanisms and they are not based on scientific literature. Both tools have been used as a source of inspiration for the development of our tool.

In Section 2 the research method that has been applied to develop our rapid assessment tool is described. In Section 3, we explain the concepts that are important in order to understand the development of our tool. In Section 4 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 5.

## 2. Research method – approach applied to develop the tool

In order to develop a rapid assessment tool we followed the stepwise procedure suggested by Verschuren and Doorewaard (2010) for design-oriented research, i.e. research that aims to contribute to the development of policy interventions. According to Verschuren and Doorewaard (2010) such research should be based on the following steps: problem analysis (in our case: a diagnosis of EIA system performance and the main capacities explaining performance) and the design, testing and redesign of the intervention (in our case: an approach to develop weak capacities and secure that they remain at an adequate level).

We first refined the procedure suggested by Verschuren and Doorewaard (2010) by making use of the above mentioned practical tools and by using our own practical experience with EIA and EIA system capacity building. This resulted in a rapid assessment tool encompassing the following steps (see also Fig. 2)<sup>1</sup>:

- Step 1: Collaborative analysis of an impression of the level of long-term substantive performance and a discussion of the contribution of the EIA organizations towards 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 order to refine our tool we presented this four-step approach to three different expert panels and facilitated discussion by using participatory assessment with other panels of expert practitioners, to benefit from their experiences and insights. This is explained in detail below.

### 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 during an EIA expert panel meeting on February 7, 2014 with a homogeneous group of eight representatives of the EIA authority in Georgia: six senior staff members of the EIA department, including the

<sup>1</sup> This tool does not assess the contribution of the EIA regulatory framework to EIA system performance. It is important to acknowledge this because, as described in Section 1, a regulatory framework that is unclear or too ambitious is the other main factor influencing EIA system performance that can be changed. Kolhoff et al. (2013) provide some guidance for assessing the ambition level of the EIA regulatory framework of a country. In this paper, the existing regulatory framework is taken as a starting point. The context in which EIA systems function is important in order to explain their performance, the level of capacities of EIA organizations and for the opportunities and limitations for capacity building. Yet, what context factors matter where, is still an underexplored subject (Runhaar and Driessen, 2007). Because identifying contextual factors is a study in itself we accounted for contextual factors in a tentative way.

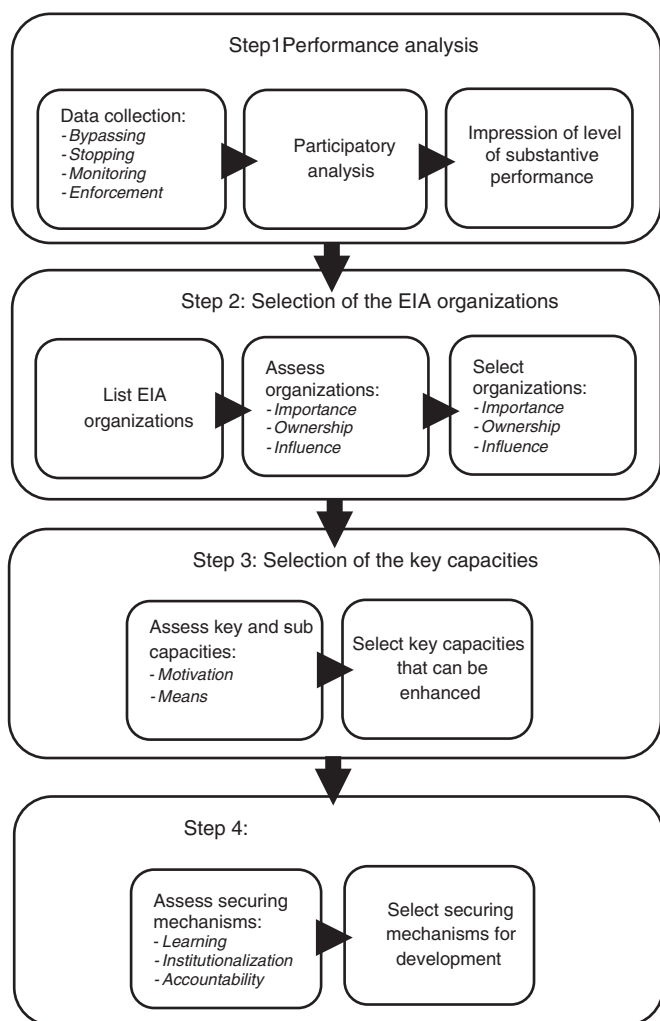


Fig. 2. Overview of the four steps of the rapid assessment tool.

head and deputy head, and the head and deputy of the inspection department. This expert panel took place in parallel with the evaluation of an EIA capacity development program that was implemented in the period 2012–2013. 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.

### 2.1. 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 (IAIA), 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: first, 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? Second, by using one set of terms we tried to avoid miscommunication between the participants during the panel discussion. According to Hisschemöller and Cuppen (2010), expert panels namely face the risk of miscommunication, especially in the case of a heterogeneous expert group where experts have different backgrounds and therefore use the same terms differently. Indeed, this is what happened during the second panel discussion where there was much misunderstanding and different interpretations of the concepts central to our diagnosis tool. Misunderstandings primarily occurred among representatives who had not filled in a questionnaire and who used their own definitions, unlike the representatives of the countries who had filled in the questionnaire and used the same terms as in the questionnaire. 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; instead, they preferred a one-to-one meeting.

### 2.2. 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 > 30 LMCs.

## 3. Concepts: performance, capacity and capacity development

In the following sections, the concept of EIA performance will first be presented. Second, the concepts of capacity and capacity development will be discussed and related to performance. The linkages between these concepts are presented in Fig. 1.

### 3.1. Performance

In the Introduction, procedural and substantive performance were defined, and it was stated that the tool focuses on long-term substantive performance.

### 3.2. Capacity

#### 3.2.1. The concept

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 the Organisation for Economic Co-operation and Development (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), the following levels of capacity can be distinguished: 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 largely determine the performance of the EIA system that we would like to improve (Marara et al., 2011; Kabir and Momtaz, 2013; Kolhoff et al., 2016).

**Table 1**  
Categorization of the capacities of EIA organizations.

Key capacities	Capacities	Sub-capacities	
Ownership	Motivation “the will to”	Organizational capacity	- Willingness to attain goals and meet incentives - Leadership (e.g., strategy) - Networking (formal and informal linkages)
	Means “the ability to”	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; Kolhoff et al., 2016.

### 3.2.2. Capacity of EIA organizations

In a study explaining EIA performance in LMCs, Kolhoff et al. (2016) concluded that the level of ownership of the proponent is strongly correlated with the level of EIA performance: the greater the proponent's ownership of EIA, the higher the level of substantive performance. In this paper, we focus on the key capacity ownership, defined as the extent to which the main organizations involved in EIA aim to achieve the EIA objectives (Stoeglehner et al., 2009; Kolhoff et al., 2016). The level of ownership differs between the organizations involved in EIA, is relative, and is explained through the key capacity motivation (“the will to”) and the key capacity means (“the ability to”). Motivation is defined as the desire to achieve a goal or a certain performance level (Lusthaus et al., 2002). For a categorization of the capacities of EIA organizations see table 1.

## 3.3. Capacity development

### 3.3.1. 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”. Partidário (2005) states that capacity development is more than training, but training remains the starting point.

### 3.3.2. 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 next two sections. As stated in the Introduction, we will focus on the content of capacity development and not on the process, because, as mentioned, little has been published about the content and much has been presented on the process (Acquaye-Baddoo, 2010; Ubels et al., 2010; Mundia, 2009; Armstrong, 2013; Morgan, 2005; Datta et al., 2012).

**3.3.2.1. 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? According to Grindle (2007), the political system largely determines which capacities can be enhanced; guidance on enhancing capacities should therefore take this into consideration. As stated earlier, from Baser and Morgan (2008) we derived the notion that motivation is 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 differences between organizations in terms of mobilizing their capacities to achieve a specific goal (Avelino and Rotmans, 2010). This is important, because Boesen and Therskilden (2005) state that most 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 organizations selected for capacity development need not only be those that are very motivated to contribute to the EIA objectives but could also be 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 this 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.

### 3.3.3. 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 the development of accountability mechanisms at system level (Senge, 1990; Datta et al., 2012; Ubels et al., 2010).

#### 3.3.3.1. Organizational and system learning, and institutionalization.

Organizational learning is the acquisition of understanding, know-how, techniques, and practices that are to some degree new to the organization (Argyris and Schön, 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; this is more difficult, since it is a shared responsibility. One can distinguish between direct and indirect learning because the latter generally takes place unintentionally (De Jong et al., 2012). The importance of organizational learning is emphasized by a growing number of authors who state that capacity development is, in principle, a collaborative or organizational learning process (Pearson, 2011; Armstrong, 2013; Dijkstra et al., 2017). However, the most important step in securing capacity development is the process of embedding the various learning outcomes of individuals in the organization through 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 has been formally stipulated 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.

**3.3.3.2. 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 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.

#### 4. A rapid assessment tool to analyze, enhance, and secure capacities of EIA organizations

##### 4.1. Starting points

In Sections 2 and 3 of this paper, the following conditions or starting points for the development of the tool were described. To recap: first, the existing EIA legislation is considered to be a starting point. Second, 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. Third, the categorization of EIA organizations' capacities as presented in Table 1 is a starting point for steps 2 and 3 and builds upon the work of Lusthaus et al. (2002), Kirchoff (2006), Stoegelehner et al. (2009), Van Loon et al. (2010), and Kolhoff et al. (2016).

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.

##### 4.2. Step 1: analysis of EIA system performance

###### 4.2.1. What to do

The aim of this step is to raise awareness of the need for the capacity development of the given organizations to improve the organizations' long-term substantive performance. This entails assessing the perceived level of substantive performance collaboratively with the organizations involved. It is important to emphasize that it is neither possible nor necessary to precisely determine the level of substantive performance at this stage. The output is used to facilitate discussion among organizations involved in EIA, during which their contribution to the level of substantive performance is analyzed in step 2.

###### 4.2.2. How to assess

For this step we selected indicators to assess substantive performance, using three criteria. First, the indicators must provide information on performance at system level instead of at project level, because this type of information is easier to gather. Second, data gathering should require little time (maximum of one day), as usually most of the information required has already been collected by the EIA authority in basic databases. Third, the indicators must be suitable for use in a discussion among representatives of EIA organizations, i.e., they must be objective and provide a good opportunity to discuss how the EIA organizations have contributed to long-term substantive performance of the EIA system. This means that to ensure that the different roles of the main actors involved are covered, the indicators need to provide information at system level, as that is less sensitive than information at project level.

To identify the main indicators used to assess long-term substantive performance we reviewed the literature. Table 2 lists the indicators applied in at least two references. Based upon the three selection criteria, indicators 2 and 3 were selected because they enable information

gathering to be done at system level, which requires little time. Indicators 1 and, especially, 4, require a more time-consuming analysis of documents at project level to be able to identify project changes and therefore are not suitable for use by our tool. The two indicators selected provide too limited information to meet the purpose of step 1. We therefore searched for indicators that can be used as proxy indicators for long-term substantive performance. 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 that this relationship seems to be much stronger for the EIA follow-up phase. This means that measuring the procedural performance of the EIA follow-up phase in particular can be used as a proxy for substantive performance in LMCs. Based upon the literature, three indicators were found (see Table 2); indicators 9 and 10 were selected, as data gathering also requires little time and information is provided at system level.

To assist the joint determination of an impression of the level of EIA system substantive performance, use is made of the four selected indicators that are described below, three of which are, in principle, quantifiable and therefore suitable for use when meeting with several organizations having different interests (Armstrong, 2013).

In Table 3 these four indicators are operationalized in terms of the extent to which they contribute to substantive performance and system performance 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 3 should be considered as a first outcome which needs to be further analyzed during follow-up research. As an example, Fig. 3 presents the results of the scores for the four indicators for determining EIA system performance for Georgia.

###### 4.2.3. Indicator a: Bypassing: Ascertain the % of projects implemented without an EIA despite an EIA being mandatory

At the expert panel meeting in Georgia the EIA authorities stated that during the period when performance was low (2004–2008), which was mainly explained by a low ownership of the EIA authority for EIA, they estimated that about one-third of the projects requiring EIA bypassed the EIA procedure. This figure dropped to almost zero when the EIA authority became stronger after 2012 due to a regime change, and as a result the performance of the EIA system increased. This correlation was verbally supported by a researcher studying EIA performance in Bangladesh (verbal communication at IAIA-2016). Due to the scarce literature on this indicator, we primarily defined the categories on the basis of practical experience. It is assumed that this indicator is suitable for distinguishing between LMCs with a low performance and LMCs with a moderate level of performance.

The % of projects can best be estimated by the EIA authority and other organizations (e.g., NGOs). In countries where the % bypass is high the EIA authority is probably less interested in providing a true figure, as this might give an indication of their low level of ownership. We assume the following correlations between the score for this indicator and the level of substantive performance:

- Low: > 30% of the proponents execute a project without EIA and permit because they know that they will never be sanctioned by the EIA authority, or they have the power to influence the EIA authority directly or indirectly, or, as revealed by a study in Armenia (CENN, 2004a), they are not aware that EIA is mandatory.
- Moderate: 1 to 30% of the proponents execute a project without EIA and permit because they know that they will rarely be sanctioned by

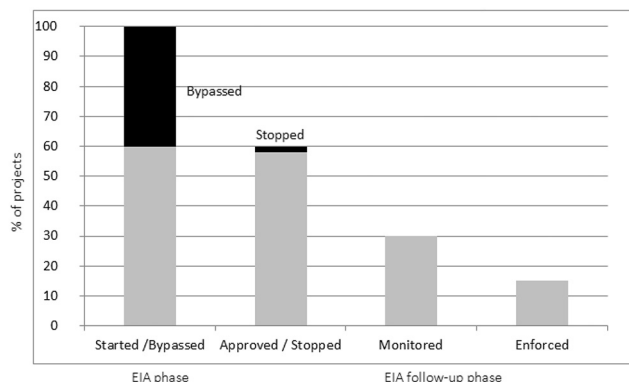
**Table 2**  
Indicators for measuring EIA system performance.

EIA system performance:	Indicators for measuring results (the indicators selected are in bold)	Time <sup>a</sup>	References (studies in LMCs in <i>italics</i> )
Substantive performance (long term)	1. Change in project design prior to the start of EIA (preventive effect)	++	1. Barker and Wood, 1999; Christensen et al., 2005; Arts et al., 2012; Lyhne et al., 2015
	2. <b>Projects bypassing mandatory EIA</b>	+	2. <i>Banham and Brew, 1996</i> ; Cashmore et al., 2004
	3. <b>Projects stopped during EIA process due to expected unacceptable environmental impacts (part of the indicator contribution to consent or decision to approve)</b>	+	3. <i>Banham and Brew, 1996</i> ; Sadler, 1996
	4. Change in project design or management (voluntary or forced) during the EIA and EIA follow-up phases and that positively affects environmental performance	++	4. Cashmore et al., 2004; <i>Marara et al., 2011</i> ; Arts et al., 2012; Lyhne et al., 2015
Procedural performance	<b>EIA phase</b>		
	5. Timely start and integration of EIA in decision-making process	++	6. Sadler, 1996; Heuvelhof et al., 1997; Mwalyosi and Hughes, 1998; Zhang et al., 2012; <i>Kolhoff et al., 2016</i>
	6. Quality of EIA report	++	7. Lee and Colley, 1992; Barker and Wood, 1999; Wende, 2002; Kabir and Momtaz, 2013; <i>Kolhoff et al., 2016</i>
	7. Quality of EIA process (including public participation)	++	8. Wood, 1995; <i>Ahmad and Wood, 2002</i> ; <i>Kolhoff et al., 2016</i>
	<b>EIA follow-up phase</b>		
	8. Quality of EIA follow-up process	++	9. Leu et al., 1997; Morrison-Saunders et al., 2004; Pölonen et al., 2011
	9. <b>Projects with an environmental permit that are monitored/inspected</b>	+	10. Leu et al., 1997; Morrison-Saunders et al., 2004; <i>Kolhoff et al., 2016</i>
	10. <b>Projects with an environmental permit that are enforced</b>	+	11. Leu et al., 1997; Morrison-Saunders et al., 2004; <i>Kolhoff et al., 2016</i>

\* Time required to gather data: + = maximum one day; ++ = more than one day.

**Table 3**  
Indicators for assessing the level of EIA system substantive performance.

Indicators	Level of performance (in % of the EIA projects)		
	Low	Moderate	High
a. Bypassing	> 30	1–30	< 1
b. Stopping	< 1	1–2	> 2
c. Monitoring	< 25	25–75	> 75
d. Enforcing	0	1–50	> 50



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 were approved or were stopped.  
 - Monitored; indicates the % of approved projects that were monitored / inspected.  
 - Enforced; indicates the % of approved and inspected projects that were enforced.

**Fig. 3.** Illustration of the scores for the four indicators for determining EIA system performance in Georgia.

the EIA authority or they have the power to influence the EIA authority directly or indirectly.

- High: < 1%, because proponents rarely or never bypass because the ownership of the 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).

**4.2.4. Indicator b: 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 that a project will be rejected due to EIA; they consider this to be an indication of low EIA performance. Georgia is a country with a low level of EIA performance and the EIA authorities confirmed that in the first years after EIA had been adopted (1995–2003,) no projects were stopped because of corruption, resulting in very low performance. In the period 2008–2015, especially in the last few years, more projects have been stopped, because the EIA authority is stronger.<sup>2</sup> It is therefore assumed that this indicator is especially suitable for identifying countries with a low to very low EIA performance.

The % of projects that started an EIA but were halted by the EIA authority due to expected unacceptable environmental impacts can be provided by the EIA authority. We assume the following correlation between the % stopped and the level of substantive performance. It is therefore expected that:

- Low: Zero or very few projects (< 1%) will be halted, because the EIA authority has a low level of ownership and can be influenced directly by the proponent or indirectly through the proponent's allies. Examples of figures from LMCs: Armenia 1996–2003, < 1% stopped (CENN, 2004a) Azerbaijan 1996–2004, 0% stopped (CENN, 2004b). Georgia 1995–2003, < 1% stopped (CENN, 2004c). Moreover, when a project has been stopped, this is often known, as in LMCs where there is opportunity for public debate, this has been discussed (Devlin and Yap, 2008).
- Moderate: Relatively few projects (1–2%) 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 the project will be stopped. If a project has been stopped, this is probably because the proponent was unaware that it did not meet requirements. According to Devlin and Yap (2008) not all projects that should be stopped will be

<sup>2</sup> Georgia 1995–2003, one project stopped (CENN, 2004c) and for the period 2008–2015 eight projects were stopped < 1% (Ministry of Environment, 2016).

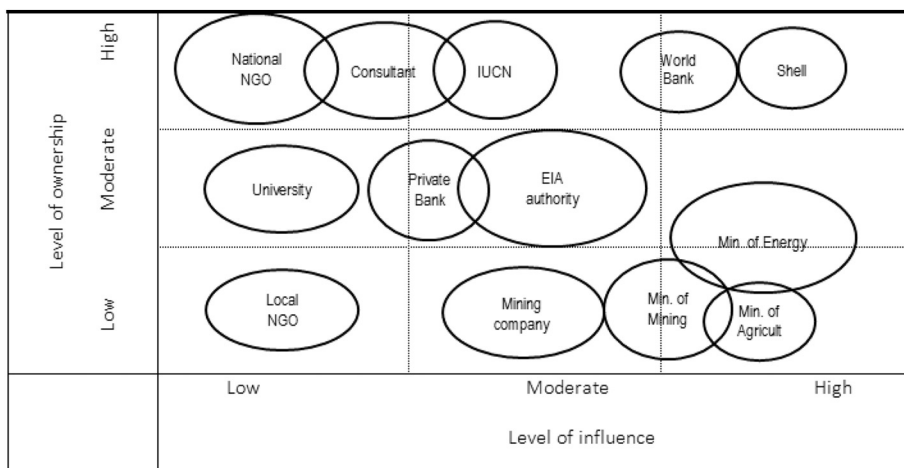


Fig. 4. Hypothetical illustration of EIA organization's mapping.

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

stopped due to political pressure. Exceptionally, figures are available for part of India (an LMC in 1991–1994, showing 2% stopped (Banham and Brew, 1996), for two HICs: Lithuania (2001–2007), showing 2% stopped (Kruopienė et al., 2009).

- High: > 2% of the projects are stopped for the same reason as described for the category moderate but it is expected that political pressure is absent and therefore the % of projects stopped is expected to be higher. For the Netherlands this figure is 3% stopped (Ten Heuvelhof and Nauta, 1997).

4.2.5. Indicator c: 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 for this indicator and the level of substantive performance: the higher the level of ownership of the EIA authority, the higher the score for this indicator and the higher the level of substantive performance.

4.2.6. Indicator d: 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 level of ownership or performance of the environmental authorities in question.

4.2.7. Experiences from the expert panel meetings

At the IAIA meeting there was much miscommunication between the stakeholders on the use of the indicators to measure the level of substantive performance, especially among the stakeholders who had not filled in the questionnaire and therefore did not use the same definitions of performance as the stakeholders who had filled in the questionnaire. 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 discussion among EIA organizations on the factors explaining substantive performance.

The NCEA experts supported the selection of the four indicators to determine an impression of the level of substantive performance but indicated that because two indicators actually determine an impression of performance, this is an indirect way of determining an impression of the level of substantive performance of an EIA system. They suggested including indicator 1, which measures the “preventive effect”. However, this suggestion was not 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 scale instead of a relative one. 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.

4.3. Step 2: Selection of the EIA organizations for capacity development

4.3.1. What to do

The aim of this step is to identify and select the main organizations involved in EIA whose capacities need to be and can be enhanced.

4.3.2. How to assess

The methodology for this step is based upon methods for stakeholder analysis and mapping (IBRD, 1998; Bryson, 2004), adjusted for mapping EIA organizations. All organizations involved in EIA need to be listed. In order to be able to select the main organizations, it is necessary to assess their levels of ownership, influence, and importance: see Fig. 4 for an example.

- Level of importance is based upon the organizations' 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 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.

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.

#### 4.3.3. 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 anticipated 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, as these are considered to possibly also influence 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 in order 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., a 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. The experts also recommended a more precise definition of ownership in terms of willingness or commitment, and considered the level of ownership to be 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.

#### 4.4. Step 3: Selection of the capacities for enhancement

##### 4.4.1. 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.

##### 4.4.2. 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 3.2 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 from other organizations familiar with that organization. Then, whether the capacities with a low or medium score can be enhanced, must be assessed. This entails assessing the will of the organization's management. 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 is to change 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.

##### 4.4.3. 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 of them, because the need for enhancement greatly depends on the stage of the EIA system's development. They therefore 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 view could become important factors that could be enhanced or should be developed in LMCs, in order 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 the whether the capacities that need to be enhanced can be enhanced. 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.



#### 4.5. Step 4: Developing securing mechanisms

##### 4.5.1. 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.

##### 4.5.2. 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 precondition 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, system learning can also 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.

##### 4.5.3. 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 strong 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 to introducing this topic to the experts.

## 5. Discussion and conclusions

In this paper, we have described how we developed a rapid assessment tool to enhance and secure the key capacities of major organizations, with the aim of contributing to improved long-term 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. We have described and justified to what extent this resulted in changes to the tool.

Our tool complements the existing SAIEA and NCEA tools in three ways: one, it is based on available scientific literature; two a systematic identification of the main EIA organizations and assessment of their key capacities; three, it has been applied and refined during three expert panels; and fourth, it has provided conceptual innovation by adding the fourth step. That step requires further operationalization but is novel compared to the existing tools and also in the practice of capacity building for EIA.

The value of this tool is that it builds upon the – limited – scientific knowledge available. It facilitates a better understanding of EIA system performance among the main EIA organizations involved and a 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. The tool can be further validated by being put into practice in LMCs by international or domestic actors. Then the tool's performance needs to be audited, as this might result in suggestions for refinement or extension.

There are four points for discussion. First, the tool supports the execution of an analysis of substantive performance. However, the information generated by the four selected indicators is only an indication of the level of substantive performance and facilitates discussion between the main organizations involved on their contribution to EIA

performance. In order to operationalize low, medium and high level of performance we tried as much as possible to use earlier studies. However, this was not always possible and hence we had to define these levels ourselves. For a rapid assessment tool this is not so problematic. We assume that these four indicators provide sufficient information to achieve the aim of step 1. However, we suggest that in the next version of the tool the following research question be addressed: to what extent can the use of the following indicators listed in Table 2 enrich the discussion between the main organizations about their contribution to performance: timely start and integration of EIA in decision-making; quality of EIA process, including public participation, and change in project design or management during the EIA and EIA follow-up? A prerequisite is that information on these indicators can be made available in a limited time.

The second point for discussion is that the assessment and development of mechanisms to secure the maintenance and further development of capacities that are enhanced are fairly new in the EIA community; because of this, step 4 in our tool needs to be further developed and tested. The third point is that the EIA regulatory framework is part of the EIA system but has not been incorporated in the tool. This factor could be elaborated and incorporated in the next version of the tool. Guidance is provided by Kolhoff et al. (2013), who developed a framework to analyze ambitions as reflected in the EIA regulatory framework.

Fourth (and finally), it was decided not to elaborate contextual factors explicitly as part of the 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 listed by Kolhoff et al. (2009) might be operationalized and incorporated: legal framework, political-administrative system, socio-economic system, and natural environment. The influence of these factors especially needs to be considered during step 1: the discussion among EIA organizations and their contribution to the level of substantive performance, step 3: determining those capacities that can be enhanced and step 4: which securing mechanisms can be developed.

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