ENVIRONMENTAL IMPACT ASSESSMENT, DEVELOPING COUNTRIES AND WATER RESOURCES

ABSTRACT

This policy brief is aimed at providing information that is both easy to understand and concise for policy makers in developing countries who are skeptical about accepting Environmental Impact Assessment as an environmental management tool. The brief focuses on the subject of Environmental Impact Assessment (EIA) in general with particular emphasis on the challenges of EIA in developing countries and how the EIA process can be properly managed and used to protect water resources.

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INTRODUCTION

Water is by far the most abundant environmental resource with over a third of the earth's surface covered with it [1]. Why then is a large population of the world without enough clean drinking water?

There is no 'one answer fits all' explanation for this. Different countries have different reasons why the quantity and quality of their water resources do not meet the demands of their population. Improper management of water resources is one of many factors responsible for this water insufficiency.

With the continued increase in population, economic development, urbanisation and industrialisation, lawmakers in developing countries are finding it necessary to take steps towards establishing regulations to protect the environment [2].

Environmental Impact Assessment (or EIA as it is commonly referred to) is a predictive environmental management tool. It acts as both a management and a policy tool that is not just useful for planning but also for decision-making. Different countries have different legislations that guide the EIA process with a few developing countries yet to implement the process at all.

This document is aimed at policy makers in countries yet to implement this management process and takes an objective look at the process, benefits as well as challenges that have been encountered so far in developing countries. By doing this, it is hoped that skeptical policy makers see that although there are challenges associated with the impact assessment process, its benefits far outweigh these challenges.

EIA: A MANAGEMENT TOOL

The United Nations Environment Programme (UNEP) defines EIA as a 'systematic framework for identifying, predicting and evaluating the environmental effects of proposed actions and projects' [3].

The process called EIA has been referred to as both a science and an art and was designed to be a predictive and preventive tool aimed at minimising pollution [4].

The concept of EIA as a legislative framework for incorporating environmental and sustainability interests in development projections started in 1969 with the United States' National Environmental Policy Act (NEPA). Since then, several countries have successfully implemented the EIA process.

As an environmental management tool, EIA has proven more effective than other tools like risk assessment and cost-benefit analysis and is the only tool that is enforceable by law [5].

Developed countries have over the past four decades successfully adopted EIA as a planning tool. It has since proved to be an efficient and effective tool that incorporates environmental concerns into development planning and can also provide a systematic means for regulators to monitor compliance with promises made at project inception.

However, the concept of EIA is still relatively new in some developing countries and a few countries still have not implemented legislation concerning the process.

As a result of increased population and industrialisation, many developing countries face challenges with land and water pollution and/or scarcity. With properly conducted EIAs, land and water resources are better managed, allocated and protected from pollution and even scarcity.

CONDUCTING AN EIA

Although different legislations govern the EIA process from country to country, most countries conduct EIAs in tiers which include:

1) **Screening** which decides whether or a particular development requires an EIA to be conducted. Screening generally involves details like the location, type and size of a proposed project [6]. Common sense has to be

applied in deciding if a proposed project will have sufficient environmental impact to require an EIA.

2) **Scoping** involves research as well as expert advice to recognise the project's environmental impacts. For scoping to be effective, geographic and time boundaries have to set for analysis. Getting the right 'scope' is a delicate balancing act as having too narrow a scope could lead to missing an important effect. Too broad a scope on the other hand will lead to wasting money, time and manpower [6].

3) **Initial Environmental Examination** uses clues from the scoping exercise to conduct further investigations. While scoping identifies the environmental issues associated with a project, environmental examination delves further into the issues and tries to identify mitigation measures. In order to effectively suggest mitigation measures, there must be an understanding of the severity of identified impacts. Impacts can be described using terms like 'highly significant' or 'of minor significance' [6].

4) **Detailed EIA Study** which follows the same principle as initial environmental examination but in a more detailed manner. Issues dealt with are reassessed to ensure they have been satisfactorily addressed and where necessary, new issues are identified. Final recommendations from a detailed EIA study should not only specify mitigation measures, it should also include an appropriate environmental management plan.

ABOUT EIA

- The purpose of EIA is not to impede economic growth.
- An EIA should not just enumerate the likely consequences of a proposed project. It should also include environmental protection measures which ensure that the potential adverse effects associated with a project are kept minimal.
- For effectiveness, EIA should be carried out by a team comprising multi-disciplinary personnel ranging from engineers and scientists to economists.

BENEFITS OF EIA

Better Planning and Design

With the implementation of EIA regulations, planners and developers have had to consider different scenarios before deciding on a design and location for each project. Doing this results in better planning and better design overall. A well designed project not only has the potential to minimise impacts on the environment and human health, it also helps to avoid costs associated with remedial action or damage compensation [5].

Savings in Operating Costs

By predicting possible impacts of a project, EIA helps in saving costs that would have been incurred by unforeseen negative impacts. EIA as a predictive tool helps to save the cost of making changes late in the project cycle and employs an 'anticipate and avoid' method instead of a 'react and fix' one [5].

Legal and Regulatory Backing

Being the only environmental management tool that has legal and regulatory backing, EIA is enforceable by law. While other environmental assessment tools (such as life cycle assessments) are important and have their place in project planning, the fact that they cannot be enforced makes them less effective than EIA.

The presence of well-defined legislation, rules and guidelines stating clearly the rights and obligations of each stakeholder has helped to make EIA the effective management tool that it is [3].

CHALLENGES OF EIA

Although a few of the many benefits associated with this assessment process have been discussed, there are a number of challenges facing it as well. A lot of these challenges stem from the fact that the process is relatively new in developing countries. A few of these challenges are discussed.

Limited Resources and Technical Knowledge

The major challenge facing EIA in developing countries is limited resources and technical knowledge. The volume of work required to conduct an EIA more often than not exceeds the number of qualified personnel [7]. As a result, companies employ people who know little or nothing about environmental management to conduct EIAs. This lack of expertise in turn leads to poor quality reports that do very little in the required assessment.

Lack of Environmental Data and Climate Forecast

Many developing countries do not have proper data collection methods. As a result, data available is often unreliable or incomplete. This makes the EIA process harder to carry out. It might be necessary to refer to such information as the geology of the land or the flood history of an area in the course of carrying out an EIA. This lack of data limits EIA considerably and leads to expensive data acquisition costs as each project has to generate its own data rather than accessing available local, regional or national data.

Ethical Challenges and the Human Factor

The main objective of an EIA is to protect the environment from damage usually in form of pollution. Sometimes, this could be at the detriment of human beings. For instance, building a new hospital could be deemed as unfit for the environment because there is a lake in the area and the project will inevitably disrupt the aquatic life there. Now the question is: Is aquatic life more valuable than the thousands of lives a hospital would save? While the reason for this decision might appear laudable on paper, convincing the average person to see this might be tough. Situations like this make it difficult for EIA to be viewed as a tool for sustainable development. Instead, it can sometimes be seen as a hindrance to socio-economic development.

CONCLUSIONS

Water resources, whatever form it occurs in can benefit from properly conducted EIA. Protecting water resources is not an easy task but can be made easier if EIA is carried out properly.

Environmental Impact Assessment should therefore be seen as an integral part of water resource management without which water resources are exposed to several forms of pollution and mismanagement.

Although a number of challenges facing the EIA process have been outlined, its benefits far outweigh these challenges.

The challenges associated with EIA cannot all be solved the same way. A few suggestions on how some of these challenges may be handled include:

1. Creating awareness for the use of EIA.
2. Ensuring there are well-defined regulations and legislation concerning the conduction of EIAs.
3. Monitoring and enforcement of EIA legislation.

RECOMMENDATIONS- KEY POINTS TO REMEMBER

- Protecting water resources should be at the top or close to the top of every decision-maker's list of important environmental factors to consider before any decision is made.
- Decisions concerning development projects should be focused on the environmental issues which more often than not are subjective and not economic gain or loss [5].
- The results of EIAs should be written as simply as possible to enable policy makers understand it easily and make informed decisions based on it. However, this should not compromise the contents and quality of the reports given.
- EIA is a science first and an art second. If treated any other way, it any other way will not achieve its objectives.

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