Chapter II: The Philosophy and Jurisprudence of EIA

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2.1 Introduction to the Concept of Development

The history of evolution of mankind on earth reveals that in initial stages of human civilization there was more harmony between nature and mankind. However, this equation changed drastically with the gradual development and constant progress in socio-economic life in human society.

Slowly, Environment and Development became two different facets and got separated in conditional clause of “either-or”. As a result a dimension of conflict emerged between the domain of Environment and Development. With the rapid pace of development, the scope of reconciliation between the two became more and more negligible.

2.2 The Conflicting Domains of Environment and Development

During the era of post colonizaion and industrial revolution, followed by World Wars, the prevailing philosophy was that each nation had sovereign right to achieve socio-economic development. Accordingly, it was proclaimed that every nation had the right to development by exploiting its own natural resources available within their territorial jurisdiction and supported by their respective legislative framework. Thus, socio-economic development became the topmost priority among these nations. Since then, the concern towards the potential adverse environmental impacts caused by the various socio-economic developmental activities was gradually ignored by the states. The unplanned growth and lack of ecological concern in the designing as well as implementation of these developmental policies are often said to be responsible for the degradation of the natural environment of earth.
This trend of uni-directional socio-economic development, which to some extent was incompatible with the environment, continued until early 1970s. Thereafter, in 1972, the experts made a breakthrough at Founex in Switzerland by proposing the agenda of integration of Environment and Development, just prior to the Stockholm Conference.

This clearly marked a distinction in the prevailing outlook and philosophy of states towards the environment. The cause and effect analysis of the environmental degradation was done and the sole responsibility of environmental degradation was put on the states and its various anthropogenic activities. As rightly it was held in the famous document of “Our Common Future” that;

“Man is the creator and moulders of his environment”. 6

In this context the term “Environment” can be well interpreted as the bio-physical environment, within which all the life forms on earth are sustained. Since the dawn of human civilization, human race has made tremendous progress in all sphere of human life. The human society has evolved tremendously from the prehistoric nomadic society to agrarian society and from agrarian to industrial society and further to contemporary technologically advanced society. 7 As we know, that in each of the said stages of transformation in human society, the socio-economic developmental activities had gradually started affecting the environment of the earth adversely.


2.3 Evolution of Environmental Management and EIA tool

It is well evident that presently we are already experiencing several ‘spill-over costs’ of our ‘so-called’ growth and developmental activities across the globe. It was for the first time in Stockholm Conference\(^8\), that the need for the preservation the human environment and prevention of further degradation of the earth’s environment was considered and deliberated upon a global platform.

However, the Stockholm Conference remained successful only in creating the awareness towards environmental challenges as well as defining and conceptualizing the philosophy at a global platform for the first time.\(^9\)

Thereafter, the actual credit for preparing the blueprint for the implementation of the mantra of Sustainable Development in practice goes to the Rio Conference of 1992\(^{10}\). The principles 15\(^{11}\) and 17\(^{12}\) of the Rio Declaration, clearly spells out the need for

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\(^8\) Conference of Human Environment was held at Stockholm, in 1972.

\(^9\) The concept of was defining in the Burtland Report, “as the development which meets the need of the present generation without compromising the need for the future generations,” World Commission on Environment and Development’s (also known as Brundtland Commission) report Our Common Future (Oxford: Oxford University Press, 1987), available at http://www.worldbank.org/depweb/english/sd.html, [last visited on June, 2011].


\(^11\) Rio Declaration, 1992 Principle 15: “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation,” available at http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163, [last visited on June, 2011].

\(^12\) Supra, Rio Declaration, 1992 Principle 17 : “EIA a national instrument shall be undertaken for the proposed activities that are likely to have significant adverse impact on the environment and are subject to a decision of a competent national authority,” available at http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163, [visited last at June, 2011].

Thus, EIA was perceived as a tool which concentrates on the problems, conflicts and natural resource constraints that might affect the viability of any developmental project. Further in Agenda 21 which is considered as the most significant by-product of the Rio Conference, the concept of “Green Productivity” was also proposed.

In this context, it would be apt to discuss India’s role in the matter of environmental protection and conservation. The Article 253 of the Constitution of India mandate that India shall play a role of an active global partner in the all major environmental initiatives in the world. It is very significant to mention that India has also adopted the philosophy of Sustainable Development and its essentials tools like Precautionary Principle, Polluter Pays Principle, Principle of Intergenerational Equity, Environmental Impact Assessment etc by incorporating them into its local municipal laws. The Indian judiciary has very well synthesised and extensively interpreted

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13 The International Association for Impact Assessment (IAIA) defines an EIA as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made. International Association for Impact Assessment (IAIA), available at http://www.iaia.org/, [visited last June, 2011].

14 Agenda 21 - addresses the pressing problems of today and also aims at preparing the world for the challenges of the next century. It reflects a global consensus and political commitment at the highest level on development and environment cooperation. Agenda 21: Chapter 1: Preamble, Earth Summit, 1992.

15 The concept of “Green Productivity” signifies a new paradigm of socio-economic development aimed at the pursuit of economic as well as productivity growth while protecting the environment.

16 Constitution of India, 1950 - Article 253 - Legislation for giving effect to international agreements: Notwithstanding anything in the foregoing provisions of this Chapter, Parliament has power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or countries or any decision made at any international conference, association or other body.

17 Vellore Citizens Welfare Forum vs. Union of India and others, AIR 1996 SC 2115. – Wherein the Hon'ble Supreme Court held that: "We have no hesitation in holding that the precautionary principle
these aspects into its local laws by using the tool of judicial activism. Thus, India’s contribution in the development of environmental jurisprudence is considered as quite significant.

At the global level, it is only after Stockholm Conference, 1972, that the consciousness and awareness towards the environmental protection was popularized globally. Thus, it will be very apt to say that the foundation of modern International Environmental Law was laid down through the non-binding Stockholm Declaration of 1972. The most important outcome of this declaration was the acknowledgement of the obligation of human being towards protection and preservation of the environment at a global level, as it held; “…..man bears a solemn responsibility to protect and improve the environment for the present and future generations.”

Although Stockholm Declaration of 1972 was successful in creating awareness for the environmental issues and prompting the need for protection of environment for the betterment of mankind, however it failed to lay down any concrete steps required for the achievement for the integration of Environment and Development.

Later, in 1987, it was Mrs. Brundtland, who achieved the next major breakthrough by proposing the conceptual framework of the term “Sustainable Development”. The

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basic premise of the concept of Sustainable Development is based on the philosophy of the integration of Environment with Development.

Further, the UN General Assembly through its resolution of 1989 rigorously advocated the issue of integration of the Environment and Development. Thereafter, again in 1992, at the United Nations’ Conference on Environment and Development, held at Rio de Janerio also known as the Rio Conference\(^{21}\), the global community took the next concrete step towards environmental protection by proposing the need for the integration of Environment and Development for the achievement of Sustainable Development.

In its preamble of Rio- Conference, the following twofold objectives were proposed:

- The need for building a global partnership for environmental protection.
- The need for a balanced and integrated approach towards the environment and developmental issues.

The Rio Conference also came out with a blueprint Agenda 21 to meet the environmental challenges of the 21\(^{st}\) century on one hand and to lay down the various principles for the integration of Environment with Development on the other hand.

The various tools for achieving the goal of Sustainable Development are as follows:

- *Precautionary Principle*

- *Polluter Pays Principle*

- *Environmental Impact Assessment*

Principle of Intergenerational Equity

Principle of Equitable Benefit Sharing of Resources

Among the various tools and techniques of Sustainable Development EIA is considered as a sub-tool of the Precautionary Approach.

It is based on the premise of:

“An ounce of Prevention is better than a pound of cure” 22

EIA is adopted as a preventive step to minimize the various potential negative impacts of any developmental project/activity on the ecology.

2.4 The conceptual aspects of EIA

The EIA is an interdisciplinary and multi-dimensional concept. The preventive exercise of EIA is undertaken to mitigate the negative impacts of developmental projects on environment whether it is long term or short term.

The IAIA defines the concept of EIA as;

“*The process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.*” 23

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Hence, we can say that EIA was designed as a preventive tool and as a measure to implement the concept of Precautionary Principle to achieve Sustainable Development for the betterment of mankind globally.

There are various stakeholders of the EIA process such as:

- Manufacturers, Traders, Business and Industrial lobby,
- Environmental Consulting Firms/ EIA Consultants,
- Regulators, Governmental authorities/concerned departments of Pollution Controls Boards, Ministries of Environment, Land, Industry, Trade and Commerce, etc.
- Local residents inhabiting the site of developmental project or local residents likely to be affected by any given project/activity,
- NGOs, Environmental Organizations, Social Activists, Scientists and experts
- Judiciary and other foras

The widespread experience of EIA as an anticipatory environmental management tool had generated a considerable debate over the extent to which it can achieve its objective and purposes. During the literature review, we found that there are several instances of gross procedural violations of the guidelines and procedural aspects of EIA, especially in India.

There is substantial number of cases in India of such violations of EIA laws. In such instances the roles played by the various stakeholders were under question and hence this provided the further scope of research and analysis. It was found that there were
several cases, where the environmental clearance through EIA was obtained on the basis of false reports and manipulative data.

Hence, such incidents clearly violate the basic objectives of EIA. Moreover the recent amendments in EIA Notification of 2009 have been severely criticized by the environmental lobby. Environmentalist from non-profit organisation Green Alternatives\(^{24}\) held that;

“It is a move to dilute the law and help the industry”.

\section*{2.4.1 The Definitions of EIA & its critical analysis}

There have been several efforts to define the concept of EIA by scholars and experts and the definitions vary from the perception, viewpoint, context, need and objective for which EIA has been defined. We can look at few of the definitions for the analysis and conceptualisation purpose.

1. “\textit{The process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of development proposals prior to major decisions being taken and commitments made.}”\(^{25}\)

2. “\textit{Environmental Impact Assessment (EIA) may be defined as a formal process used to predict the environmental consequences of any development project. EIA thus}

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\textsuperscript{24} P R Arun of Green Alternatives was quoted by Sumana Narayanan, \textit{“A formality called EIA”}, Feb 28, 2009, available at http://www.downtoearth.org.in/node/3061, [last visited Jan, 2013].

\textsuperscript{25} International Association for Impact Assessment (IAIA), available at http://www.iaia.org/, [visited last June, 2012]
\end{flushleft}
ensures that the potential problems are foreseen and addressed at an early stage in
the projects planning and design.”26

3. “The purpose of the environmental assessment process is:

(a) to support the goals of environmental protection and
(b) to integrate environmental protection and economic decisions at the earliest
stages of planning an activity,
(c) to predict environmental, social, economic, and cultural consequences of a
proposed activity and to assess plans to mitigate any adverse impacts resulting
from the proposed activity, and
(d) to provide for the involvement of the public, department of the Government
and Government agencies in the review of the proposed activities.”27

4. “Balanced assessment of effects on the environment should encompass a number of
considerations. Depending on the nature, scope and significance of the project or
proposal the assessment may include consideration of ecological, economic, cultural,
aesthetic, health and safety, social and amenity impacts in relation to decisions on the
sustainable management of natural and physical resources.”28

http://www.gdrc.org/uem/eia/define.html, [visited last June 2012].

27 Alberta Environmental Assessment and Enhancement Act (38), Environmental Protection and
Enhancement Act, Revised Statutes of Alberta 2000 Chapter E-12, available at

5. “Environmental Impact Assessment is a planning tool that its main purpose is to
give the environment its due place in the decision making process by clearly
evaluating the environmental consequences of a proposed activity before action is
taken. The concept has ramifications in the long run for almost all development
activity because depends on protecting the natural resources which is the foundation
for further development.”

6. “Environmental Impact Assessment (EIA) is a tool used to identify the
environmental, social and economic impacts of a project prior to decision-
making. It aims to predict environmental impacts at an early stage in project planning and
design, find ways and means to reduce adverse impacts, shape projects to suit the
local environment and present the predictions and options to decision-makers. By
using EIA both environmental and economic benefits can be achieved, such as
reduced cost and time of project implementation and design, avoided treatment/clean-
up costs and impacts of laws and regulations.

The key elements of an EIA are:

(a) Scoping: identify key issues and concerns of interested parties;

(b) Screening: decide whether an EIA is required based on information collected;

(c) Identifying and evaluating alternatives: list alternative sites and techniques
and the impacts of each;

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(d) Mitigating measures dealing with uncertainty: review proposed action to prevent or minimise the potential adverse effects of the project; and

(e) Issuing environmental statements: report the findings of the EIA." 30

7. “Environmental impact assessment is, in its simplest form, a planning tool that is now generally regarded as an integral component of sound decision making... as a planning tool it has both information gathering and decision making component which provides the decision maker with an objective basis for granting or denying approval for a proposed development.” 31

8. According to Wathem, the jurisprudentially the EIA was expressed as ‘EIA has been the both ‘Science’ and ‘Art’, reflecting the concern both with technical aspects of appraisal and effects of EIA upon the decision making process.” 32

After analysing the above stated definitions of EIA, we can say that the basic attributes of the EIA concept can be listed as follows:

1. EIA is a tool to identify and evaluate the effect of Development on Environment.

2. It aims at mitigating the adverse environmental impacts.

3. It helps to assess the potential ecological consequences of any socio-economic developmental project on the environment.

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4. EIA also promotes the environmental planning and management.

5. EIA helps to enhance the scope for public participation in environmental decision making.

6. The EIA can be different in nature and the type of EIA is which is to be applied in a given project largely depends on the very nature and type of the project itself.

7. It has emerged as significant environmental planning and management tool.

8. EIA is designed to make socio-economic development more eco-friendly and sustainable.

9. The EIA involves the holistic assessment of a given developmental project on the various parameters like social, anthropological, economical, ecological, scientific and technical, etc.
2.4.2 The core essentials of EIA

According to the Alberta’s Environmental Decision Making Process\(^{33}\), the core essential of the EIA process has been explained in the following diagram:

1. Diagram illustrating the essential components of EIA process

2.4.3 The Guiding principles of due process and EIA administration

As Sadler has illustrated an ideal EIA process should essentially have the following attributes:

**Responsive:** Appropriate and timely opportunities for the public to be informed and heard.

**Efficient:** Minimum time and cost burdens on proponents and participants, consistent with meeting accepted requirements and objectives of EIA.

**Equitable:** Fair treatment of all participants, without bias toward or against any party.

**Transparent:** Open and accessible process, with clear, easily understood requirements.

**Accountable:** Parties are responsible for their actions, in compliance with process requirements.

**Certain:** Guidelines and timelines followed, with any variance subject to authorisation by the administering body.

**Pragmatic:** Flexible application of the process, adapting it to the proposal, potential impacts and purpose of decision-making.

**Credible:** The process is implemented objectively and administered impartially.  

2.5. **The Classification of EIA Process and Model**

According to a classification made by the expert Achieng Ogola the EIA can be divided into following types:

1. **SIA**- Social Impact Assessment
2. **HIA**- Health Impact Assessment
3. **SEA**- Strategic Impact Assessment

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According to another study the experts have classified the EIAs in the following types according to the subject matter of the impact assessment involved:

I. **Industrial products** - Product environmental life cycle analysis (LCA) is used for identifying and measuring the impact on the environment of industrial products. These EIAs consider technological activities used for various stages of the product: extraction of raw material for the product and for ancillary materials and equipment, through the production and use of the product, right up to the disposal of the product, the ancillary equipment and material.  

II. **Genetically modified plants** - There are specific methods available to perform EIAs of genetically modified plants. Some of the methods are GMP-RAM, INOVA etc.

III. **Fuzzy Arithmetic** - EIA methods need specific parameters and variables to be measured to estimate values of impact indicators. However many of the environment impact properties cannot be measured on a scale e.g. landscape quality, lifestyle quality, social acceptance etc. and moreover these indicators are very subjective. Thus to assess the impacts we may need to take the help of information from similar EIAs, expert criteria, sensitivity of affected population etc. To treat this information, which is generally inaccurate, fuzzy arithmetic and approximate reasoning methods can be utilized. This is called as a fuzzy logic approach.

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IV. At the end of the project, an EIA should be followed by an audit. An EIA audit evaluates the performance of an EIA by comparing actual impacts to those that were predicted. The main objective of these audits is to make future EIAs more valid and effective. The two main considerations are:

- **Scientific** - to check the accuracy of predictions and explain errors.
- **Management** - to assess the success of mitigation in reducing impacts.

Some people believe that audits be performed as a rigorous scientific testing of the null hypothesis. While some believe in a simpler approach where you compare what actually occurred against the predictions in the EIA document.\(^39\)

EIA process is not a completely fool proof process, rather it has some demerits too. On one hand it generates huge benefits in selection of project location, process, design, development actions, and decision-making; however, on the other hand in the current practice of EIA there are a number of flaws, shortcomings and deficiencies.

## Table illustrating Pros and Cons of the EIA process in brief

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<tr>
<th>Pros</th>
<th>Cons</th>
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<tbody>
<tr>
<td>Provides systematic methods of impact assessment</td>
<td>Often causes delays and Time-consuming process</td>
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<tr>
<td>Facilitates the scope for public participation</td>
<td>Considers as a Costly affair</td>
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<td>Estimates the cost/benefit trade-off of alternative actions</td>
<td>Public participation is comparatively less during practise and implementation</td>
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<td>Provides effective mechanism for</td>
<td>Unavailability of reliable data (<em>mostly in developing countries</em>)</td>
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<td>- environmental integration</td>
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<td>- negotiations</td>
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<td>- feedback</td>
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<tr>
<td>Top-level decision making</td>
<td>Too focused on scientific and technical analysis at times</td>
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<tr>
<td>Triggers institution building</td>
<td>Poor presentation of EIA report – where bulky volumes, scientific explanation, difficult to understand for the layman.</td>
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<td>Achieve a balance between the impact of developmental and environmental concern</td>
<td>Compliance monitoring after EIA is seldom carried out</td>
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2.6 Overview of the EIA regime Worldwide in brief

The United States was the first country to assign ‘Mandatory Status’ to EIA through the National Environment Protection Act, 1969 (hereinafter referred as NEPA). Subsequently, a host of industrialized countries have since then implemented the EIA procedures. Canada, Australia, Japan and the Netherlands have adopted Environmental Impact Assessment by altering their laws in 1973. Even the European Community issued a Directive making environmental assessment mandatory for certain categories of projects in its jurisdiction. In case of developing countries, Columbia took the lead in instituting the system of EIA in 1974. In Asia and Pacific Region, Thailand and Philippines have long established the procedures for EIA. Manual for EIA published in 1988 is the Sri Lankan testimony of popularity of impact assessment system. The African region is currently in process of strengthening its process for EIA, with Rwanda, Sudan and Botswana having some experience of EIA.\textsuperscript{41}

US:

Environmental Assessments (EA's) and Environmental Impact Statements (EIS's), which are assessments of the likelihood of impacts from alternative courses of action, are required from all federal agencies and are the most visible NEPA requirements. NEPA establishes the requirement that all federal agencies' funding or permitting decisions be made with full consideration of the impact to the natural and human environment. And it requires agencies disclose these impacts to interested parties and the general public who may be affected by it. The central element in the

environmental review process is a rigorous evaluation of alternatives including the "no action" alternative.\textsuperscript{42}

In 1997, the Council on Environmental Quality completed two important reviews, focusing on considerations of cumulative effects under the NEPA and the effectiveness after 25 years of experience. Council also issued draft guidelines on implementing the Executive Order on Federal actions to address Environmental Justice in especially among the Minority Populations and Low-income Populations.\textsuperscript{43}

**UK:**

The UK Government’s preferred approach is to build on the existing system by introducing a combination of exclusive (categorical) and indicative (case by case) thresholds to provide clear, consistent, and appropriate guidance on the project to be covered.\textsuperscript{44} Identification of key issues early in the Environmental Impact Assessment process is known as "Scoping".

The Environment Agency has produced scoping guidelines, which are targeted at developers, their consultants, local planning authority/staff, Environment Agency staff, and others involved in the promotion and appraisal of proposed projects that are likely to have a significant effect on the environment.\textsuperscript{45}


Europe:

The EU, vide its Council Directive of June 1985\(^{46}\) provided for the directives and guidelines for assessment of the effects on the environment of the public and private projects. The projects listed in Annex I have to mandatorily carry out EIA, while for those mentioned in Annex II the authorities have the discretion to decide whether or not the EIA is required to be conducted after the ‘screening procedure’ to determine the environmental impact.\(^{47}\) The designated agency shall consult the interested public while deciding upon the project permission.\(^{48}\) Recently, EU has adopted the Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment integrating climate change factors and effect on biodiversity due to development projects.\(^{49}\)

Japan:

In Japan, an EIA related system was first introduced in 1972, which had limited application and thus was applicable only for public works. Later, a review of the existing system began and thereafter promotion of EIA was stipulated in the “Basic Environment Law” enacted in 1993. Followed by the enactment of “Environmental Impact Assessment Law” in June 1997. Its objective is to consider environmental protection properly by establishing a procedure for the EIA of large-scale projects and


reflecting the assessment results in the decision-making process. Through the legislation of 1997 new screening, scoping methods were also introduced. Further, review and follow-up procedures are expected to be introduced and the transparency and scope of public participation are also being improved on public demand.

**Australia:**

Under the Environment Protection and Biodiversity Conservation Act 1999, (hereinafter as EPBC Act) environment assessments are undertaken to enable environment and heritage protection and biodiversity conservation. Before taking an action that could have a significant impact on a matter protected by the EPBC Act, one must refer the proposed action to the Australian Government Minister for the Environment, Heritage and the Arts (the Minister). The EPBC Act focuses on the Australian Government interests on the protection of matters of national environmental significance, with the states and territories having responsibility for matters of state and local significance.

All jurisdictions have implemented the guidelines and the criteria for determining the need for EIA. A national agreement has been drafted to provide a firm inter-jurisdictional basis for harmonization and accreditation purpose.

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Africa:

Article 111(1) of the Treaty for the Establishment of the EAC (East African Community) recognizes that developmental activities may have negative impacts on the environment, often leading to degradation and depletion of natural resources and thus a clean and healthy environment is a prerequisite. The said Treaty provides the setting and premise for instituting regional guidelines for the management of trans-boundary ecosystems in East Africa. It is in this view that, the EAC Secretariat has developed Regional Guidelines on Environmental Impact Assessment of Shared Ecosystems in East Africa. 55

Asia:

The Asian Development Bank (hereinafter referred as ADB) is the leading multilateral development financial institution in the region of Asia and Pacific. The ADB’s policy recognizes the importance of environmental sustainability in both developmental activities and poverty eradication. The projects are categorized based on Regional Environment Assessment initiated by the RD sector. 56 The main mechanism for implementation of the EMP (Environmental Management Project) is the establishment of an Environmental Management Office (EMO). The EMO is to be established, with sufficient staffing and budget, as part of the project proponent’s Project Management Office. 57


Thus, the EIA as an important tool essential for achieving the concept of Sustainable Development has come a long way since its formal inception after the Rio Conference. It has been the one of the most crucial factors to assess the potential impacts the socio-economic development on the ecological parameters. The jurisprudence of EIA has influences both the environmental policy as well as the legislative action in all most all the countries of the world for better environmental governance.