

CHAPTER 3: ASSESSMENT OF EIA SYSTEM IN INDIA: NEED FOR PARTICIPATORY AND SUSTAINABILITY PRINCIPLES

This chapter presents the assessment of EIA system in India to identify weaknesses and outlines suggestions to incorporate participatory and sustainability principles. It also analyses the changes brought in by EIA 2006 when compared to EIA 1994 and identifies areas for improvement.

3.1 Introduction

India has invested considerable effort in implementing the universally accepted principles of Rio Declaration. In one of its 27 principles, the Rio Declaration calls for environmental impact assessment (EIA) to be undertaken for activities that are likely to have a significant adverse impact on the environment ([United Nations, 1992](#)). As per its commitment India has instituted legal and institutional framework for application of EIA as an important tool to achieve sustainable development. However off late in the developing countries, the word sustainable development has become synonymous with conflicting tradeoffs between achieving high economic growth rate and preserving the resources for a sustainable future. Every country has to ensure that sincere efforts are made to elevate the environmental clearance procedure of which the EIA is the heart to an all inclusive participatory decision making exercise.

This chapter focuses on the Environmental Clearance Procedure (ECP) in India. First the ECP as per EIA 1994 is presented and then the various players involved in the environmental clearance process are identified with the aim of identifying flaws which have developed in their interaction with each other and suggest improvements in the existing framework. Secondly, the ECP is examined in the context of large

developmental projects which have the potential to impact millions of livelihoods. In this the case of The Sethusamudram Ship Channel Project (SSCP) proposed near a protected marine sanctuary, which was accorded clearance recently amidst wide spread opposition is analysed, with the objective of suggesting improvements to make the EIA process closely aligned towards the goal of participatory sustainable development. The insights into roles played by the actors and the workings of the Environmental Clearance Procedure were the result of various interactions with the Consultants, Government Authorities, NGOs and also the first hand experience of the author's involvement in the process as a consultant for obtaining Environmental Clearance during 1998 – 2003. The information regarding the Sethusamudram Project was collected from various agency reports, news media items and other information available in the public domain. This chapter is based on a paper published in Impact Assessment and Project Appraisal in June 2006. Subsequently the EIA legislation in India was modified through EIA 2006 in September 2006. Hence the final section of this chapter discusses the modifications brought out in EIA 2006.

3.2 EIA Legislation in India

EIA in India was first started in 1977-78 with evaluation of river valley projects. This was later extended to mining, Industries, thermal power, port and harbors, atomic power, rail and road highways, bridges airport and communications, etc. Only in January 1994, the Ministry of Environment & Forests (MEF) issued a Notification on EIA of Development Projects. This Notification listed 30 projects that required environmental clearance from the Central Government. It also included - for the first time - Public hearing as a pre-requisite for clearing large projects (UNEP, 2003). The notification made it obligatory to prepare and submit an EIA, an Environment Management Plan

(EMP), and a project report to MEF which had the option to consult a multi-disciplinary committee of experts. (MSE, 2005).

3.3 Environmental Clearance Procedure (ECP) in India

The ECP in India as per EIA 1994 is shown in **Figure-3.1**. The role played out by the various actors involved in the clearance process is summarized in **Table-3.1**. This procedure had many weaknesses which gave rise to conflict among the various actors involved in the clearance process and ultimately stalled the progress towards participatory sustainable decision making. In EIA 1994 the Project proponent was required to consult the State Pollution Control Board (SPCB) for approval of the identified site. If the site came under any special notification such as forest land, coastal zone, ecologically sensitive area, etc., then clearance for the site was to be obtained from Ministry of Environment & Forests (MEF) which functions under the control of the Central Government.

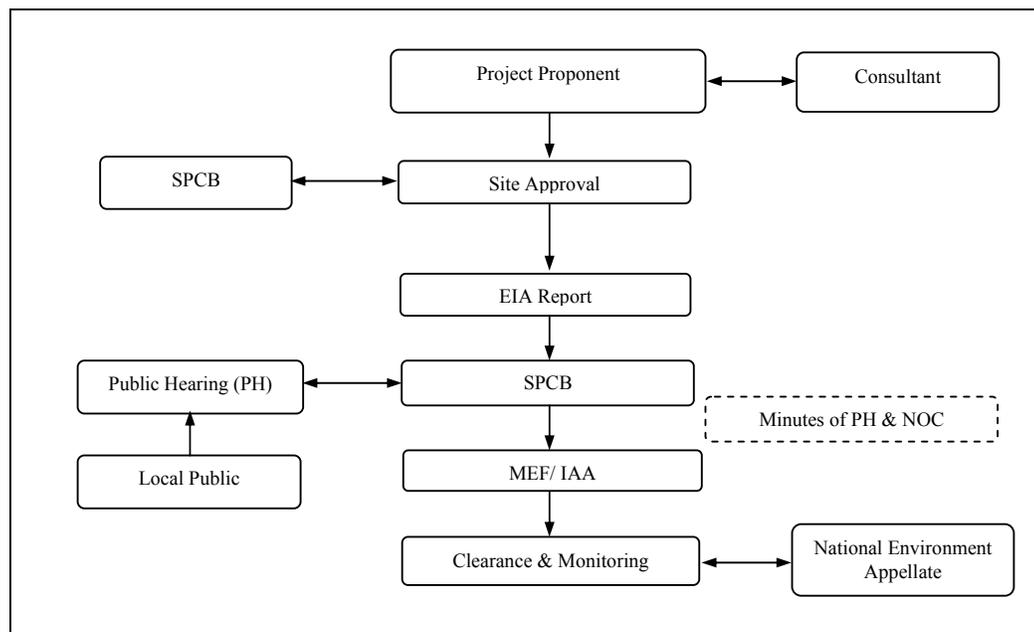


Figure 3.1 Environmental Clearance Procedures as per EIA 1994

Table 3.1 Summary of roles of different actors during EIA Process

(modified from MSE, 2005)

*Actors > Steps in EIA process	Project proponent	IAA/ MEF	Consultant	SPCB	Public/ NGO
Screening	Decides the type of project	Provides site clearance, if required	Guides the proponent in the initial screening stage	Provides site clearance	Not involved
Scoping	Provide Terms of reference (optional)	Provides guidance if proponent requires any	Establish if an EIA study is required	Not involved	Not involved
EIA Studies	Conduct EIA Studies	Not involved	Conduct EIA Studies	Not involved	Not involved
EIA Report	Submit Executive Summary of EIA and copy of EIA report to SPCB	Not involved	Assist the Proponent	Arrange for Public Hearing	Have access to executive summary
Public Hearing	Obligated to respond to issues raised during the hearing	Not involved	Assist the Proponent	Hold the Public hearing and forward NOC and Minutes to MEF	Can provide oral/ written comments regarding their concerns
Review for Final Decision	Submit EIA report to MEF	MEF reviews the project and accords clearance	Justify/ clarify queries from MEF	Not involved	Not involved
Monitoring clearance conditions	To fully adhere to the clearance conditions	To monitor progress	To assist proponent	To monitor progress	Not involved

* The National Environment appellate authority is not included in this table as they come into picture only if there is any appeal against the Environmental Clearance

Once the site clearance was obtained the proponent with the help of an environmental consultant conducted the EIA study. Once the proponent submits the EIA report to the State Pollution Control Board (SPCB), it fixed the date of the Public Hearing and informed the proponent to advertise in the local newspapers inviting the public for the hearing. The SPCB conducted the public hearing and forwarded the minutes of the hearing along with the No objection certificate to MEF. The proponent was required to submit the EIA report along with a filled in questionnaire to MEF. The MEF reviewed the EIA report in conjunction with the minutes of the public hearing with/ without the help of an expert committee and then accorded clearance with/ without conditions. The

MEF along with the SPCB periodically monitored the implementation and adherence of the proponent to the conditions laid down by MEF.

3.4 Role of various actors in the EIA Process : Expected and Suggested

This section outlines the role the EIA system expects out of each of the actors, questions the rationale behind certain responsibilities assigned to them and suggests improvements to make the process properly aligned to achieve the desired objectives of the EIA process. The various actors involved are the Project Proponent, Environmental Consultants, State Pollution Control Board (SPCB), Impact Assessment Agency (IAA)/ Ministry (MEF), Public/ NGOs and the National Environment Appellate Authority (NEAA)

3.4.1 The Role of the Project Proponent

It is evident from [Table-3.1](#) that the project proponents are required to initiate and complete each of the stages leading to the environmental clearance of the project. In today's competitive global economic scenario where the project proponent is already under considerable stress to plan and safeguard the financial success of the business venture, the current process where they are treated like probable defaulters constantly required to prove themselves otherwise, is detrimental to the economic growth of a developing nation. Instead, the process should be more investor friendly with an official from the SPCB playing a guiding role in fulfilling the various requirements leading up to the final clearance.

3.4.2 The Role of Environmental Consultant

The Environmental Consultant is expected to be conversant with existing legal and procedural requirements of obtaining environmental clearance of the project. The proponent appoints the consultant with the sole objective of obtaining environmental clearance by clearing all the hurdles setup by the authorities. This involves conducting the

EIA studies, clarifying all the issues during the public hearing and justifying their findings at the MEF review.

The consultant in most cases does not have any insight into the prevailing socio-economic and or ecological problems of the site studied. Verifying the validity of the baseline data and impact prediction results based on them is an area which needs attention by the MEF. There have been cases where EIAs have been completely fudged (ESG, 2000), where the data furnished was unrepresentative to the area and quite often there is a lot to be desired even in the fundamental aspects, presentation of facts and analysis of impacts (ESG, 2000). The data content in the Environmental Impact Assessment (EIA) reports is generally poor in quality and often incorrect (EIC, 2005). To rectify this situation the MEF have initiated a web based data dissemination system called Environmental Information Centre (EIC). This data however is not at micro level and the impact of this system on the prevailing scenario can be ascertained in the coming years.

3.4.3 The Role of the State Pollution Control Boards (SPCBs)

The SPCBs are expected to approve the site that the proponent has chosen and to conduct & forward the minutes of the public hearing to MEF. Instead of limiting themselves to the role of a policing authority they should also take up the role of guiding new and existing industries to meet the regulations. They should play a more proactive role in bridging the gulf between the proponents and the public in informing, educating and bringing both the parties to a common understanding. The added pressure of having to sustain themselves by collecting the fees for various sanction & consent orders have reduced them to the status of mere tax/ toll collectors. Capacity building is required with a plan to devolve to them all the functions currently carried out inefficiently by the MEF.

3.4.4 The Role of the Ministry of Environment & Forests (MEF) / Impact Assessment Agency (IAA)

The MEF or the IAA (which is constituted by MEF) receives the Project application along with the EIA Report from the Proponent for review and decision making. It also receives the minutes of the Public hearing along with the NOC from the concerned SPCB. The assessment that in developing countries Environment ministries are often 'bypassed' by other, more powerful, ministries (Wood, 2003) is still valid in the case of India. Considering that they are already unable to assert their importance in the political arena, the expert committees constituted by them is also unqualified and unfit for the assigned task of reviewing the technical correctness of the EIA studies (Kalpavriksh, 2005). Further, they are perceived as toothless bodies that recommend project clearance no matter how blatantly false the information provided by the project authority or no matter how high the environmental damage to be caused (Kalpavriksh, 2005). The experts' base their assessment on the baseline data given in the EIA report prepared by the consultant. The experts do not have any avenue for verification of the baseline data either directly or through the SPCB. The concerns and issues of the local public also do not reach them as they get only an official version of the public hearing. It is suggested that a state level expert committee is setup to scrutinise and accord clearance with involvement in the scoping stage and avenue for consultation with the local public. This will also put an end to the wastage of time and resources in the current system which requires the IAA committee and the proponents to assemble at New Delhi for clearances.

3.4.5 The Role of the Public/ NGOs

The public invited through press advertisements placed skilfully to make them inconspicuous, is expected to put up a mere token appearance at the public hearing. In most instances the site of the public hearing is far away from the site of the project such as the District Capital, the affected public finds it difficult to spend their time and resources to

reach the site. The provision for them to make written or oral suggestions does not guarantee that they will be considered while deciding on the project. Because of this exclusionary approach recently there have been many instances of violent conflict between the public and the proponents ([The Hindu, 2005\(a\)](#); [The Hindu, 2005\(b\)](#)). Hence it is time that a more inclusive approach is undertaken to conduct Public Consultation rather than just hearing both Pre & Post EIA studies for peaceful establishment of development activity.

3.4.6 National Environment Appellate Authority (NEAA)

The NEAA was established in 1997 after the enactment of the NEAA Act to hear appeals as an independent body against orders granting environmental clearance. The Authority has a chairperson, vice-chairperson and can have upto three members. This appellate authority has become a non-entity as far as the public is concerned, as it is functioning without a chairman from 2000, as a single member body until recently when even that member's term expired and ultimately taken over by an additional secretary of MEF whose decisions it is supposed to scrutinize ([Menon,2005](#); [Kohli,2005](#)). Even while it was functioning with its partial membership, till March 2005 it had heard only 15 cases. The applications in these cases were either not admitted on procedural grounds, or were not within the jurisdiction of the authority. The few that were admitted were dismissed in favour of the project proponent ([Kohli, 2005](#)). At the time of writing this thesis (March 2009) the Delhi High Court imposed a penalty of Rs. 20000 on MEF for not complying with the provisions of Appellate Act and directed it to appoint members as per the Act. ([Kaur, 2009](#)). The need of the hour is a State level Appellate which will be easily approachable and tuned towards examining the merit of the appeals from a scientific and humane point of view.

3.5 Assessment of the EIA System in India

After the analysis of the roles of all the actors involved in the ECP, the institutional and legal basis of the Indian EIA system is assessed. The EIA system of 1994 is assessed based on the set of evaluation criteria developed by Wood (2002) and is given in **Table – 3.2**. From the table it becomes evident that the EIA system still has a long way to go in providing the necessary legal and procedural provisions to make it an effective decision making tool. Apart from the flaws in the EIA provisions and process, the screening criterion exempts a major segment of activities from the requirement of EIA such as Small scale sector if investment is less than INR 10 million (Euro 0.2 million), if the project falls under a select list and the investment is less than INR 1000 million (Euro 200 million), mining projects in area less than 5 Hectares, etc. (for details see MEF, 1994). Whatever activity which is covered by current law provisions were also cleared without adhering to them as has been in the case of the Sethusamudram Ship Channel Project (SSCP) discussed in the second half of this paper. This section dissects the entire ECP in the case of SSCP and exposes the major flaws responsible for its wide spread public rejection and concludes with suggestions to rectify the process.

3.6 Case Study The Project : Sethusamudram Ship Channel

India does not have a continuous navigable route around the peninsula running within her own territorial waters due to presence of a shallow patch called “Adam’s Bridge” at Pamban where the navigable depth is only about 3m (refer **figure 3.2**). Hence all the ships from west to east and from Tuticorin Port to the east have to go round Sri Lanka entailing an additional distance of more than 254-424 nautical miles and 21-36 hours of additional sailing time (SCL, 2005). The Ministry of Shipping in 1997, identified the Tuticorin Port Trust (TPT) as the nodal agency for the implementation of the

Table 3.2 Assessment of EIA System in India

Criteria (Wood 2002)	Status in India	Remarks
Is the EIA system based on clear and specific legal provisions?	Yes	Although inadequate
Must the relevant environmental impacts of all significant actions be assessed?	Yes	No check at scoping or during EIA studies to ensure that this happens.
Must evidence of the consideration, by the proponent, of the environmental impacts of reasonable alternative actions be demonstrated in the EIA process?	No	Consideration of Alternatives is not mandatory
Must screening of actions for environmental significance take place?	Yes as per MEF guidelines not law	No check to ensure that this happens
Must scoping of the environmental impacts of actions take place and specific guidelines be produced?	Yes as per MEF guidelines not law	No check to ensure that this happens
Must EIA reports meet prescribed content requirements and do checks to prevent the release of inadequate EIA reports exist?	Cannot be assessed	the internal assessment details are not made public
Must EIA reports be publicly reviewed and the proponent respond to the points raised?	Only Executive summary is reviewed	EIA reports are not fully accessible to public. The points raised by the public are just noted down in a Public hearing.
Must the findings of the EIA report and the review be a central determinant of the decision on the action?	Cannot be assessed	the internal assessment details are not made public
Must monitoring of action impacts be undertaken and is it linked to the earlier stages of the EIA process?	partially	Regional office of MEF is responsible, follow-up action is not made public.
Must the mitigation of action impacts be considered at the various stages of the EIA process?	partially	Assessment not made public.
Must consultation and participation take place prior to, and following, EIA report publication?	No	No legal provision
Must the EIA system be monitored and, if necessary, be amended to incorporate feedback from experience?	No	Trend towards slackening control
Are the financial costs and time requirements of the EIA system acceptable to those involved and are they believed to be outweighed by discernible environmental benefits?	No	Proponents still view it as a wastage of time hindering economic growth
Does the EIA system apply to significant programmes, plans and policies, as well as to projects?	No	No legal requirement

Sethusamudram Ship Channel Project (SSCP). The Tuticorin Port Trust retained National Environmental Engineering Research Institute (NEERI), Nagpur, India to conduct the EIA study for the project (SCL, 2005).

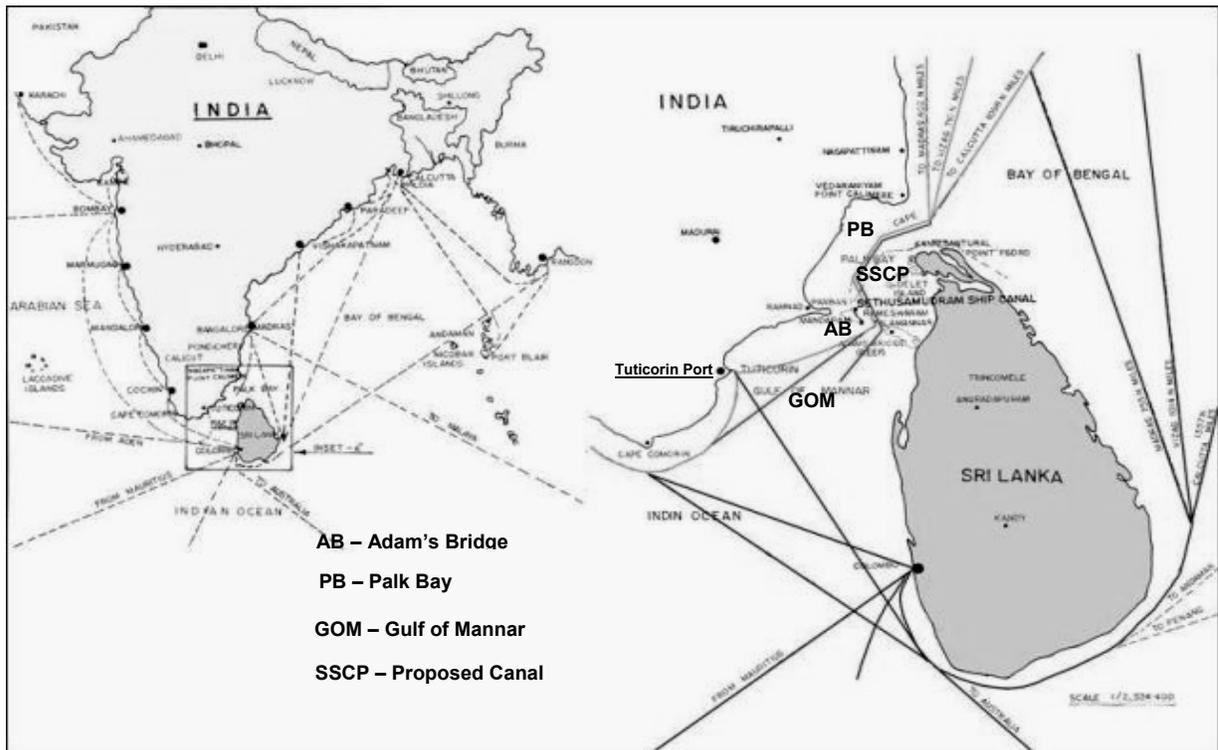


Figure 3.2 Proposed Sethusamudram Ship Channel Project

The proposed SSCP will have following two legs: one near Point Calimere called the Bay of Bengal channel and the other across the Adam's Bridge. The proposed channel will be of 12m depth and bed width of 300m which will provide a safe width for navigation of two way channel. The channel will have side slopes of 1:3. The total length of the channel would be about 260 km. About 120 km from Tuticorin Port to Adam's Bridge (in Gulf of Mannar) and about 140 km north of Rameswaram from Adam's Bridge to Bay of Bengal channel (in Palk Bay) (SCL,2005).

Projected Benefits from the Shipping Channel are: It will give sheltered water route to the ships sailing from the western ports to the eastern ports of India. Average time saved

per voyage will be 25 hours (average saving in distance 300 nautical miles and speed assumed as 12 knots) resulting in fuel savings also (SCL, 2005). The channel will be of very great importance from national defence and security point of view. **Project**

Timeline: Major milestones in the history of the project are given in [Table-3.3](#).

Table-3.3: Project Timeline of Sethusamudram Ship Channel

Date	Milestone
May 2002	National Environmental Engineering Research Institute (NEERI), Nagpur appointed as consultant to carry out EIA Studies.
June 2004	Application along with the EIA Report filed with SPCB (Tamil Nadu Pollution Control Board – TNPCB) to obtain no objection certificate (NOC).
Sept. & Nov. 2004	The Public hearing meetings held by TNPCB at six coastal districts through which the Channel alignment is passing amidst wide spread opposition.
December 2004	Writ petition filed in Madras High Court by the Coastal Action Network (CAN - an environmental NGO), seeking the Court's directions on the grounds that the public hearings were not in compliance as required by law. Court dismisses petition as premature.
January & Feb. 2005	Public hearing meetings held again by TNPCB at Nagapattinam and Thanjavur amidst tight security
March 2005	TPT files a petition in Madras High Court for initiating action against TNPCB for delay in grant of NOC.
March 2005	The project proposal placed before the MEF expert committee at New Delhi without the NOC from TNPCB.
March 2005	Prime Minister's Office finds the EIA report to be inadequate, calls for re-studies.
March 2005	Environmental clearance given by MEF without waiting for NOC from the SPCB
April 2005	CAN files another petition in High Court to stay the SSCP. High Court asks CAN to approach National Environment Appellate Authority (NEAA). Upon information that NEAA has not had a chairman from 2000, directs the Central Government to appoint Chairman within thirty days.
June 2005	Fishermen block public hearing proceedings of another project (Tuticorin Inner Port Harbour) claiming that the whole process is a farce.
July 2005	SSCP Inaugurated by the Prime Minister of India. Chief Minister of Tamil Nadu State boycotts the Inaugural function citing flawed environmental clearance. But doesn't initiate any action to appeal against the clearance probably since it does not expect much political gain.
August 2005	Fishermen protest against the dredging operations as their nets are damaged and there is no clear mechanism to claim for compensation.
Sept 2005	CAN files a petition in the Supreme Court of India to stay the project. The Supreme Court refuses to stay the project, but issues notices to Central & State Governments to file their response and also to appoint members to dysfunctional NEAA.
Jan 2006	Abandoned by the disinterested media, fisherfolk continue intermittent protests fully convinced that the SSCP is mainly executed to drive them out of their coastal villages and make way for private corporate projects.

From the above table, it is evident that the project has not had a smooth sailing in obtaining the environmental clearance and the conflict does not seem to end. The issues of conflict between the various stakeholders and how the EIA studies rather than being a tool for deliberative discourse came about to be the main source of conflict is brought out in the next section.

3.6.1 What's at Stake? For Whom?

As it would be evident from the preceding sections the actors in this project are:

- Tuticorin Port Trust (Project proponent/ Central Govt. Organization)
- NEERI (National Environmental Engineering research Institute-Consultant/ Central Govt. Organization)
- SPCB (TNPCB/ Tamil Nadu State Govt. Organization)
- MEF/ IAA (Final Authority/ Central Govt. Ministry)
- Local Fisher Folk and NGOs (who live along the coastal districts).

From the above listing it becomes clear that the entire group can be divided as the Government on one side and the Fisher folk & NGOs on the other. The benefits projected to accrue from this project by the Government was discussed in section 3.0, the main highlight of which being the reduction in navigation time for the ships and the resultant savings in fuel. Let us examine the case of the opposition as to what exactly is at stake for them.

3.6.2 Need to Protect the Gulf of Mannar Biosphere Reserve:

The Gulf of Mannar Biosphere Reserve (GOMBR) is located near the south-eastern tip of Indian peninsula (**figure 3.2**). The extent of GOMBR is 10,500 sq.km having 3,600 species of fauna and flora. The GOMBR comprises of 21 Islands and is the first Indian marine national park which was internationally recognised under the UNESCO-MAB programme. The IUCN commission on national parks and WWF identified the reserve as

an area of particular concern because of its richest biodiversity and multiple use of the area (Envis, 2004). There are about 47 villages along the coastal part of the biosphere reserve which support some 100,000 people. The Global Environmental Facility (GEF) has provided support to the establishment of the biosphere reserve, including the setting up and functioning of the Gulf of Mannar Biosphere Reserve Trust, which is responsible for the coordination of the management plan for the biosphere reserve with government agencies, private entrepreneurs, and local people's representatives (for details see Envis, 2004) with priority being given to encourage community-based management.

The present rate of degradation even without the shipping canal, if allowed to continue will result in the total disruption of the sensitive eco system and consequent drastic depletion of the marine wealth and its biodiversity. This in turn would make the lives of the several thousand fishermen much harder. Hence there is an imperative need to protect the marine wealth of the Gulf of Mannar by means of regulated harvesting of marine resources and the amelioration of sensitive marine eco-system, which is currently under tremendous threat.

Adam's Bridge: Adam's Bridge is a chain of Shoal, nearly seven in all, 30 km long which have a high cultural importance. The legends as well as Archaeological studies reveal that the first signs of human inhabitants in Sri Lanka date back to a primitive age of about 1,750,000 years ago and the bridge's age is also almost equivalent. This information is a crucial aspect for an insight into the mysterious legend called Ramayana, which was supposed to have taken place in tredha yuga (more than 1,700,000 years ago). In this epic, there is a mention about a bridge, which was built between Rameswaram (India) and Srilankan coast under the supervision of a dynamic and invincible figure called Rama who is supposed to be the incarnation of the Supreme as

per Hindu religion ([Manitham, 2005](#)).

Palk Bay: Palk Bay, an inlet of the Bay of Bengal, is bordered by the Indian peninsula on the west, the island chain of Adams Bridge on the south, and the island of Sri Lanka on the east. The principal access to the Bay of Bengal is through Palk Strait, north of Sri Lanka. Many islands are situated within the eastern quadrant of the bay. The area is rich in coral reefs and pearl grounds with the entire coastal population dependent on fishing for their livelihood.

3.6.3 Environmental Impact Assessment [EIA] by NEERI:

The EIA studies were undertaken by NEERI in 2004 and the executive summary was posted for public view at the website of TPT. The complete EIA report was disseminated for public scrutiny only after the grant of environmental clearance. The report by NEERI pointed out that though there will be some negative impact on the environment; it concluded that they were all very insignificant ([SCL, 2005](#)). It is interesting to note that for a project of such nature with a huge potential for impact on the livelihoods and the environment of that area the public were kept at large all through the preparation of the EIA report. Predictably the public reaction was tremendous and the list of questions put up for NEERI to provide a creditable response was immense. A partial list concerns raised by the various sections of the public and also surprisingly the Prime Minister of India's Office (PMO) is listed below:

Public Concerns regarding the project:

- The Bombay Natural History Society (BNHS), the largest NGO working in the field of bio-diversity and environmental conservation in India, has said the EIA report prepared by the NEERI is insufficient and a detailed study should be conducted in all seasons for at least a year ([Deccan Herald, 2004](#)).

- The India Meteorological Department has assigned the Palk Bay area as a “high risk area” for volcanic and cyclonic activity, this fact has not been addressed at all. ([Raman, 2005](#)).
- The Gulf of Mannar supported by an USD 8.6 million conservation project from the GEF, and the Point Calimere flamingo reserve will be severely impacted ([IANS, 2005](#)).
- Coastal Action Network (CAN), an organisation fighting for the protection of coastal ecology and the livelihood of coastal communities claims “The report does not give details of the ecological destruction likely to be caused by the project. Apparently, no major studies have been carried out with special focus on the fauna of the Palk Bay,” ([Subramanian, 2005](#)).
- The PMO note commented that going ahead with the construction of this mega project without collecting information on the aspects of sedimentation due to cyclones and tsunamis could lead to major economic, technical and human problems in future that could border on a disaster ([The Indian Express, 2005](#)).
- NEERI’s suggestion that a trained pilot or environmental watcher should board the ships which cross the channel to watch out for marine mammals is not practical ([Manitham, 2005](#)).
- Invasive species may be dispersed into these hitherto relatively protected seas with the bilge water of ships sailing through the Channel. ([EFL, 2005](#)).

It is evident from the above partial list of concerns raised by the public and by the PMO that the EIA report by NEERI failed to take into or allay the concerns of the public. This failure questions the credibility of the project which is supposed to aid economic growth and ultimately public development through trickle down effect. Involvement of the local public at the initial scoping stage itself to determine their likely concerns based on local values and perceptions would have avoided the rift that has developed between the public and the project proponents. Further the fact that MEF has done away with the requirement of NOC from the State Government has added more confusion in the legal requirements for environmental clearance.

3.7 Discussion: Isn't EIA about sustainable development after all?

The EIA studies carried out by the scientific community with sophisticated computational models tends to drift away from the primary objectives of the very nature of the undertaking. Simply put EIA process can be viewed as an endeavour to answer a basic question: whether the identified impact will be positive, negative or uncertain? But, unless the person who is analysing this question is directly the person who will suffer the consequence, it is difficult for him/ her to appreciate the significance of the conclusion that is to be drawn. Hence, the duty of the scientific community is to resist any external pressure and present all the likely scenarios (best to worst) that are likely to arise and make it clear where the current level of knowledge is insufficient to arrive at a conclusion regarding the final scenario that might arise. As pointed out rightly by Beattie (1995), "If we as environmental professionals do not take up this challenge, then EIAs will continue to be used as proxies in political disputes that can never be resolved by reference to environmental impacts alone".

To arrive at an EIA process which will be true to its intended purpose of sustainable development, we will have to understand the critical factors at play in a developing society like India. Among the various complexities involved, two key questions have to be tackled and they are: how to judge the high economic growth argument? And how to include the public in a participatory decision making process?

3.7.1 Sustainability and the Precautionary principle

The term Sustainability has become a dreaded concept in the developing world. The main argument put forth by the advocates of high economic growth is that the task of elevating the majority of the public who are currently languishing in poverty should not be compromised under the excuse of sustainability. They accept that future concerns are

important too, but argue that alleviation of concrete misery prevalent now always takes precedence. Another important factor for the politician decision makers is that the future citizens are simply not a vote bank for today's elections. In the context of the Sethusamudram project the issue to be resolved is how much of a risk to the life supporting coral reef ecosystem we can tolerate against the promise of economic growth through increased shipping activity. First, we have to reach a consensus as to whether at all we have to concentrate on protection of the GOMBR.

3.7.2 Need to Protect the Gulf of Mannar Biosphere Reserve (GOMBR):

According to one estimate, reef habitats provide humans with living resources (such as fish) and services (such as tourism returns and coastal protection) worth about USD 375 billion each year (WRI, 1998, pp.11) providing biodiversity, sea food, new medicines, recreation, coastal protection, climate regulation. Approximately 20% of the world's coral reefs were lost and an additional 20% degraded in the last several decades of the twentieth century, and approximately 35% of mangrove area was lost during this time (Millennium, 2005, pp.18). The people living along the coast obtain a considerable proportion of their food and earnings from the productivity of coral reefs. Coral reef ecosystems are very sensitive to external impacts both natural and manmade, which violate their homeostasis. Of the total reef area of 6000 sq.km in India, 68% of the area is classified as being under high risk category of human disturbance (WRI, 1998, pp.24).

Now, let us examine the economic growth argument. That the economic growth is aimed at creating wealth which is expected to trickle down to the poor is a premise which is yet to materialize. Ahana and Rajagopalan (2000) point out that "the threats to the Indian coastline are a result primarily of development projects and industries in the guise of improving the status of "backward areas", where employment opportunities have been limited to traditional activities such as agriculture, aquaculture or value addition to

locally available resources”. In the same paper they further indicate that over the years, projects in coastal areas have created a myriad of problems ranging from increased urbanization and greater pressure on available resources (especially fresh water supplies) to pollution by sewage and industrial wastes and the benefits of development are mostly cornered by those who are able to manipulate the social and political system or by the urban middle classes.

3.7.3 Development for whom?

The poorer sections of the public have so far experienced further alienation and have seen the disparity between them and the richer sections grow considerably. As the Millennium report (2005, pp.17) points out, “the harmful effects of the degradation of ecosystem services are being borne disproportionately by the poor, are contributing to growing inequities and disparities across groups of people, and are sometimes the principal factor causing poverty and social conflict”. Hence, the argument of high economic growth by itself can no longer be considered a cure all and when it has the potential to affect existing life supporting systems it becomes untenable.

3.7.4 Relevance of Precautionary Principle

In the context of the project under discussion the application of precautionary principle gains significance. The precautionary principle states (IUCN 2004),” “When an activity raises threats of harm to human health or the environment, pre-cautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. In this context the proponent of an activity, rather than the public, should bear the burden of proof”. The precaution is well justified if we consider that “the degradation of ecosystem services represents loss of a capital asset” (Millennium, 2005, pp.22).

Applying this principle in the context of the project under discussion; the list of concerns raised by the public should have been studied in detail to arrive at any conclusion as whether to go ahead with the project. In the event of the proponent unable to produce proof to the contrary, as is the case now in the Sethusamudram project, the decision of the MEF to give environmental clearance becomes questionable. The minimum of effort that could have been undertaken is to apply the tools of environmental economics to understand the tradeoffs involved between preserving a life supporting system against the risks & benefits projected from the shipping channel. This way the expertise of Indian research institutes engaged in researching various topics on environmental valuation and economics would have been better utilized in coming to grips with a complex decision regarding SSCP.

3.7.5 The Participation Problem

The second question that is to be tackled in a developing society like India is how to ensure that we consider the values and preferences of the affected public and involve them in the decision making process. The importance of the traditional knowledge base of the local public in improving the models and other tools used for predicting impacts is long understood ([Beattie, 1995](#)). As the millennium report ([2005, pp.39](#)) points out that effective management of ecosystems typically requires “place-based” knowledge; that is, information about the specific characteristics and history of an ecosystem which is too rarely incorporated into decision-making processes and indeed is often inappropriately dismissed. Of course the main challenge in improving the EIA process in developing countries is the raising of Public awareness and the increasing of opportunities for consultation with affected parties and other interested groups, as well as non-governmental organizations, throughout the EIA process ([Glasson et al., 1999](#); [Kennedy, 1999](#); [Abaza, 2000](#), [Appiah-Opoku, 2001](#), [NIOT, 2000](#)). The current practice in India of

conducting public hearings after the EIA studies are completed can be considered a meaningless exercise as the public are just given an opportunity to voice their concerns with no assurance or mechanism to ensure that they are/ will be considered. The real way forward will be to institutionalize the participatory structure at the local level itself as outlined below.

3.7.6 Panchayati Raj – adding more purpose:

In India during the decade of 1990s, it was realized that without constitutional power, the self-government of villages by locally elected representatives or Panchayati Raj (panch – five member committee; raj- governance) was not fruitful; therefore the Central Government passed the 73rd constitutional Amendment Acts of 1992, which became effective from 20th April 1993 (NIRD, 2005). The basic concept of Panchayati Raj is that the villagers should think, decide and act for their own socio-economic interests. Thus, it is related to village self-governance, where the people in the form of an organisation will think, decide and act for their collective interests. According to the Constitution, Panchayats are given powers and authority to function as institutions of self-government. The following powers and responsibilities are to be delegated to Panchayats at the appropriate level :-

- Preparation of plan for economic development and social justice.
- Implementation of schemes for economic development and social justice in relation to 29 subjects given in Eleventh Schedule of the Constitution.
- To levy, collect and appropriate taxes, duties, tolls and fees.

Considering that the village level self governance institutions are already existing, the next logical step would be to dovetail environmental decision making into their scope of governance. Presently, from the concerned districts three members are nominated to the public hearing panel without any clear cut definition of role or weightage of their opinion

on the final minutes of the public hearing. Now, the panchayats can be given the key role right from the pre-EIA consultation to regular monitoring of the project for adherence to conservation and mitigation measures promised by the proponent. Notwithstanding the claims of illiteracy and corruption it will give the affected public a conduit of their own control to express their voice and act as a pressure group in case of any violation on the part of the proponent.. This would go a long way in avoiding the atmosphere of distrust and insecurity which was prevalent during the public hearings of Sethusamudram project (The Hindu, 2004a; The Hindu, 2004b). This village committee should be consulted before the beginning of EIA studies so their valuable input can help the scientists to prepare better EIA reports. A modified Environmental Clearance procedure is suggested in Figure-3.3 which will be the right step forward towards development to ensure the sustainability of ecosystems in this nation of over a billion.

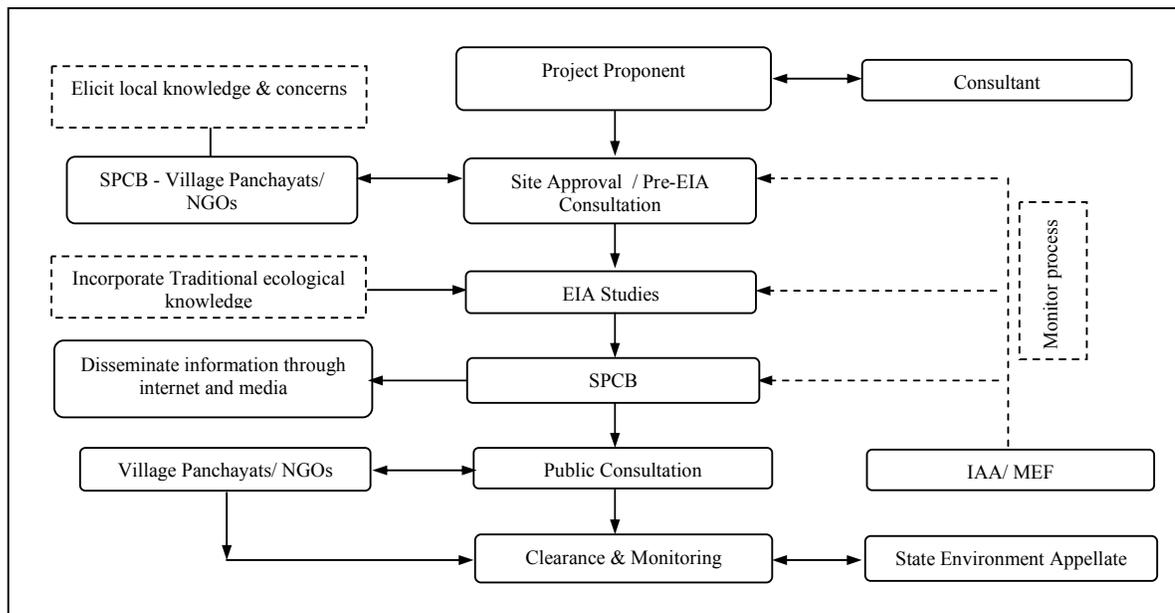


Figure 3.3 Proposed Environmental Clearance Procedure for Indian EIA system

3.8 EIA 2006: the changes in comparison to EIA 1994

This section deals with the changes brought in by EIA Notification 2006. The re-engineered EIA process 2006 (MEF, 2006) was brought in to rectify the deficiencies

found under EIA, 1994 and a comparison of both the notifications is given in [Table-3.4](#). From [table –3.4](#), it is clear that EIA notification 2006 has still a long way to develop before it can be at par with best practice EIA process. Though the MEF had invited comments on draft EIA 2006, it failed to disclose the comments received/ considered. Instead it only collaborated with the Industry to come out with its final version ([Ghosh, 2006](#); [Menon and Kohli, 2007](#)). The key changes in EIA 2006 and their limitations are discussed below:

Table 3.4: Comparison of EIA 2006 with EIA 1994

EIA, 1994	EIA, 2006
<i>Clearance Authority</i>	
Central Govt., MEF	Central Govt., MEF for Category A projects. State Level SEIAA for Category B.
<i>Screening</i>	
Based on capital investment and capacity	Revised Schedule based on potential impacts, Categorization into A and B1 & B2. Proponent to submit Form-1 for category B projects to SEIAA for categorization into B1 or B2
<i>Scoping</i>	
Not mandatory	Proponent to submit information through Form-1/Form-1-A for category A and B1 projects.
<i>Consultation for scoping</i>	
No provision	No provision. Site visit if necessary.
<i>Terms of Reference for EIA</i>	
No provision	Clearance authority to determine detailed TOR based on information in form-1 & TOR proposed by the proponent
<i>Site clearance</i>	
Separate site clearance process before EIA	Scoping stage incorporates site clearance process
<i>Statutory consultees for scoping</i>	
No provision	No provision
<i>EIA studies</i>	
Completed before public hearing	To submit draft EIA report and prepare final EIA report based on public consultation
<i>Dissemination of draft EIA report</i>	
No provision	Executive summary available on SPCB website, draft EIA report available for public scrutiny at select offices
<i>Public consultation</i>	
Public hearing (PH) after the EIA study, views of public are noted and not made public.	Proceedings to be videographed, hearing proceedings to be made public. MEF can decide to waive PH if situation is not conducive.

<i>Participation in public consultation</i>	
Local persons, environmental groups, etc.	Only local persons. Others can only submit written comments.
<i>Place of public consultation</i>	
District headquarters chosen by district administration	District headquarters chosen by district administration
<i>No Objection Certificate from SPCB</i>	
Mandatory requirement	NOC not required
<i>Availability of final EIS</i>	
Not available to the public	Not available to the public
<i>Appraisal of final EIS</i>	
By EAC, MEF	By EAC, MEF for category A and SEAC, SPCB for category B1.
<i>Monitoring</i>	
By regional office of MEF, half-yearly compliance reports not made public	By regional office of MEF, half-yearly compliance reports to be made public
<i>Appeal</i>	
Appeal to Environment Appellate Authority	Not specified
<i>Modernization or expansion of existing projects</i>	
To follow same procedure as new projects	EAC/ SEAC to decide whether EIA/ public consultation is required
<i>Time limit for each stage of EIA</i>	
No time limit	Time limits with consequences at each stage

MEF – Ministry of Environment & Forests, Govt. of India; SEIAA – State level environment Impact assessment authority; SPCB – State Pollution control Board; EAC – Expert Appraisal Committee (Central); SEAC – State Expert Appraisal Committee

Stage I: Screening – the main development in the screening process is the categorization into A and B projects based on project capacity. Category B projects will be under the authority of SPCBs which will further divide them into B1 (EIA required) and B2 (EIA not required) based on criteria yet to be specified by MEF till date (Jan 2009). Though the devolution of power to the SPCBs is a welcome step which will reduce the time required for clearance, adequate checks do not exist in the other stages of the EIA process to prevent misuse of this power by the State Governments which compete with each other for developmental projects. Again the reliance on the information provided by the proponents and discretionary site visits will be basis for categorization into B1 and B2, which perpetuates the same failings of the old system.

Stage II: Scoping- the stage where the TOR is decided can be considered crucial in the whole process. In the EIA 2006 the authorities have to decide the TORs based on the information given in form-1 by the proponents with no provision for mandatory consultation with the affected public or other agencies. The proponent is required to submit a TOR, based on which and a discretionary site visit the authorities will decide the final TOR and give the permission to carry out EIA studies.

Stage III: Public Consultation- conducting public hearing before the preparation of final EIA report is an improvement over EIA 1994. However by eliciting the concerns of the local people after the EIA studies have been conducted, not allowing persons who are not local to participate in the hearing, taking written comments from only those who have a plausible stake in the project and keeping out NGOs and environmental groups, this stage has been made more regressive in its purpose than in EIA 1994. Further only the draft summary of the EIA report will be widely disseminated and the time period for which the draft EIA report will be available for public scrutiny at a specified location has not been specified.

A positive requirement in EIA 2006 is the provision for the entire proceedings to be video graphed. The authorities also have the powers to cancel the public hearing if they feel that the conditions are not conducive and quorum is not necessary to start the proceedings. By not holding public consultation before the TOR finalization the process has become flawed and through all the other restrictive powers this stage has become almost meaningless. Based on this stage the proponent has to prepare the final EIS and submit for final Appraisal.

Stage 4: Appraisal of EIS- the projects belonging to category B2 are appraised based on the information submitted in form-1 and discretionary site visits, the public do not have any role to play in these projects.

For projects which require an EIA, the final EIS needs to be submitted to the concerned authority (MEF for category A and SEAA for category B1). The final EIS is not available for public scrutiny. The clearance is accorded with/ without conditions and it is displayed in the website of the concerned authority. Apart from the above issues, the other negative points in EIA 2006 are:

- The exemption from EIA for construction projects and exemption from the notification altogether for construction projects less than 20000 sq. meters.
- The monitoring component has not been improved. It is the same ineffective system where the proponent has to send half-yearly compliance reports to the authority.
- The validity of the clearance has been increased from 5 years to 10 years for hydropower projects and 30 years for mining projects. How the prevailing ecological and socio-economic conditions will remain same for such a long time is an assumption which defies logic.
- The categorization of projects based on capacity into A and B might lead to salami slicing and there is no provision to check this practice.
- Projects to be located in approved industrial estates have been exempt from this notification. As industrial estates are already the worst offenders of environmental legislation this will further add to the problem.
- Six types of activities have been exempted from public consultation, they are
 - (a) modernization of irrigation projects.
 - (b) all projects or activities located within industrial estates or parks approved by the concerned authorities, and which are not disallowed in such approvals.
 - (c) expansion of Roads and Highways which do not involve any further acquisition of land.
 - (d) all Building /Construction projects/Area Development projects and Townships
 - (e) all Category 'B2' projects and activities.
 - (f) all projects or activities concerning national defence and security or involving other strategic considerations as determined by the Central Government.

All the above projects might result in impacts on the natural and social component. Particularly when there are no clear criteria to categorize projects into B1 or B2, this provision will be misused by the state government to avoid public consultation. On the whole though EIA 2006 incorporated components such as screening by central and state governments, scoping, TOR, consultation with draft EIA report and videography of public hearings; it has regressed the power of the EIA system with the numerable deficiencies as listed earlier and still has a long way to match up with best practice EIA.

3.8.1 Modified ECP 2006 suggested for effective process

A modified EIA process incorporating best practice standards is shown in **figure-3.4**. The dotted lines are the connections which are proposed to make the process truly participative and integrative. The requirement of information regarding the pillars of sustainability i.e., natural, social and economic components, from the area under scrutiny is stressed. The methodology to generate such information in a cost effective manner is detailed in **chapter 7.0**.

3.9 Conclusions: The Way Ahead

Based on the discussions on the various deficiencies pointed out in the environmental clearance procedure in India in general and the problems identified in the EIA process in the context of Sethusamudram Project in particular, the following conclusions are drawn to realign the EIA system towards participatory decision making for sustainable development.

Environmental Clearance Procedure in EIA 1994

- The project proponents should be guided adequately by the State Pollution Control Boards to effectively interact with all the stakeholders

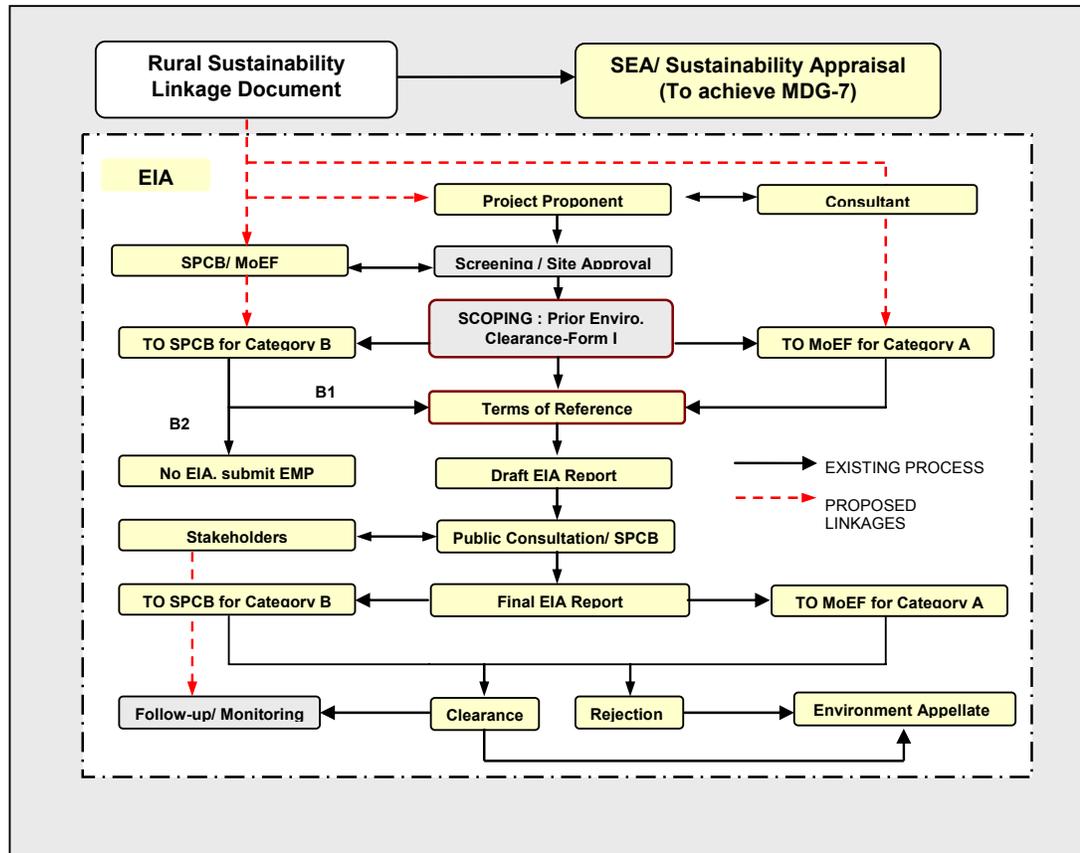


Figure 3.4 Proposed modifications in ECP of EIA 2006

- There should be a system to empanel consultants after careful scrutiny of their credentials to carry out EIA studies
- The technical capability of the State Pollution Control Boards to address and mitigate environmental concerns should be improved further.
- The MEF expert committees shall be composed of qualified members subject to public scrutiny with adequate representation from the affected area.
- Complete EIA reports shall be placed in the public domain for scrutiny.
- The modified environmental clearance procedure involving the village panchayats shall be adopted to make the process more democratic and sustainable.

- Every decision on the issue of ecosystem disturbance shall be guided in spirit by the precautionary principle.
- A mechanism shall be instituted for periodical review and improvement of the environmental clearance procedure.

Environmental Clearance Procedure in EIA 2006

- The notification has some improvements in terms of a scoping stage, TOR by authorities, public consultation with draft EIA report and devolution of power to the SPCBs.
- The notification still has some flaws such as: scoping stage without public consultation, exemption of certain projects from EIA and public consultation and a unimproved monitoring system
- The notification has regressed in certain areas making the EIA process weaker mainly by excluding NGOs and environmental groups from the public consultation, extending the validity period for clearances, exemption of projects inside industrial estates and the provision to cancel public consultation.
- Key improvements required are: key role for the local public in scoping TOR and monitoring, need for integrated information regarding the sustainability linkages from the area under scrutiny, greater transparency in the clearance process and dissemination of all documents for public scrutiny.