
Article:
Khosravi, F orcid.org/0000-0002-3453-1729, Jha-Thakur, U and Fischer, TB (2019) Enhancing EIA systems in developing countries: A focus on capacity development in the case of Iran. Science of The Total Environment, 670. pp. 425-432. ISSN 0048-9697

https://doi.org/10.1016/j.scitotenv.2019.03.195

Enhancing EIA Systems in Developing Countries: A focus on capacity development in the case of Iran

Fatemeh Khosravi[a*] Urmila Jha-Thakur[b] and Thomas B. Fischer[c]

[a]Environmental Assessment and Management Research Centre, School of Environmental Sciences, University of Liverpool, Liverpool, UK,

Khosravi80@liverpool.ac.uk

74 Bedford Street South, Liverpool L69 7ZT, England

Tel: 0044-748-2251350

[b]Environmental Assessment and Management Research Centre, School of Environmental Sciences, University of Liverpool, Liverpool, UK,

Urmila.Thakur@liverpool.ac.uk;

74 Bedford Street South, Liverpool L69 7ZT, England

Tel: 0044-151-7943120

[c]Environmental Assessment and Management Research Centre, School of Environmental Sciences, University of Liverpool, Liverpool, UK,

fischer@liverpool.ac.uk;

74 Bedford Street South, Liverpool L69 7ZT, England

Tel: 0044-151-7943112

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Abstract

Sensitivity to an Environmental Impact Assessment (EIA) system's context is a precondition for being able to suggest recommendation to improving that system. Most recommendations for developing countries take inspiration from developed countries and fall short in their efforts to adapt to the needs of a specific country. In this paper, the authors aim to assess the feasibility of implementing suggested recommendations to enhance Iran's EIA effectiveness. One of the main drawbacks of the Iranian EIA system is deficiency of EIA legislation. However, based on the findings of a review of the literature and semi-structured interviews, it is suggested that by considering contextual factors it is not feasible to overhaul Iran's EIA legislative framework in the short term. Instead, the focus must shift towards increasing environmental awareness and human-capacity development so as to improve the EIA system over time and strengthen EIA legislation.

Keywords: Environmental Impact Assessment (EIA) system, context factors, Iran, capacity building

1. Introduction

Environmental Impact Assessment (EIA) has been globally accepted as a decision-making support tool in project planning (Morgan, 2012; Silva Dias et al. 2019), which aims to incorporate environmental values in proposed projects (Arts et al., 2012). The effectiveness of EIA, in terms of the extent to which it is actually meeting its objectives, has been frequently discussed ever since it was first formally introduced in the United States in 1969 (Cashmore et al., 2010; Lyhne et al. 2017). The main focus in this context has usually been on aspects of procedural and substantive effectiveness (Fischer, 2005; Khosravi et al. 2018). According to Gallardo and Bond (2011), procedural effectiveness means the assessment complies with the principles of the EIA process. Substantive effectiveness is the extent to which the EIA process achieves the set objectives, such as supporting well-informed decision-making and resulting in environmental protection (Sadler, 1996; Baker and McLelland, 2003).

Extensive research has been conducted to evaluate EIA effectiveness (Runhaar et al. 2013; Arts et al. 2012; Phylip-Jones and Fischer 2013; Fischer and Gazzola 2006; Khosravi et al. 2018). However, assessment of effectiveness can only be considered meaningful when considering contextual factors within which EIA operates (Morgan 2012; Sadler 1996; Bond and Pope 2012, Veronez and Montano 2015). Context factors are external to the EIA system but affect its effectiveness (Kolhoff et al. 2016). Although there is no commonly accepted framework for contextual factors in the EIA literature review (Khosravi et al. 2018; Kolhoff et al. 2016), the most frequently mentioned factors include the political system, the socio-economic situation, state of the environment and the institutional and legal framework (Cherp 2001; Annandale 2001; Mao and Hills 2002; Bitondo 2007; Clausen et al. 2011; Wells-Dang et al. 2016; Kolhoff et al. 2016).

Contextual factors, such as socio-economic and political factors are said to be very different in many developing countries compared to many developed countries (Marara et al. 2011). Furthermore, contextual factors are said to be particularly influential on EIA effectiveness in developing countries (Marara et al. 2011; Kolhoff et al. 2009) and failure to tailor to these are leading to low EIA effectiveness. Kolhoff et al. (2018) explained that three groups of factors in particular cause low EIA performance in low- and middle-income countries:

1. EIA legislation that is unclear, given the capacities and the political context (Bitondo, 2000; Marara et al. 2011; Kabir and Momtaz 2013; Kolhoff et al. 2009, 2013).

2. Weak organisational capacities (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).

3. Contextual factors such as the political system, the socio-economic situation, and the legal framework (Kakonge 2006; Kolhoff et al. 2009, 2013; Marara et al. 2011; Kabir and Momtaz 2013; Wells- Dang et al. 2016).

A strong EIA legislative framework is a common recommendation offered by many scholars (Fischer and Gazzola 2006; Badr 2009; Khosravi et al. 2018; Khosravi et al. 2019; Wayakone and Makoto 2012). However, Kolhoff et al (2013) state that the key actors' (e.g. parliaments and the sector ministries) capacities as well as contextual factors such as the political system and economic situation are the most important factors, determining the development of EIA legislation in a country. They also argue that there is a relationship between the vision of the

sector ministries and the parliament on the role of the environment for the socio-economic development of the country and the development of EIA legislation (Kolhoff et al. 2013). Thus, changes in the vision and attitudes of political leaders will be necessary to make EIA more than a 'ritual' (Chen et al. 1999; Wayakone and Makoto 2012).

In addition, simply defining EIA in legislation does not ensure success in EIA practice (Morrison-Saunders and Retief 2012). Although strong legislation has been said to be a prerequisite for an effective EIA system (Sandham et al. 2013), sometimes legislation alone can also be detrimental to EIA because of a lack of knowledge, clarity and enforcement (Fischer and Jones 2016). In some cases, EIA requirements are present but there are some underlying barriers to conducting the EIA. For example, whilst Pakistan has a sound legal basis and comprehensive guidelines, its EIA has not yet evolved satisfactorily (Nadeem and Hameed 2008; 2018). According to Fischer and Nadeem (2014), provincial agencies have the power to impose administrative penalties for violations in implementing EIA conditions, but these penalty provisions have not been used due to the lack of rules and procedures to impose them. India is another example of a democratic country with quite comprehensive EIA legislative provisions that include explicit state penalties, fines and imprisonment for EIA violations. Still, the lack of implementation requirements and lack of enforcement mechanisms has turned EIA almost into a formality (Panigrahi and Amirapu 2012; Jha-Thakur 2011). Therefore, considering context allows EIA practitioners to have realistic expectations with regards to its effectiveness (Hilding-Rydevik and Bjarnadóttir 2007; Runhaar and Driessen 2007; Van Doren et al. 2013; Khosravi et al. 2018).

Although EIA can be seen as a universal tool, lessons drawn from one jurisdiction may not be relevant or suitable in improving practice elsewhere. EIA systems of many developing countries have been evaluated. These evaluations have most of the time resulted in generating recommendations that include improvement in regulatory frameworks and enhanced implementation. However, specific idiosyncrasies of the system are usually ignored in such generic suggestions (Kolhoff et al. 2009). Furthermore, recommendations with regards to additional legislation requirements are usually suitable for countries where these can be expected to be enforced. Importantly, many recommendations are transplanted from Western democratic countries to developing countries without considering their feasibility in the light of the changed context (Kolhoff et al. 2009). Thus, identifying the contextual factors that

influence EIA system performance of a country is the first step in developing suitable recommendations to enhance EIA effectiveness.

This paper has two overall aims. First it develops a list of 'typical recommendations' on the basis of reviewing papers, that have evaluated EIA systems of developing countries and provided recommendations for improvement. Secondly, the paper evaluates the feasibility of adopting these 'typical recommendations' within Iran, considering its contextual factors. In doing so, the paper builds on the work of Khosravi et al. 2018, who explored a set of contextual factors that could influence the development of Iran's EIA system (see Section 2.1.2). Accordingly, this paper is structured into five sections. Following the introduction, the second section explains the EIA system in Iran, its context factors and the methodology adopted, followed by an analysis of the data collected and a discussion of the research findings. Finally, conclusions are drawn.

2. Methodology

2.1. Case study: Iran

2.1.1. The National context

The Islamic Republic of Iran has a population of 80 million inhabitants (Roudi et al. 2017). The political system is a unique and complex blend of theocratic and democratic government. Following the 1979 Revolution, a new constitution based on Islamic traditions was written and Iran's current political system and government structure is based on that constitution (Jone 2009; Khosravi et al. 2019). Geographically, Iran is divided into 33 provinces that are administered by central government (Hashemi 2012). Iran is considered a centralised country based on the distribution of its administrative functions (Dienel et al. 2017).

2.1.2. EIA system

EIA in Iran was first introduced in 1994 on the legal basis of an article in the National Development Plan (NDP) (Khosravi and Jha-Thakur 2018). The EIA Bureau in the Iranian Department of Environment (DoE) is responsible for supervising the screening process, managing the review of EIA reports, deciding on the acceptability of EIA reports, and issuing EIA Guidelines (Ahmadvand et al. 2009; Khosravi et al. 2019). A centralised EIA agency, which is responsible for managing most EIA tasks and which has statutory authority power to approve or refuse the EIA is a model used in a range of countries, including e.g. Australia, Brazil and Mexico (Sanchez and Morrison-Saunders 2011).

Khosravi et al. (2019) performed an evaluation of the Iranian EIA system, focusing on certain EIA system components, including EIA legislation, EIA administration and the EIA process. This evaluation revealed that Iran's EIA system suffers from weaknesses such as insufficient EIA legislation, inadequate screening and scoping, lack of alternative consideration, public participation, EIA implementation and follow-up. Furthermore, later work by Khosravi et al (2018) has revealed that EIA in Iran has had a very limited influence on decision-making due to specific contextual factors in the country that include:

1. **The legal basis:** As an article of the NDP, this is currently not strong enough to support effective action against EIA offenders as it lacks penalties for EIA violations and therefore constrains EIA effectiveness.

2. **Culture of decision making:** The dominant decision-making culture in Iran is centralised and this hinders some elements of an EIA system such as public participation.

3. **Political will:** Iran lacks the political determination to improve the EIA system since some parts of government and higher-level decision-makers believe that EIA approval causes delays to necessary development investments.

4. **Changing party politics:** Although most Iranian politicians believe that considering the environment causes delay to necessary development, there has been less focus on environmental issues under Conservative Governments than under Moderation Governments.

5. **Human capacity:** Another contextual factor influencing Iran's EIA system development is the lack of trained professional within EIA administrations at national and provincial levels, as well as in knowledge institutions, such as universities, and in environmental NGOs.

2.2. Method

Sensitivity to an EIA system's context is a precondition for being able to make recommendations for improving that system. Also, recommendations developed internationally in similar contexts can help to make meaningful suggestions. The methodology adopted in this paper combines these two approaches. Research on the improvement of EIA system performance started with shortlisting countries that are

developing and that have reviewed their EIA systems to propose recommendations for improvement. Based on this criteria, 12 countries were shortlisted and reviewed (See Table 1). Typical recommendations were found to fall under four headings, including a) EIA regulations b) public participation c) capacity building and d) follow-up. Based on the findings, a framework for analysis was developed and is discussed in the subsequent section.

In order to be able to derive tailor-made recommendations for Iran, exploratory interviews were carried out. In the period between 2015 and 2018, fifty Iranian EIA actors were interviewed on various occasions. Ten of these were selected for a more in-depth analysis on the basis of their seniority, knowledge and experience of Iran's EIA system and context. These represent different stakeholder groups within the Iranian EIA system and include EIA Bureau of Iran, academic experts from universities, consultancies and proponents.

The contextual factors were also investigated in detail through three case studies of EIAs of dams constructed in the Urmia Lake Basin. The case studies were conducted in 2017-18 and involved documentary analysis of the EIA reports, semi-structured interviews of stakeholders involved and field visits. The findings of the study will be used here to further complement the understanding of the contextual factors affecting EIA in Iran (Khosravi et al. 2018 and Khosravi et al. 2019).

2.2.1. Framework for Analysis

Typical recommendations on how to improve EIA were identified on the basis of the literature review and synthesised into a conceptual framework which is described in Table 1 below. This framework identifies four categories of improvements to EIA systems in developing countries, including: a) improving public participation; b) increasing capacity building through training; c) strengthening EIA legislation and d) implementation of EIA-follow up.

Table 1: near here

The following four questions were asked during interviews to test the applicability of recommendations for Iran:

1. Would it be possible to enhance EIA regulations in Iran?
2. How could public participation be initiated in Iran?

3. What role could capacity building play in the improvement of Iran's EIA system?
4. How could EIA follow- up work in Iran?

3. Initial recommendations based on interviews and relevant literature in Iran

This section presents findings from the case studies and the 10 exploratory interviewees. The findings have been categorised under the four broad themes that were identified as part of the framework for analysis. Findings are further discussed in the light of the broader literature available on EIA in Iran, including improvement suggestions offered by interviewees.

3.1. Enhancing EIA legislation in Iran

A large number of projects proceed without EIA approval in Iran (Khosravi et al. 2019). For example, there were 53 operational dams in the Urmia Lake Basin (ULB), 34 out of which were exempted from obligatory EIA, based on Iranian screening thresholds. This left a total of 19 dams which required EIA. In selecting the case studies out of the 19 dams, only three dam projects were identified for which EIA reports were prepared in the ULB. Only one of these had EIA approval. The three projects with the EIA reports were subsequently used as case studies. This area (ULB) has been registered under the Ramsar Convention as being of international importance for birds. Despite the unique characteristics of the lake, over the years, the area has undergone severe environmental changes and has lost 80% of its volume due to anthropogenic drivers like damming (AghaKouchak et al., 2015; Khazaei et al., 2019).

Based on the above facts, it can be further concluded that commitment in preparing EIA reports in Iran is weak. This is perhaps linked with weak EIA legislation as due to lack of any penalty code, the proponents are not hindered in commencing projects without EIA approval. Most countries world-wide have prescribed penalties for EIA non-compliance (Elvan, 2018). In Iran, legislation is largely ineffective in triggering action against EIA offenders. This can be proven from the fact that current legislation requires proponents to prepare EIA reports only during feasibility studies but lack a penal code section for offenders. Hence, improved legislation, which includes clear penalties was suggested in previous studies as a key condition for effective EIA (Khosravi et al. 2018).

Interviewees were asked about the possibility of strengthening Iran's EIA legislation. All interviewees confirmed that there is a need for explicit legislation but believed that this was not practically possible as there was no political will on the part of members of parliament and sector ministers to introduce such EIA law. In this context, interviewees recalled a

previous attempt to create EIA-specific legislation in 2014 with the help of previous government departments, including the Ministers of Cabinet and Iran's DoE. The draft EIA bill was prepared by the EIA authority and consisted of 5 chapters, with the 5th chapter addressing penalties. However, it was diluted by sector ministries, represented by the Cabinet of Ministers. The resulting EIA bill was then submitted to Parliament but was rejected. One interviewee claimed that: "Iranian *parliamentarians' mindset is on economic development* and a belief that the environment causes delays to development investments. There is no hope of having EIA legislation with this way of thinking on the environment". Another concurred and stated that: "Although the EIA Act *is the fundamental recommendation to improve Iran's* EIA system, considering current political context and the way of thinking about the environment, it is neither a practical nor feasible recommendation". One interviewee said that "*EIA legislation is the small building block and even if Iran's parliament pass*es this bill, it is not able to do anything itself and the most important item is training and capacity building."

3.2. Improving Iran's EIA effectiveness through capacity building

Kirchhoff (2006) and Kolhof et al. (2018) saw capacity building as the most important mechanism for improving EIA implementation in developing countries (see also Sánchez-Triana, Enriquez and Afzal 2014). Khosravi et al. (2018) also concluded that EIA capacity building is urgently needed to improve Iran's EIA system. Analysis of case studies indicates that EIA reports are prepared based on a generic Table of Content (TOR) and scoping is limited to defining geographical boundaries. Careful questioning also revealed a blurred understanding of some steps of the EIA process amongst most EIA actors, including EIA authorities, consultants, proponents and academics (Khosravi et al. 2019).

Most interviewees were of the opinion that capacity building is a more urgent requirement than EIA legislation. Three interviewees also felt that this should start within the EIA Bureau as that body crucially controls quality by reviewing EIA reports. Several authors previously suggested that some of the staff in the EIA Bureau were not adequately qualified for their role (Ahmadvand et al. 2009; Moradi 2009; Khosravi et al. 2018). This is consistent with Kirchhoff (2006) who concluded that appropriate skills are needed not just within the EIA authority, but also within government departments, developers, EIA consultants, academics and NGOs.

3.3. Initiating public participation in Iran

Public participation seems to be totally absent in the EIA process in Iran and was not included in any of the three EIA reports studied. Some interviewees identified improved public participation as a practical measure, which could lead to increased EIA effectiveness on the basis that people are the most important stakeholders. However, one interviewee claimed that the low level of public 'environmental awareness could have a diverse effect on EIA effectiveness. He said that "awareness is a fundamental requirement for public participation and, due to high rate of unemployment and economic issues, public participation in Iran will be based on economic benefits not environmental concerns." This was mentioned by other interviewees as well and it was suggested that NGOs and the media can play a leading role in increasing public publication by raising stakeholders' awareness about potential environmental and socio-economic impacts of development projects. Moreover, there is no legal requirement for public participation in Iran's EIA process (Ahmadvand et al. 2009; Nouri and Nikoomaram 2005; Moradi 2009). Legal requirements do not have to be the main driver for public participation, in practice. Their absence, though, can be interpreted as a sign of an immature democracy (Morrison-Saunders and Retief 2012).

3.4. Initiating EIA follow-up in Iran

The International professional literature links poor implementation and enforcement to questionable EIA outcomes (Panigrahi and Amirapu 2012; Jha-Thakur 2011; Khadka and Shrestha 2011; Gore and Fischer 2014). The literature review indicates that monitoring is seriously deficient within the Iranian EIA system (Ahmadvand et al. 2009; Moradi 2009). Inspection is also believed to be very poor (Khosravi et al. 2019).

Document analysis of the three cases shows that follow-up design was not considered in EIA reports. Interviewees from proponents stated there is no mandatory requirement for implementing monitoring. In their opinion this was as a result of inadequate staff and equipment required for inspection. They also believed that staffing of the DoE and EIA authority depends on allocated funding. A similar finding has been reported in the case of India where understaffing did not allow EIA follow-up to be implemented effectively (Jha-Thakur 2011). Some interviewees suggested that proponents should support the follow-up in Iran and that EIA should come with a structured plan to audit proponents. It was further advocated that monitoring and the auditing fund should be provided by proponents. In this context, one interviewee suggested that "The Iranian DoE has an auditing Bureau and these

auditing should be done by this Bureau. However, there is a poor coordination among these Bureaus in the DoE".

4. Developing recommendations to improve Iran's EIA system

Various authors have suggested that Iran is a country with an immature EIA system where EIA is neither procedurally nor substantively effective. As procedural performance is a precondition for substantive performance (Van Doren et al. 2012; Khadka and Shrestha 2011) there is a correlation between procedural performance and clear EIA legislation (Kolhoff et al. 2016). As a result, any discussion on how to improve EIA should begin with the role of EIA legislation. This was also confirmed by the interviewees who all suggested that recommendations will need to focus on EIA legislation, followed by capacity building, public participation and follow up.

4.1. Strengthening EIA legislation and improving the EIA system

As already emphasized by Kolhoff et al. (2013) there is a relationship between the vision of sector ministries and parliament on the development of EIA legislation. Several interviewees supported this thinking within the Iranian context. They were of the opinion that, in addition to other contextual factors, the two key groups of national actors (Members of Parliament and the Cabinet of Ministries) were so influential that the EIA bill would not pass the parliamentary stage. Their reasoning was that these actors were focused on economic development and believe that consideration of the environment causes delays to development investments. Kolhoff et al. (2013) concluded that the level of environmental awareness within the sector ministries and parliament is a primary driver of EIA legislation development. Therefore, characteristics of these decision makers and their environmental awareness is an important context factor influencing Iran's EIA effectiveness. Thus, raising environmental awareness and ways of thinking of the various stakeholders about the environment is going to be a precondition for being able to strengthen EIA legislation. However, strong EIA legislation alone does not guarantee success in EIA practice (Morrison-Saunders and Retief, 2012). According to Sandham et al. (2013), South Africa's EIA system restructured its legal basis in 2006 and is now sound, but application is generally lacking. They researched whether EIA quality improved after the major restructuring of the EIA regulations, and found that EIA quality had not changed. Hence, they suggested that improvements should be sought in other ways, including accreditation, training of EIA actors and improved good practice guidance. Their findings were echoed by some Iranian interviewees, and one claimed that

EIA legislation is just a small building block and it would be unable to do anything on its own. This interviewee felt training and capacity building were more important.

4.2. EIA capacity building

All interviewees were of the opinion that Iran's DoE and the EIA Bureau needed to start with capacity building rather than excessively focusing on EIA legislation. Their rationale was that they believed parliament was unlikely to approve any Bill and that improvement should be explored through other means. Capacity building was seen as one of the most feasible ways to do this. The findings show that there is still an urgent need for improved capacity to implement the EIA process in Iran, despite twenty-five years having passed since EIA emerged in the country. Iran's EIA development can be said to be still being at a low level in terms of the categories developed by Jha-Thakur et al. (2009), on 'learning in appraisal'. 'Learning about EIA' (p.135) in terms of understanding EIA legal requirements and procedure is yet to be achieved in the Iranian EIA system (Khosravi et al. 2019).

The case studies also confirmed that there is poor understanding of different steps of the EIA process, indicating that training for consultancies and the EIA Bureau is essential. As previously discussed, interviewees believed capacity building should start within the EIA Bureau, and that improved quality control will force EIA consultancies and practitioners to work harder to meet necessary standards. Other authors made similar recommendations, with Sanchez and Morrison-Saunders (2011) saying that "EIA agencies can be framed as learning organisations" (Argyris and Schön, 1996; Sanchez and Morrison-Saunders 2011) and their staff as knowledge workers (Davenport 2005; Sanchez and Morrison-Saunders 2011). Efforts may start with the EIA Bureau, but should not be restricted to it. Weaver et al. (2008) emphasise the role of EIA practitioners as "pushing the vectors" of sustainability, and Bond et al., (2010, p. 6) argue that "sustainability outcomes in EIA" call for a "learning organisation approach". Whilst EIA agencies may play a central role (Sanchez and Morrison-Saunders 2011), the broader set of actors identified by Kirchhoff (2006) also need appropriate skills. One solution is offered by Weston (2011), who suggested that all planning courses in universities need to include EIA as a part of their programmes, and continuous professional development courses should be on offer throughout the country on an almost continuous basis.

Capacity building can also help improve Iran's EIA institutional weaknesses that are connected with being highly centralised at the national level. The EIA Bureau had formed

provincial EIA commissions and delegated some projects to these commissions for making final decisions (Khosravi et al. 2019). However, insufficient human capacity in numbers and qualifications at the provincial level has meant the desired effect is not yet achieved. On this basis, capacity building may be seen to be a critical factor for EIA administrator decentralisation, even before delegating EIA decision-making responsibility. This recommendation is supported by observations in India where decentralisation itself has not helped to enhance EIA efficiency (Paliwal and Srivastava 2012).

EIA capacity building has been identified as one of the main weaknesses which hinders effective EIA implementation in developing countries (Kirchhoff 2006; Kolhoff et al. 2018). Whilst capacity building is usually used as a synonym for training, it is definitely not circumscribed within it (Bower, 2000, in: Potter and Brough 2004; Kirchhoff 2006; van Loon et al. 2010). Capacity building is beyond training comprising of various sub capacities and components (Partidário 2005) which have been discussed in detail later (See section 6).

4.3. Public participation and improving the EIA system

Public participation has two primary benefits, first, it helps in introducing procedural democracy (Aschemann 2007; Panigrahi and Amirapu 2012) and secondly, it can serve as a mechanism for quality control within EIA (Bond et al. 2017). However, public participation cannot effectively work without embedding a culture of public participation into society (Purnama 2003; Marara et al. 2011).

The political structure of a country is thought to play a crucial role for public involvement in an EIA (Tang et al. 2005; Hasan et al. 2018). Generally speaking, public participation is valued less in countries where the political culture is less open and less democratic (Chen 2013; Purnama 2003). Iran has a centralised decision-making culture, hindering the development of public participation. This is why public participation has been marked as one of the weakest links in the Iranian EIA system (Khosravi et al. 2018). Constraining factors to public participation tend to be greater in authoritarian systems and more so in developing countries than in Western and developed countries (Kolhoff et al. 2009). However, there are examples for developing countries where public participation is well developed (see e.g. Nadeem and Fischer 2011). However, as suggested by Khusnutdinova (2004), civil society plays hardly any role in more authoritarian systems. In Iran, there is no transparency in EIA

and EIA reports are treated as confidential documents that are not available for the public to comment on (Khosravi et al. 2019).

Nevertheless, public participation can and should still be improved within Iran, though, which was recommended by six interviewees. Given the low level of environmental awareness in Iran, interviewees were of the opinion that increasing public participation needs raising stakeholders' awareness of the potential environmental impacts of projects, and that media and NGO's could play a more prominent role in increasing public awareness. As an important first step, it was suggested that the EIA Bureau should grant access to the EIA reports to the public. One interviewee from the EIA Bureau said, "We have a plan to allow public access to the EIA reports in the DoE library and it might be a first step towards transparency". Fischer (2005) supported such recommendations by saying a transparent and clear process is an important precondition for effective participation.

4.4. EIA follow-up and EIA system improvement

Monitoring is expensive and requires qualified and experienced personnel (Badr 2009). However, necessary financial resources are very limited in many developing countries (Marara et al. 2011). Limitations include the number of skilled staff (human capacity), the allocation of budgets (resource capacity) and available technical capacity of EIA actors (Van Loon et al. 2010 Marara et al. 2011; NCEA 2014). However, those capacities differ significantly across the proponents, and the need for proponents to support follow-up in Iran was seen as important by the interviewees.

5. Recommendations and discussion on capacity building

Iran's EIA enhancement needs a phased approach to capacity development programmes. Starting point should be organisational capacity. As interviewees suggested, raising environmental awareness of decision makers (sector ministries and parliament) and changing their way of thinking about the environment is a fundamental context factor to strengthen EIA legislation. They also mentioned increasing the environmental awareness of the public and main stakeholders are important factors. Capacity building and training of EIA stakeholders is necessary, including EIA authorities, consultancies, universities, and proponents. However, implementation of these recommendations depends on the willingness and leadership (organisational capacity) of Iran's EIA authority.

Potter and Brough refute the idea that capacity building equals training by introducing different levels of the capacity pyramid (Figure 1) (Kirchhoff 2006: 8–9). Training is the starting point of capacity building (Partidário 2005; Kolhoff et al. 2018). Kirchholf (2006) introduced a framework to get insight into all capacities used by EIA authorities in Brazil and stated that capacity building is an umbrella concept with some measurable sub categories. These include institutional capacity, organisational capacity, human capacity, scientific capacity, technical capacity, and resource capacity (Figure 1) (Kirchhoff 2006: 8–9). Van Loon et al. (2010) defined sub-capacities further, as follows:

a) Institutional sub-capacity refers to the rules of the game (Lusthaus et al. 2002: 24), i.e. EIA specific rules.

b) Organisational capacity refers to willingness and leadership (Baser and Morgan 2008; Kolhoff et al. 2016).

c) Human capacity is about the qualification and number of all EIA actors, including EIA authorities, the private sectors, knowledge institutes (such as universities), environmental NGOs, public, and the media.

d) Technical capacity is about availability of Information and Communication (ICT) and EA execution methods are central aspects of technical capacity.

e) Finally, resource capacity is about all measurement equipment, cars to site visits and e.g. office resources. It can also include virtual stocks needed for EIA (van Loon et al. 2010).

Van Loon et al. (2010) suggested that EIA capacity should not only focus on one isolated sub capacity as it does not solve EIA capacity problems. There are some countries with strong EIA legislation and weak implementation. However, contextual factors especially the political system, determine what capacities can be enhanced (Kolhoff et al. 2018). In the case of Iran, it was observed that there was no political will to introduce EIA law and the visions of sector ministries and parliament members as the main drivers, hindering strengthening of EIA legislation. Van Loon et al. (2010) also suggest that the lower levels of the pyramid are socio-culturally grounded and harder to implement. The result of interviews confirms this argument. Thus, following the advice of Kirchoff (2006) and Van Loon et al. (2009), organizational capacities (willingness and leadership) should be regarded as the most

important of these recommendations as this sub capacity can ensure that the other capacities such as human capacities, skills and access to funds, are developed (Kolhoff 2016).

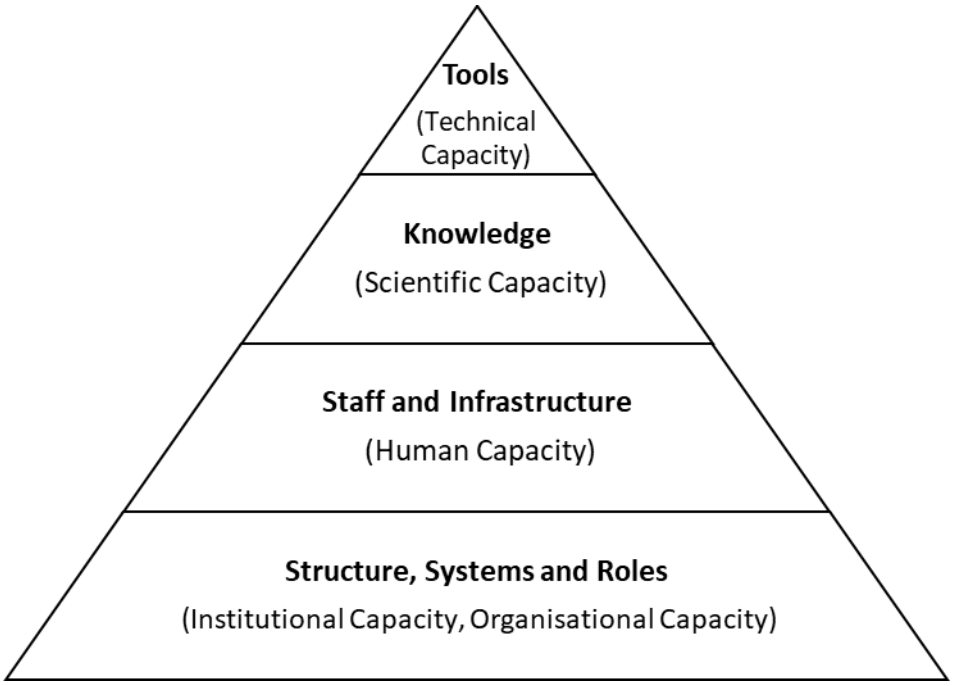

Figure 1: Capacity Pyramid,

Adapted from Potter and Brough (2004), Kirchhoff (2006) and van Loon et al. (2010)

It may seem that completing the lower levels of the pyramid are a precondition for the upper levels. However, this is not the case in Iran as increasing the human capacity of different groups of actors would be needed in order to underpin efforts to strengthen EIA legislation. Thus, as argued, EIA enhancement in Iran needs a phased approach to include all sub-capacities. Here, organisational capacity needs to be prioritised. In the second phase, more effort should be focused on human capacity, including raising awareness, education among public, staff expansion and training. Parallel to increasing organisational, human capacity and providing the ground, a third phase of activities should be geared towards strengthening EIA legislation.

6. Conclusions

Attempts to develop EIA systems further need to start by critically reflecting on country-specific context and capacities. Various authors have argued that Iran's EIA system is in

urgent need of improvement. Not only is Iran's legal situation problematic, but the wider context including organisational, institutional and human capacities pose major challenges.

In this paper, we have assessed the feasibility of implementing 'typical recommendations' to enhance Iran's EIA system. However, in doing so we have taken into account the contextual factors influencing EIA system in Iran. The result shows that multiple dimensions need to be considered in developing an EIA system. Our review suggests that Iranian EIA authorities put their focus almost entirely on strengthening EIA legislation in the hope that this will solve current problems. However, reflecting on experiences elsewhere, it is unlikely that this will lead to success in the absence of political will and an underdeveloped awareness of environmental issues. Also, there is currently no appetite amongst Iranian key actors (members of parliament and sector ministers) to change EIA's legislative framework. Raising environmental awareness, changing the vision of key actors and ways of thinking of the various stakeholders about the environment is going to be a precondition for being able to strengthen EIA legislation. This has been experienced in Georgia, Ghana and Yemen by Kolhoff et al. (2013).

We identified capacity building of particular importance for addressing shortcomings of EIA, which could offer an overall comprehensive solution. In this context, capacity building should not be approached in isolation. What is of crucial importance is to consider all levels of the "capacity pyramid". Completing the lower levels of the pyramid including institutional capacity (EIA legislation) is a precondition for effectively delivering upper levels. However, in case of Iran, enhancing human capacity of different groups of actors is needed in order to underpin efforts to strengthen EIA legislation. For example, increasing environmental awareness and changing the vision of sector ministries and parliament are essential precursors. Therefore, the first phase of capacity development should focus on feasible and short-term sub-capacity development (the upper levels of pyramid like training), whilst in parallel strengthening EIA legislation as a long-term sub-capacity phase. Following this, attention will need to be paid to interpreting human capacity problems. The EIA Bureau and their willingness (organisational capacity) will play a key role in facilitating this. Further research is required in order to be able to assess and score different sub-capacities and finding inter-relational manner to produce more effective capacity guidance.

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgements

We would like to thank the Iranian experts who shared their experiences with us and contributed to marked improvements in the content of our research. The authors also would like to thank anonymous reviewers for their invaluable comments on an earlier version of this manuscript.

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