Environmental Impact Assessment Systems in South Asia[1,2]

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Abstract. The paper reviews the EIA systems at the national level in seven countries of South Asia. It also discusses the differences and similarities among the main elements of current EIA procedures, considering aspects such as the nature of the EIA instrument, the institutional leadership and inter-agency coordination, screening and scoping processes, public participation, access to information, and evaluation of alternatives. The review suggests that the EIA procedures in South Asia are focused on safeguarding the environment from negative impacts by investment projects. Through EIA, authorities tend to establish design and operation conditions that aim to tailor command and control regulations, as well as environmental and land management plans, to specific investments.

1. Introduction

Countries in the South Asia region (SAR) have adopted the Environmental Impact Assessment (EIA) as their main environmental management tool for public and private investments. Although supposedly based on the United States National Environmental Protection Act (U.S. NEPA) enacted in 1969, EIA systems in SAR have been designed with different nature and objectives from the U.S. system, and often used to regulate environmental planning and management of investment projects.

Spurred by international organizations and development banks, SAR countries have adopted EIA systems with common features, incorporating in their design the key elements of what could be considered an international standard (Sanchez-Triana et al. 2014). While each EIA system has its own procedures, they all require an assessment of relevant environmental impacts of all significant actions and the consideration of the EIA findings as a determinant for decision-making. Different from the U.S. NEPA, however, EIA systems in SAR countries require impact mitigation measures specifically tailored to the investment projects.

This paper reviews EIA procedures adopted by seven countries in SAR: Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka (hereafter "SAR countries"). It discusses the differences and similarities among these systems. Sources for this analysis consisted mainly of EIA policies currently in place in each of these countries[3] and specialized literature that included case studies.

2. Nature of EIA

As a result of the enactment of the NEPA in 1969, the U.S. became the first country to adopt the EIA in its contemporary sense. The U.S. NEPA aims to foster excellent action by requiring a process to "help public officials make decisions that are based on understating of environmental consequences, and take actions that protect, restore, and enhance the environment."[4] Under the U.S. NEPA, the EIA could be described as a process to open up decision making to public scrutiny (Ortolano *et al*. 1987; Sanchez-Triana *et al*. 2001). The NEPA's provisions cover all U.S. policies, regulations, and public laws, as well as recommendations or reports on proposals for legislation and other major federal actions with the potential to significantly affect the quality of the human environment.[5]

The SAR countries have adopted a number of environmental assessment tools supposedly based on the U.S. NEPA.[6] These tools focus on two main objectives: (i) to avoid, minimize or compensate the adverse significant biophysical, social and other relevant effects of development proposals; and (ii) to protect the capacity of natural

[1] The findings, interpretations, and conclusions herein are those of the authors and do not necessarily reflect the views of the International Bank for Reconstruction and Development/The World Bank and its affiliated organizations, or those of the Executive Directors of The World Bank or the governments they represent.

[2] This paper is based on the poster "Legal Framework of Environmental Impact Assessment in South Asia" prepared by the World Bank (Lima *et al*, 2015). A similar poster was prepared by the World Bank for Latin American and the Caribbean countries "Legal Framework of Environmental Impact Assessment in South Asia" (Tiffer-Sotomayor *et al*. 2014; Acerbi et al *et al*. 2014).

[3] The analysis does not consider other policy instruments that, independently of the EIA procedures, regulate areas reviewed in this paper (e.g. specific policies or regulations on access to information). Furthermore, this analysis does not cover the subnational level for those countries having federal administrations.

[4] 40 C.F.R. § 1500.1.

[5] Federal actions are defined as those that require the approval of a governmental agency at the federal level.

[6] These tools include: BIQ (Basic Information Questionnaire); IEE (Initial Environmental Examination); EIA (Environmental Impact Assessment); EMP (Environmental Management Plan); SEA (Strategic Environmental Assessment); Environmental Clearance Certificate (ECC); Non Objection Certificate (NOC); EC (Environmental Clearance); EI (Environmental Information); and, EPL (Environmental Protection License).

systems and the ecological processes to maintain their functions. Through EIAs, national authorities often establish design and operation conditions to tailor command and control regulations to specific investments.

3. Institutional Leadership in the EIA System

Under the U.S. NEPA, the EIA process is led by the federal agency that has the sectoral mandate to regulate the actions with the potential for significant environmental impacts (e.g. Energy, Agriculture and Transportation Departments). Thus, the sectoral agency is responsible for preparing the statement on the environmental impacts of each major federal action[7]. It is also in charge for making the relevant decision on EIA approval, as well as supervising the process, hiring the consultants, organizing public consultations, and meeting other regulatory requirements (Ortolano. 1997).

In most of the SAR countries, the investment project developer is responsible for contracting the consultants and supervising the preparation of assessments.[8] With this approach, the environmental authority acts as an evaluator that assesses whether the proposed project mitigates negative impacts for obtaining an environmental license or other type of authorization. The approval of environmental assessment documents is mostly the responsibility of environmental agencies. Exceptions to that approach are Bhutan and Sri Lanka, where sectoral agencies are also in charge of approving EIAs.[9]

4. Screening

Under the U.S. NEPA, the screening process for a "Finding of No Significant Impact (FONSI)" establishes the steps to identify significant environmental effects. When the action is expected to significantly affect the human environment, the proponent (i.e. the sectoral agency) must prepare an Environmental Impact Statement (EIS), "entailing a deeper and more comprehensive analysis of the action's impacts."[10] The two variables that determine significance of project's impacts are context and intensity.[11] When the sectoral agency is uncertain of whether the action is likely to generate significant impacts or not, an Environmental Assessment (EA) is required. The EA should provide sufficient evidence and analysis to determine whether an EIS is called for. If the EIS is necessary, the EA should facilitate its preparation. If not, the agency must prepare a FONSI, explaining why the action will not have significant effects on the human environment.[12] The U.S. NEPA also contemplates a "categorical exclusion" applicable to actions that do not individually or cumulatively have a significant effect on the human environment and that have been found to cause no such effect in previous projects undertaken by the federal agency in compliance with U.S. NEPA. Actions in this category require neither EA nor EIS.[13]

Except for Afghanistan, the screening process in the SAR countries is mostly based on a fixed list of project types or a financial threshold (e.g. India and Nepal) to determine which projects are subject to an EIA, rather than by a tailored analysis of the characteristics of each project, the specific site in which they would be developed, and the identification of significant impacts. Based on the screening report, the competent authority determines whether an environmental assessment is required or not. The main differences across those countries with list-based screening processes center on the flexibility that the lead agency has for expanding, narrowing, or interpreting the list.

The use of lists as screening devices tends to encourage suboptimal screening processes. The rigidity of the lists affect the projects in two ways: (i) in some countries, it limits the ability to filter out from the EIA process those projects that would not generate significant environmental effects; or (ii) several types and sizes of projects are exempted from EIA, even if these projects may cause environmental impacts. The weaknesses of lists as screening mechanisms are not necessarily overcome by providing authorities flexibility to decide how and when to use such lists.[14] In fact, the use of discretionary criteria has been found to be more closely associated with increased probability of error, unequal treatment of similar projects, and opportunities for influencing the decisions taken by

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[7] 42 U.S.C. § 4332.

[8] In Afghanistan, the relevant government agencies undertake the EIA with help of related EIA experts firms, in consultation and according to the regulations set forth by the National Environmental Protection Agency, which is charge of approving the EIA. In India, the project developer must commission accredited firm consultants to undertake the EIA (and individual members of the EIA team must also be accredited).

[9] In addition, the EIA system in Nepal determines that the sectoral agency is responsible for approving the Initial Environmental Examination, while the environmental authority is in charge of approving the full EIA.

[10] 40 C.F.R. § 1502.1.

[11] *Id*. at § 1508.27.

[12] *Id.* at § 1508.13.

[13] *Id.* at § 1508.4.

[14] Except in India, the expert appraisal committees at the national level can recommend modification of the list.

authorities (Abracosa et al. 1987; Hirji et al. 1989; Shepard et al. 1997; Sanchez-Triana et al. 2001), rather than with better environmental outcomes (Hironaka and Schofer, 2002; Meyer et al, 1997; Frank et al, 2000).

5. EIA Scoping

Except for Afghanistan and Pakistan, the scoping procedure is mandatory in the EIA process of the SAR countries.[15] The EIA's scope and depth are defined by the EIA legislation or other norms issued by the environmental agency, or in specific guidelines or Terms of Reference (TORs). In India and Afghanistan, the environmental authority prepares the TORs for the EIA.[16] In Sri Lanka, the Project Approving Agency is responsible for conducting the scoping and elaborating the TORs, in consultation with the Central Environmental Authority. In Bangladesh, Bhutan and Nepal, the proponent submits the TORs and the EIA's scope proposal to the environmental agency for review and approval. Among SAR countries, only Nepal includes mandatory consultations with local governments and relevant stakeholders during the scoping process, providing an opportunity to ensure that EIAs consider the impacts of major concern for all stakeholders.[17]

Most of the SAR countries have defined generic TORs that determine the scope of the EIA instruments and, therefore, do not necessarily consider each action's specific characteristics. In Sri Lanka and India, there may be generic guidelines and TORs, but those are subject to revision and adaptation for each individual project. The generic content of TORs demands an equal treatment of environmental variables whose relative importance varies depending on the specific action. These challenges are not necessarily solved by granting discretion to the authority during the elaboration of specific TORs. As one or several public servants are responsible for determining the contents of the TORs – based on the information provided by the action's proponent and, in some instances, a field visit –, the content of the TORs depends on the education, expertise, experience, and degree of discretion of the individuals involved. As a result, the EIAs of projects with very similar characteristics may be required to consider significantly different components. A specific study on the Pakistani EIA system revealed that scoping from TORs that are not tailored to the conditions of the country sometimes led to largely descriptive exercises with a focus on baseline data collection (Sanchez-Triana et al. 2014).

In the SAR countries, project developers (or the governmental agency responsible for undertaking the EIA in Afghanistan) are responsible for hiring the consultant who prepares the EIA, resulting in an apparent conflict of interest. Developers may therefore have incentives to hire a consultant who will do the bare minimum to meet the legal requirements for the environmental license, and instead focus on overcoming any potential objections to the project. Some countries (e.g. India) have adopted legal provisions stating the qualifications and/or expertise that the consultant must have in order to ensure adequate preparation of EIA documents or requiring that the consultant be enrolled in a formal registry. While these requirements do not modify the developers' incentives, they provide a level of quality assurance regarding the consultant.

6. Public Participation, Access to Information, and Dissemination

Except for Bangladesh, all SAR countries legally require one or more public participation mechanisms, prior to and following the EIA report publication.[18] There is significant variation, however, in how well these mechanisms are regulated and the extent to which the input collected through them may actually influence the authority's decision. Public participation has been one of the assets for improving the region's EIA processes. Participation has been a topic permanently claimed by civil society. In addition, participation has also helped to make visible the constraints, opportunities, and challenges that tended to be hidden by limited screening, scoping, and TOR-preparation stages. Recent improvements have been translated into concrete actions such as requiring developers or environmental authorities to publish notifications in newspapers (e.g. Bhutan, India, Pakistan and Sri Lanka), setting specific periods of time to receive feedback from the public (e.g. Nepal, Pakistan and Sri Lanka), or developing public hearings to discuss the project.

However, public participation commonly takes place at a stage where many crucial decisions have already been made, so participants are only notified about project-related decisions. In Pakistan, for example, while initiated early

[15] The EIA regulation in Afghanistan is not very clear about the scoping stage, which has been somehow mixed the concept with screening stage. In Pakistan, there are no formal requirements for scoping, but the guidelines describe a scoping process, including the role of different stakeholders during this stage.

[16] In India, although a draft TOR is submitted by the project developer, the TOR is finalized by the expert committee of the regulator.

[17] The Sri Lanka system also envisages consultations with local governments and other stakeholders at the scoping stage, at the discretion of the environmental authority. The scale of such consultations depends on the type and level of likely impacts.

[18] Public participation in Bangladesh is determined at the discretion of the proponent or the Director General of the Department of Environment.

in some cases, public participation is usually conducted at the time of the public hearing to discuss the draft EA report (Sanchez-Triana et al. 2014). Thus, public participation becomes largely informative in nature, rather than providing a mechanism whereby public comment and input can enter the decision-making process and affect the outcome of approval decisions (Sanchez-Triana et al. 2014).

Legal provisions regarding access to information also vary significantly across countries. Bangladesh is the only SAR country without a legal requirement for disclosing the EIA report. All other countries require the disclosure of the EIA reports. In Afghanistan and Bhutan, other supporting documentation must be available to the public.

Except for Bangladesh and Sri Lanka, public hearings are mandatory in SAR countries at least for one category of EIA. In Sri Lanka, public hearings may be organized if deemed necessary by the Project Approving Agency. Public hearings can have a more significant effect in building consensus or incorporating communities' concerns into the EIA than the exchange of written information. However, these events are often resource-intensive and, if not properly organized, can easily turn into a community's opportunity to voice demands for issues with little or no relationship to the project.

7. Evaluation of Alternatives

The evaluation of alternatives allows public access to information on the impacts that different alternatives would have. According to the U.S. NEPA regulations, the analysis of alternatives is "the heart of the environmental impact statement."[19] The prepared statement must present the environmental impacts of the proposal and of the alternatives in a comparative form to facilitate the selection of options by the decision maker and the public. Except for Bangladesh and Bhutan, the evaluation of alternatives for proposed projects is mandatory for EIA process in SAR countries. Notwithstanding, alternatives are often evaluated to justify the proposed project's selected site or approach.

8. Evaluators and Evaluation Criteria

In the U.S., once the sectoral agency has produced an EIS that meets the content and procedural requirements, it may make its decision, which must be formalized in a public record of the decision. The record must state what the decision was; identify the alternatives considered by the agency and discuss the environmental, technical, and economic considerations of each alternative and the way in which these were balanced in the decision-making process; and explain whether all practicable means to avoid or minimize environmental harm from the selected alternative have been adopted or the reasons for not adopting them.[20]

Under the model adopted by SAR countries, the competent authority evaluates the EIA prepared by the developer (or the sectoral agency in Afghanistan) and determines whether the assessment meets all legal requirements. With this approach, the authority has limited involvement in the elaboration of the necessary studies and in ensuring that public input is duly incorporated in the EIA process. In addition, the decision-maker has significant discretionary powers to decide whether the EIA is valid or not, and the decision to approve the EIA is based on the official's own interpretations or views. This does not guarantee that the EIA process will result in a better decision being made, as it is not necessarily associated with received public input, systematized environmental information, or the existence of clearly defined criteria to comply with environmental regulations.

9. Environmental Management and Follow-Up Mechanisms

In the U.S., the record of the decision made by the sectoral agency must explain what mitigation measures have been adopted, as well as the reasons why additional measures were not adopted, and provide a monitoring and supervision program.[21] Furthermore, the sectoral agency must include the appropriate conditions in grants, permits, and other approvals; condition funding of actions on mitigation; and, upon request, make available to the public the results of relevant monitoring.[22]

Except for Afghanistan, EIA policies in all SAR countries include reduction, prevention, mitigation, and compensation measures as environmental management plans (EMP). In spite of these countries' efforts, negative impacts and unresolved claims by the public have forged significant issues across the region against different types of projects. The main challenges relate to developers' responsibilities to apply mitigation measures. More important is supervision—by the relevant agency issuing the EIA license—to confirm appropriate application of the measures.

[19] 40 C.F.R. § 1502.14.
[20] *Id*. at § 1505.2.
[21] 40 C.F.R. § 1505.2(c).
[22] *Id.* at § 1505.3.

Most countries include some type of monitoring instrument such as periodic reports, inspections, third-party audits, or audits conducted by the environmental agency.

Independently of the number of EMPs or follow-up plans or programs that are required, these plans are often used as remedies for the lack of legally established environmental standards or formal governmental programs. For instance, the mitigation measures may not necessarily related to the impacts that the project is expected to generate, but to activities, such as reforestation or education, that are socially desirable but that the authority is unable to carry out because of its constrained resources.

One of the greatest paradoxes of EIA systems in SAR is that, although EIA seems to be used as an environmental management tool through which the authority aims to ensure that a large number of projects or activities operate within specific environmental parameters, the countries face several constraints to monitor the action's impacts after the corresponding license or permit has been issued. This is due mainly to lack of budgetary and human resources for supervising the project's compliance with environmental and social management plans, particularly for effective compliance monitoring in the field.

10. Results

The use of EIA as an instrument for the evaluation and mitigation of environmental impacts is a common practice across SAR. As stated in specialized literature, although EIAs in themselves do not lead to significant environmental improvements, EIAs can work as powerful informational tools and lead to an increase public participation and environmental awareness (Hironaka and Schofer, 2002; Meyer et al, 1997; Frank et al, 2000). In practice, however, EIAs tend to focus on meeting pro forma legal requirements, rather than concrete actions to improve the project's environmental performance. While EIAs have made important contributions to enhance the sustainability of specific projects, available evidence suggests that, in general, these assessments tend to lack effective public participation to inform project development, and to result in generic recommendations that are seldom monitored and enforced.

Because of their nature, EIA instruments in SAR aim to manage the environmental impacts of specific projects, rather than serving as a planning tool – based on participatory efforts to discuss the environmental and social concerns of different stakeholders – for governmental agencies' decision-making. Due to the lack of legally established environmental standards in some countries, the EIA has become a "de facto substitute" for environmental regulations (e.g. biodiversity conservation and pollution control regulations) and effective land-use planning, specifically tailored to the investment project to avoid and mitigate negative environmental effects.

11. Conclusions

The trends explored by this paper suggest that the EIA approach of most countries in SAR focuses predominantly on managing the negative environmental impacts of—and avoiding damages to third parties by—specific investment projects, rather than opening up the decision-making processes to public scrutiny. By making EIA the predominant environmental management tool, many countries in SAR have not taken sufficient advantage of EIA's potential role in opening up decision making to public scrutiny. A major challenge in increasing the effectiveness of EIA to improve decision-making is for countries to develop an economically efficient environmental policy and regulatory framework in which different command and control regulations, market-based instruments, and information and disclosure tools complement one another. For most countries in SAR, the development of such a framework could be based on the identification of their environmental priorities, particularly those related to poverty alleviation.

References:

Abracosa, R and L.Ortolano 1986. "Evaluation of the Philippine Environmental Impact Statement System: 1977-1985," *Philippine Planning Journal*, Vol.18, No.1, (October, 1986), pp. 1-29.

Abracosa, R. and L. Ortolano. 1987. "Environmental Impact Assessment in the Philippines: 1977-1985," *Environmental Impact Assessment Review*, Vol.7, No.4 (December, 1987), pp. 293-310.

Acerbi, M., E. Sánchez-Triana, S Enríquez, R Tiffer-Sotomayor, A. Gomes Lima, K. Siegmann, P. Clemente-Fernandez, and N.. Nkrumah.. 2014. *Environmental Impact Assessment Systems in Latin America and the Caribbean*. IAIA Conference, 2014. Available at: http://www.iaia.org/conferences/iaia14/IAIA14-final-papers/Acerbi,%20Marcelo.%20%20EIA%20systems%20in%20Latin%20America%20and%20the%20Caribbean.pdf.

Frank, D. *et al*. 2000. "The Nation-State and the Natural Environment Over the Twentieth Century." American Sociological Review. 65:96-116.

Hirji, R. and L.Ortolano, "EIA Effectiveness and Mechanisms of Control: Case Studies of Water Resources Development in Kenya," *The International Journal of Water Resources Development*, Vol.7, No.3 (September, 1991), pp. 154-167.

Hironaka, A.; and Schofer, E. 2002. *"Decoupling in the Environmental Arena: the case of environmental impact assessment."* Pp. 214-231 in Andrew J. Hoffman, Marc J. Ventresca, (eds.). Organizations, policy and natural environment: institutional and strategic perspectives. Stanford : Stanford University Press.

Meyer, F; *et al*. 1997. *"The Structuring of a World Environmental Regime, 1870-1990."* International Organization. 51(4):623-51.

Ortolano, L., B. Jenkins, and R. Abracosa. 1987. "Speculations on When and Why EIA is Effective." *Environmental Impact Assessment Review* 7 (4): 285–92.

Sánchez Triana, E. (1995-ed.), *Licencias Ambientales: Evaluación de Impacto Ambiental: Instrumento de Planificatión* (*Environmental Licenses: Environmental Impact Assessment as a Planning Instrument*), Tercer Mundo Editores, Bogota, Colombia (1995),

Sanchez-Triana, E. and L.Ortolano. 2001. "Organizational Learning and Environmental Impact Assessment at Colombia's Cauca Valley Corporation," *Environmental Impact Assessment Review*, Vol.21, No.3 (2001), pp. 223-239.

Sanchez-Triana, J. Afzal and S. Enriquez. 2014. "The Role of International Organisations and Development Banks in Pakistan's Environmental Impact Assessment Practices", in *Environmental Impact Assessment Handbook for Pakistan*. Islamabad: IUCN Pakistan. 164 pp.

Shepherd, A. and L.Ortolano., "Organizational Change and Environmental Impact Assessment at the Electricity Generating Authority of Thailand: 1972-1988," *Environmental Impact Assessment Review*, Vol.17, No.5 (September, 1997), pp.329-356.

World Bank. 2002. *Bangladesh: Country Environmental Analysis*. Bangladesh Development Series, Paper No. 02.

World Bank. 2006. *India - strengthening institutions for sustainable growth: country environmental analysis*. Report No. 38292-IN, December 22, 2006.

World Bank. 2012. *Democratic Socialist Republic of Sri Lanka: Review of Environmental Impact Assessment System*.

Annex 1 – Main Legislation Consulted in Preparing this Paper

Country	Legislation
Afghanistan	Environmental Law (2007); Environmental Impact Assessment Regulations (2008); Administrative Guidelines for the Preparation of Environmental Impact Assessments (2007).
Bangladesh	Environment Conservation Act (1995) and its amendments; Environment Conservation Regulations (1997) and their amendments; EIA Guidelines for Industries (1997).
Bhutan	Environmental Assessment Act (2000); Regulation for the Environmental Clearance of Projects (2000); Application for Environmental Clearance Guidelines for Forestry Projects (2004).
India	Environmental (Protection) Act (1986) (with subsequent notifications, rules and standards); Environmental Impact Assessment Notification (1994, revised 2006); Coastal Regulation Zone Notification (1991, revised 2011).
Nepal	Environmental Protection Act (1997); Environmental Protection Rules (1997).
Pakistan	Environmental Protection Act (1997); Environmental Protection Agency Review of IEE and EIA Regulations (2000); Policy and Procedures for filing, review and approval of environmental assessments (1997); Guidelines for the Preparation and Review of Environmental Reports (1997).
Sri Lanka	Coast Conservation Act (now the Coast Conservation and Coastal Resource Management Act) (1981); National Environmental Act (1988); National Environmental (Amendment) Act (2000).