

## Environmental Impact Assessment, a tool for Sustainable City Management

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### 1 INTRODUCTION

Cities in all parts of the world face mounting challenges such as population shifts, water shortages, air pollution, inadequate or aging infrastructure, land degradation, sprawl, spread of informal settlement and traffic congestion. Metropolitan cities grow beyond imaginable proportions. Urban issues therefore, warrant increasing attentions. The ever increasing urbanization process accelerates and escalating socio-economic demands which alter the biophysical environment of the city.

Environment Management of areas is, therefore, the control and reduction of the negative impacts of human activities on the physical, biological and cultural environments. It is an endeavor to avoid the over use, abuse and misuse of resources in the environment. The development process profoundly alters the environmental fabrics, with concurrent beneficial and adverse impacts on each sphere of the environment. The strategy has obviously to be aimed at protecting the resources or environment for sustaining development.

In order to manage environment in a rational manner, it is necessary to assess the potential of the environment for supplying the life process and for providing resources for development. The broad regulatory and incentive structure needed to support the achievement of development goals for city, within a framework which promotes local global sustainability, can be conceived under three broad areas:

- I. Ecological sustainability: Human are part of nature, nature has limits, and communities are responsible for protecting and building natural assets;
- II. Economic viability: Economic activity should serve the common good, be self-renewing, and build local assets and self reliance;
- III. Equity: The opportunity for full participation in all activities benefits and decision-making of a society.

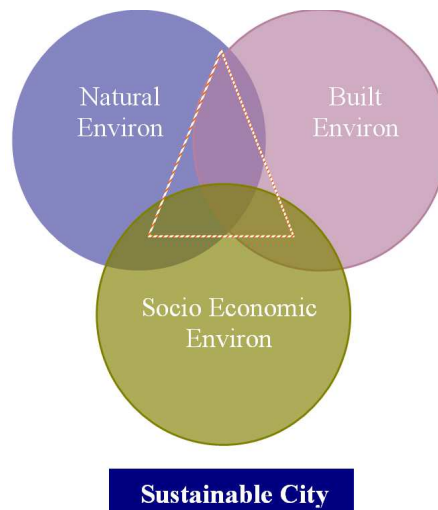
Environmental Impact Assessment (EIA) tools have been applied internationally to ensure the proposed actions are economically viable, socially equitable and environmentally sustainable. EIA is a process having the ultimate objective of providing decision-makers with an indication of the likely consequences of their actions.

### 2 NEED OF STUDY

A high standard of city environmental quality is characterized by clean environment with, safe attractive streets, and parks and open spaces where people feel at ease. The intersection and overlap of the natural environment, the built and socio-economic environment constitutes the city environment functioning of urban areas should be to maximise the quality of life of the people that live and work in such areas, without compromising the quality of life of those who reside outside their boundaries.

According to Riseborough, 2000 important components of quality of life in urban neighbourhoods are summarised as follow

Environment	Important Component of Quality of Life
Physical	air quality, water quality, derelict land, open space, noise, litter
Built	building type, condition, appearance
Social	education, community participation, services and leisure, crime, health, mental health
Economic	employment, income



High densities, rapid population growth, a large and growing built environment, and permanent inflow of energy and natural resources make the urban environment highly interrelated. Changes in one sector will trigger a chain reaction through the rest. While similar features may be found in many natural environments, urban environments remain unique, when we take into account the number and density of components and the speed at which change can propagate through them. In a simplified picture of a development project's impact, a new urban investment would have immediate environmental impacts—for example, on land use and pollution. These are the direct environmental impacts that usually make up the main concern of the EIA. But in addition to these direct impacts, any urban project would probably bring about indirect and cumulative impacts. For instance, new infrastructure will foster economic and occupational changes in its vicinity that will, in turn, produce serious impacts on the environment. This second wave of environmental effects can be thought of as indirect impacts stemming from the original project. Also the sum of several environmental impacts, over time, can result in synergetic effects; these are the cumulative impacts.

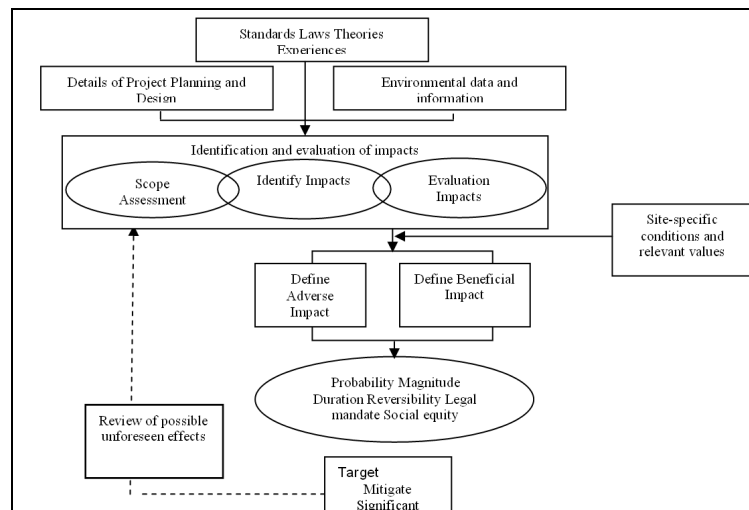
Of course, the actual chain of interactions—including what to look for and how far to search for it—should be city- and project-driven. This to and fro relation for City growth and Environmental Impact is very much vivid in City Management Practice. So, there is a need to conceptualise how to integrate above aspects to Sustainable City Management by using the assessing tool EIA. How do EIA process, plays a crucial role in all future decisions upon the development of Urban Areas between flow principle, that is based on an equilibrium of material and energy and also financial input and output for improving the quality of life in a city, including ecological, cultural, political institutional, social and economic components without leaving a burden on the future generations.

### 3 APPROACH

The Environmental Impact Assessment (EIA) is an effort to anticipate measures and weigh the socio-economic and biophysical changes that may result from a proposed project. Best practice EIA identifies environmental risks, lessens conflicts by promoting community participation, minimizes adverse environmental effects, informs decision makers, and help lay the base for environmental sound projects. The Environmental Impact assessment has the following objectives:

- Predict environmental Impact of Projects
- Find ways and means to reduce adverse impacts
- Shape project to suit local environment
- Present the predictions and options to the decision-makers.

The approach of this management tool can be explained by the following Input-output flow chart.



### 3.1 Process

Environmental Impact Assessment (EIA) is the process in which environmental factors are integrated into project planning and decision making in details so as to achieve ecologically sustainable development. 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 environmental impact assessment was undertaken simultaneously with detailed design of the bypass. The important findings of the assessment gave important feedback to the design team, especially in terms of the sensitive receptors, utility/facilities to be impacted. It helped modify the design at locations where impacts had to be avoided and incorporate mitigations measures wherever the impacts were unavoidable due to other constraints. The stepwise methodology adopted for the EIA is as follows:

#### 3.1.1 Environmental Screening

In this screening stage, the Consultants of DPR consults the proponent and other agencies and public participants to determine the requirements of further studies. At this stage, the EIA agency determines whether the project may proceed as planned or if it needs to be subjected to an Initial or complete EIA. In this case detailed or complete EIA is adopted to understand the interlinkages and dynamic between various activities and direct, indirect and cumulative impacts on physical and social environments to evaluate the impacts and to provide mitigation measures.

#### 3.1.2 Environmental Scoping

The terms of reference of the DPR Consultants, the statutory requirements for the area of influence required by the Ministry of Environment and Forests, and consultants with experts determined the scope of the assessment for this study. This scoping work is merged with the earlier work screening stage deals with a major detailed plan of study for the project to identify major concern and key impacts, and to decide assessment methods and models to be used. Undertaking the screening of area identified valued ecosystem components (VECs) in this project.. The valued ecosystem components identified were major land ecosystem along alignments, sagwan plantations, river ecosystems (betwariver), community water sources, etc.

#### 3.1.3 Environmental Survey

The study team of DPR consultants visited the selected alignment and information on each kilometer was collected upto 5-10 km of both sides of the ROW or radius. Detailed strip mapping carried out as part of the detailed design period data collection also provided valuable information regarding area adjacent to the alignment or project site.

### 3.1.4 Collection and analysis of Data

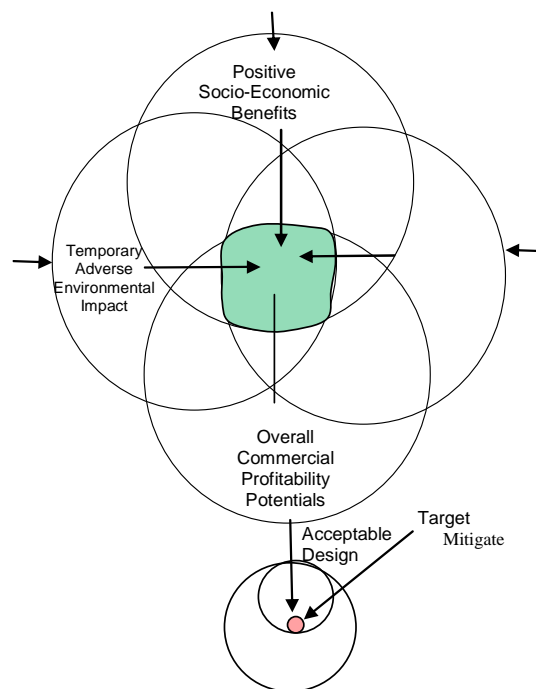
The data from surveys was fed to customized spreadsheets for ease of analysis. Supplementary information was collected from Survey of India toposheet, census handbooks and other government publications as well as reports prepared for other projects in Madhya Pradesh. Standard statistical techniques were used for analysis of the socio-economic data, the tree count, etc. qualitative analysis was done for more descriptive data.

### 3.1.5 Documentation and Baseline

The documentation of the baseline conditions was completed for 5-10 km wide strip on both sides of the alignment or project site as project Influence Area (PIA) as per the Ministry of Environment and Forest India, (MoEF) Guidelines. Primary surveys were carried out for determination of ambient air quality, water quality, soil quality at various locations along the proposed alignment and noise levels were also measured at different locations to have an idea of prevailing noise levels in the area.

### 3.1.6 Assessment of Alternatives

Alternatives were continuously assessed throughout the process. DPR consultants did a detailed on selection of alternatives during feasibility report preparation. It includes a mixture of legally- mandated criteria, technical/scientific criteria and social acceptability criteria. Alternate sites and design process is already critically examined to maximize the positive environmental impacts, socio-economic benefits, and profitability, and minimize the temporary adverse impacts. A more formal assessment was also undertaken as apart of the environmental assessment process, including the assessment of the “No Action” alternative as is customarily included as apart of the formal assessment methodologies to ensure that it has been given proper consideration.



### 3.1.7 Assessment of Alternatives

Potentials and significant impacts were identified on the basis of analytical review of baseline data; review of land uses and environmental factors; analytical review of the socio-economic conditions within the PIA

### 3.1.8 Integration of Environmental impacts In the Design Process: “Mainstreaming the Environmental Component

The design and decision-making process integrated environmental, resettlement and rehabilitation issues and prompted the early identification of appropriate actions. Such actions included, for example, shifts in alignments based on awareness of the locations of settlements cultural resources, and biological resources along the bypass alignment.

### 3.1.9 Identified Mitigation and Enhancement Measures

Positive actions, to not only avoid adverse impacts, but to capitalize on opportunities to correct environmental degradation or improve environmental conditions were determined

### 3.1.10 Community Consultations

Excessive consultations were held at various stages of the project. The issues raised by the communities and the various stakeholders held. The issue raised by the communities and the various stakeholders were incorporated in the design and construction/operation plan of the project planning.

### 3.1.11 Preparation of the Environmental Management Plan

Environmental management plans have been prepared for each construction package separately as part of the Environmental Assessment. Responsibilities have been assigned for the various actions identified to limit the adverse impacts of the project and budget allocations have been made for the funds required for mitigation as well as enhancement measures. The environmental management plans have been prepared for three phases namely Pre Construction, construction and operation (Post Construction) phase.

### 3.1.12 Finalising the Environmental Assessment

Environmental assessment has been completed based on input received at DPR preparation and experience of reviewers on similar other projects. In addition, the field visits of reviewers provided valuable inputs into the completion of the EA. The baseline environmental setting, the potential impacts and the plausible mitigation measures have been supplemented based on the field visits.

### 3.1.13 Completing the Baseline

The baseline has been completed by measuring air, water and soil quality and noise level in the area of influence of project. The information was evaluated using the same VECs, which were identified during the environmental screening. The selections of location for measuring environmental parameters are as follows:

- Air Quality Monitoring Point
- Water Quality Monitoring Point
- Soil Quality Monitoring Point
- Noise Level Monitoring

### 3.1.14 Impact Assessment and Modelling

Impact assessment was carried out for the baseline environmental quality, which has been established along the alignment. In addition, the updated baseline and other information collected about sensitive receptors during the subsequent site visits by the independent reviewers provided the base of making more concrete assessment of impacts.

### 3.1.15 Mitigation and Enhancement Measures

In view of the presence of sensitive receptors along the proposed alignment, appropriate mitigation measures were chalked out where impacts could not be avoided. Enhancement measures including Noise buffer zonation, Landscape plan, Safety measures in homestead crossing, enhancement for cultural properties identified along the alignment has been prepared.

### 3.1.16 Stand Alone Environmental Management Plan (EMP)

EMP and mitigation and enhancement measures have been given along with a clear demarcation of responsibilities of the various institutions responsible. Monitoring systems have been established to ensure ease of follow-up activities.

### 3.1.17 Environmental Budget

The budgetary provisions for implanting various environmental measures have been rationalized for all construction packages. The unit costs have been examined and appropriately modified to incorporate the changes.

The Stages of EIA in India is shown in following Flow Diagramme:

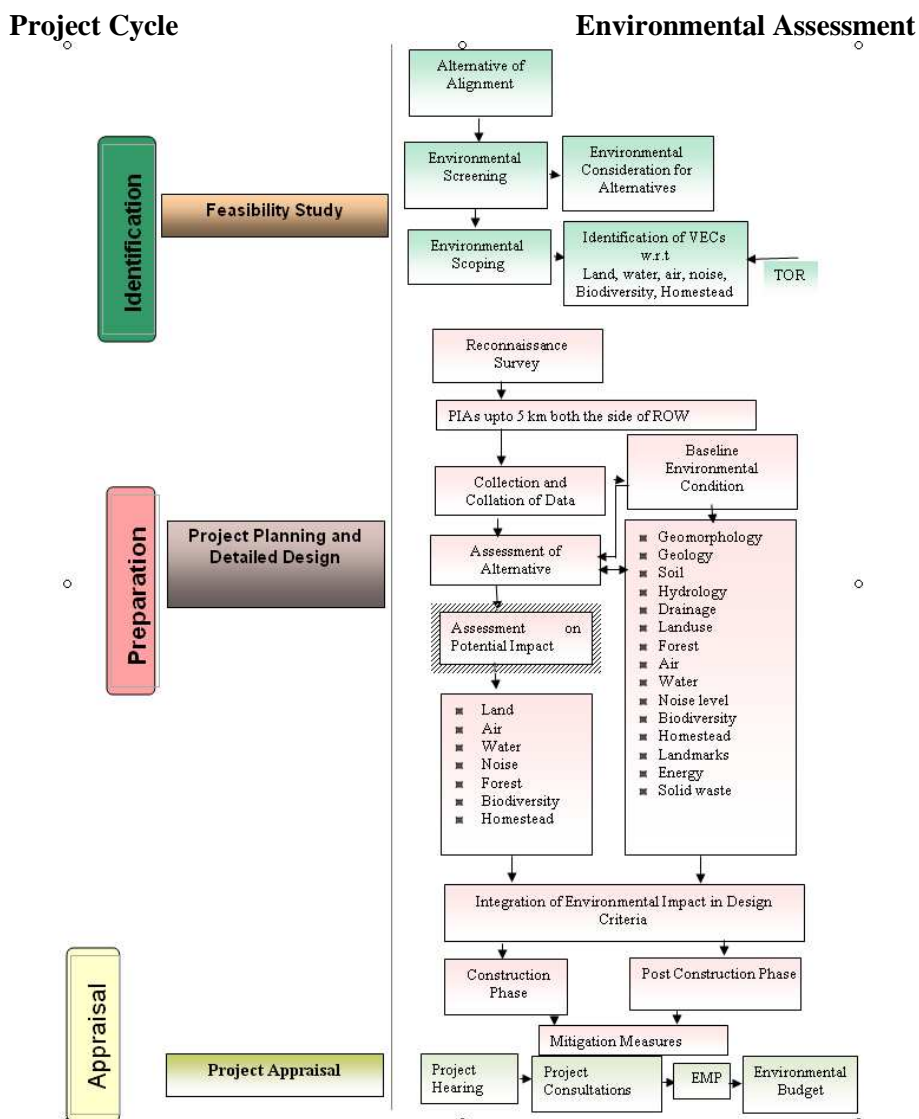


Fig. 3: Stages of EIA

## 4 ACCOUNTABILITY IN INDIAN CONTEXT

Over the years, together with a spreading of environmental consciousness, there has been a change in the traditionally-held perception that there is a trade-off between environmental quality and economic growth as people have come to believe that the two are necessarily complementary. The current focus on environment is not new—environmental considerations have been an integral part of the Indian culture. The need for conservation and sustainable use of natural resources has been expressed in Indian scriptures, more than three thousand years old and is reflected in the constitutional, legislative and policy framework as also in the international commitments of the country.

Even before India's independence in 1947, several environmental legislations existed but the real impetus for bringing about a well-developed framework came only after the UN Conference on the Human Environment (Stockholm, 1972). Under the influence of this declaration, the National Council for Environmental Policy and Planning within the Department of Science and Technology was set up in 1972. This Council later evolved into a full-fledged Ministry of Environment and Forests (MoEF) in 1985 which today is the apex administrative body in the country for regulating and ensuring environmental protection. After the Stockholm Conference, in 1976, constitutional sanction was given to environmental concerns through the 42nd Amendment, which incorporated them into the Directive Principles of State Policy and Fundamental Rights and Duties.

Since the 1970s an extensive network of environmental legislation has grown in the country. The MoEF and the pollution control boards (CPCB i.e. Central Pollution Control Board and SPCBs i.e. State Pollution Control Boards) together form the regulatory and administrative core of the sector.

A policy framework has also been developed to complement the legislative provisions. The Policy Statement for Abatement of Pollution and the National Conservation Strategy and Policy Statement on Environment and Development were brought out by the MoEF in 1992, to develop and promote initiatives for the protection and improvement of the environment. The EAP (Environmental Action Programme) was formulated in 1993 with the objective of improving environmental services and integrating environmental considerations in to development programmes. The Legal framework for the project is summarised in following sections.

#### **4.1 The Environmental (Protect) Act, 1986 and the EIA Notification, 2006**

The Environmental (Protection) Act, 1986 is the umbrella legislation providing for the protection of environment in the country. This act provides the Environment (Protection) Rules, which were formulated in 1986. The Environmental Impact Assessment Notification, 1994 and the various amendments thereto have been notified under this act. As per the Amendment, formal Environmental Clearance from the ministry is required for highway widening and strengthening projects if they involve land acquisition of more than 20 m, on either side put together and or cut across or pass through environmentally sensitive areas as reserved forests, wildlife sanctuaries, biosphere reserves etc. Also, the bypasses are to be treated as separate projects and require an EIA only if each one costs more than INR 1000 Under "The Environmental (Protection) Act, 1986, the Development project requires clearance from the State Pollution Control Board and Ministry of Environment and Forest, New Delhi. The procedure for obtaining environmental clearance has been depicted in Figure 3.1.

#### **4.2 EAG 2003 (ADB)**

Asian Development Bank (ADB) emphasizes the need to increase efforts to address environmental degradation. Environmental concerns are to be reflected in all ADB initiatives, whether at the project, sector, or national level.

The ADB's Environment Policy mandates the consideration of environment in all aspects of ADB's operations. The Environment Policy and Operations Manual (OM) 20: Environmental Considerations in ADB Operations outline ADB's environmental assessment procedures and requirements. These environmental assessment guidelines were prepared to facilitate the implementation of the Environment Policy and the OM 20.

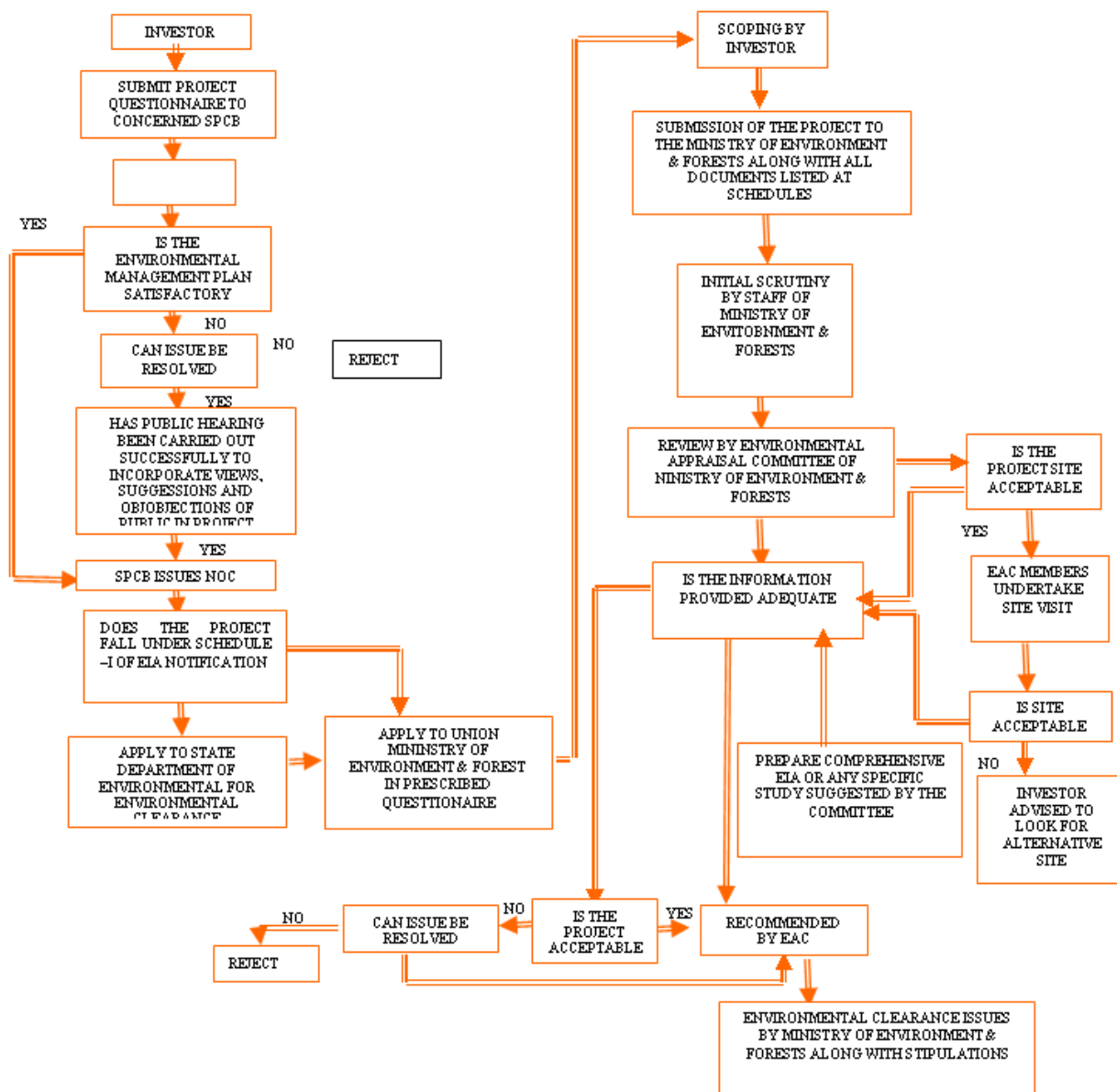


Fig. 4: Process of EIA In Project Planning in City Mangement as per MoEF Guidelines

Guidelines are designed for use by ADB staff and its Borrowers to provide guidance on how to fulfill ADB’s environmental assessment requirements. These guidelines were also prepared to guide consultants who need to know ADB’s policies and procedures in preparation of an initial environmental examination (IEE) or an environmental impact assessment (EIA) report for a project under consideration. Guidance is also provided on more strategic tools such as country environmental analysis (CEA) and strategic environmental assessment (SEA). The guidelines may also be of use to non-government organizations (NGOs) and academe that are interested in ADB’s environmental requirements and review processes. The current version of the Guidelines has also taken into account the need to harmonize, to the extent appropriate and possible, the procedures of the multilateral development banks.

Environment must be considered at all stages of the project cycle from project identification through implementation. The environmental assessment requirements depend on the environment category. Category A projects have the most stringent requirements and need the highest level of effort and resources; Category B have less stringent requirements, and Category C, has the minimum requirements.

Environmental Assessment Requirements for Project Loans



Category Basic	Environmental Assessment Requirements
A. Projects with potential for significant adverse environmental impacts (OM 20)	EIA <ul style="list-style-type: none"> <li>▪ Public consultation (at least twice)</li> <li>▪ EIA report to be prepared (see Appendix 2 for contents)</li> <li>▪ Environmental management plan and budget to be prepared</li> <li>▪ SEIA to be circulated to the Board 120 days prior to Board consideration</li> <li>▪ SEIA to be disclosed to public</li> <li>▪ EIA available to public on request</li> </ul>
B. Projects judged to have some adverse environmental impacts – but of lesser degree and/or significance than category A (OM 20)	IEE <ul style="list-style-type: none"> <li>▪ Public consultation</li> <li>▪ IEE report to be prepared (see Appendix 3 for contents)</li> <li>▪ For projects deemed to be environmentally sensitive, <ol style="list-style-type: none"> <li>a. SIEE to be circulated to the Board 120 days prior to Board consideration</li> <li>b. SIEE to be disclosed to public</li> <li>c. Environmental management plan and budget to be prepared</li> </ol> </li> <li>▪ IEE available to public on request</li> <li>▪ if it is not circulated, the SIEE is normally to be attached as a core appendix</li> </ul>
C. Projects unlikely to have adverse environmental impacts (OM 20)	No IEE or EIA <ul style="list-style-type: none"> <li>▪ Environmental implications to be summarized in the RRP</li> </ul>

### 4.3 OP 4.01: World Bank 1999

EA is a process whose breadth, depth, and type of analysis depend on the nature, scale and potential environmental impact of the proposed project. EA evaluates a project's potential environmental risks and impacts in the area of influence, examines project alternatives, identifies ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts, and includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The Bank favours preventive measures over mitigatory or compensatory measures, whenever feasible.

EA takes into account the natural environment (air, water and Land), human health and safety, social aspects (involuntary resettlement, indigenous people and cultural property), and under transboundary and global environmental aspects EA considers natural and social aspects in an integrated way.

For category A project: A proposed Project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works.

For Category B project: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally sensitive areas- including wetlands, forests, grasslands, other natural habitats- are less adverse than those of Category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigatory measures can be designed more readily than for Category A projects.

For Category C Project: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts.

For category F1: A proposed project is classified as category F1 if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

## 5 APPLICABILITY

The possible scopes of EIAs in Urban Projects are as follows:

Project Impact On	Motive of Concern (why the impact is important)	Dimensions of the impact and/or the concern
Resources deterioration (Pollution) Air pollution Water pollution Solid wastes Hazardous wastes Toxic substances/ radiation Noise Vegetation deterioration Soil pollution/ erosion Global pollution (ozone, greenhouse)	Human health Economic efficiency Biodiversity losses Urban assets losses Global climate	Spatial dimension (where to look) Indoor (household, workplace) The city The urban fringe The hinterland Global issues  b. Lnks dimension (how far to go in cause-effect chains) Direct impacts indirect impacts Cumulative impacts (synergetic)
Resource consumption Water Energy Transport Land/soils Vegetation Food/ fibers Materials Labour	Forced resettlement Quality of urban life Economic efficiency Biodiversity losses Urban assets losses	c. Time dimension (for how long) The project time scale The city time scale  d. Social dimension (addressing the 'who' issue)
Hazard Natural Hazard Constructed Hazard	Human safety Biodiversity losses Other economic losses	Poverty Resettlement Equity
Ecosystem health Green belts Buffer zones Encroachment on fragile or valuable ecosystems	Biodiversity losses Quality of life	e. Remedial dimension (how fat should mitigation go) Reduce negative impacts Promote beneficial impacts

As per Ministry of Environment of Forest in India 2006 EIA Act the categorisation of project are as following table in city space.

Project or Activity	Category with threshold limit		
	A	B	
1	Mining, extraction of natural resources and power generation (for a specified production capacity)		
(a) (1)	(2)	(3)	
1	Mining of minerals	≥ 50 ha. of mining lease area	<50 ha

1(a)		Asbestos mining irrespective of mining area	≥ 5 ha .of mining lease area.
1(b)	Offshore and onshore oil and gas exploration, development & production	All projects	
1(c)	River Valley projects	(i) ≥ 50 MW hydroelectric power generation; (ii) ≥ 10,000 ha. of culturable command area	(i) < 50 MW ≥ 25 MW hydroelectric power generation; (ii) < 10,000 ha. of culturable command area
1(d)	Thermal Power Plants	≥ 500 MW (coal/lignite/naphta & gas based); ≥ 50 MW (Pet coke diesel and all other fuels )	< 500 MW (coal/lignite/naphta & gas based); <50 MW ≥ 5MW (Pet coke ,diesel and all other fuels )
1(e)	Nuclear power projects and processing of nuclear fuel	All projects	-
2		Primary Processing	
2(a)	Coal washeries	≥ 1 million ton/annum throughput of coal	<1million ton/annum throughput of coal
2 (b)	Mineral beneficiation	≥ 0.1million ton/annum mineral throughput	< 0.1million ton/annum mineral throughput
3		Materials Production	
3(a)	Metallurgical industries (ferrous & non ferrous)	a)Primary metallurgical industry All projects b) Sponge iron manufacturing ≥ 200TPD c)Secondary metallurgical processing industry All toxic and heavy metal producing units ≥ 20,000 tonnes /annum	Sponge iron manufacturing <200TPD Secondary metallurgical processing industry i.)All toxic andheavymetal producing units <20,000 tonnes /annum ii.)All other non –toxic secondary metallurgical processing industries >5000 tonnes/annum

3(b)	Cement plants	≥ 1.0 million tonnes/annum production capacity	<1.0 million tonnes/annum production capacity. All Stand alone grinding units
4	Materials Processing		
4(a)	Petroleum refining industry	All projects	-
4(b)	Coke oven plants	≥2,50,000 tonnes/annum -	<2,50,000 & ≥25,000 tonnes/annum
4(c)	Asbestos milling and asbestos based products	All projects	-
4(d)	Chlor-alkali industry	≥300 TPD production capacity or a unit located out side the notified industrial area/ estate	<300 TPD production capacity and located within a notified industrial area/ estate
4(e)	Soda ash Industry	All projects	-
4(f)	Leather/skin/hide processing industry	New projects outside the industrial area or expansion of existing units out side the industrial area	All new or expansion of projects located within a notified industrial area/ estate
5	Manufacturing/Fabrication		
5(a)	Chemical fertilizers	All projects	-
5(b)	Pesticides industry and pesticide specific intermediates (excluding formulations)	All units producing technical grade pesticides	-
5(c)	Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics)	All projects -	-
5(d)	Manmade fibres manufacturing	Rayon	Others
5(e)	Petrochemical based processing (processes other than cracking & reformation and not covered under the complexes)	Located out side the notified industrial area/ estate -	Located in a notified industrial area/ estate
5(f)	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and	Located out side the notified industrial area/ estate	Located in a notified industrial area/ estate

	chemical intermediates)		
5(g)	Distilleries	(i) All Molasses based distilleries (ii) All Cane juice/ non-molasses based distilleries $\geq 30$ KLD	All Cane juice/non-molasses based distilleries – <30 KLD
5(h)	Integrated paint industry	-	All projects
5(i)	Pulp & paper industry excluding manufacturing of paper from waste paper and manufacture of paper from ready pulp with out bleaching	Pulp manufacturing and Paper manufacturing industry -	Paper manufacturing industry without pulp manufacturing
5(j)	Sugar Industry	- -	$\geq 5000$ tcd cane crushing capacity
5(k)	Induction/arc furnaces/cupola furnaces 5TPH or more	- -	All projects
6		Service Sectors	
6(a)	Oil & gas transportation pipe line (crude and refinery/ petrochemical products), passing through national parks /sanctuaries/coral reefs /ecologically sensitive areas including LNG Terminal	All projects -	
6(b)	Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of schedule 2 & 3 of MSIHC Rules 1989 amended 2000)	-	All projects
7		Physical Infrastructure including Environmental Services	
7(a)	Air ports	All projects	-
7(b)	All ship breaking yards including ship breaking units	All projects	-
7(c)	Industrial estates/ parks/ complexes/ areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes.	If at least one industry in the proposed industrial estate falls under the Category A, entire industrial area shall be treated as Category A, irrespective of the area.  Industrial estates with area greater than 500 ha. and housing at least one Category B industry.	Industrial estates housing at least one Category B industry and area <500 ha.  Industrial estates of area > 500 ha.

			and not housing any industry belonging to Category A or B.
7(d)	Common hazardous waste treatment, storage and disposal facilities (TSDFs)	All integrated facilities having incineration & landfill or incineration alone	All facilities having land fill only
7(e)	Ports, Harbours	≥ 5 million TPA of cargo handling capacity (excluding fishing harbours)	< 5 million TPA of cargo handling capacity and/or ports/ harbours ≥10,000 TPA of fish handling capacity
7(f)	Highways	i) New National High ways; and ii) Expansion of National High ways greater than 30 KM, involving additional right of way greater than 20m involving land acquisition and passing through more than one State.	i) New State High ways; and ii) Expansion of National / State Highways greater than 30 km involving additional right of way greater than 20m involving land acquisition.
7(g)	Aerial ropeways		All projects
7(h)	Common Effluent Treatment Plants (CETPs)		All projects
7(i)	Common Municipal Solid Waste Management Facility (CMSWMF)		All projects
8(a)	Building and Construction projects		≥20000 sq.mtrs and <1,50,000 sq.mtrs. of built-up area#

Category A	Category B	Category C	Category F1
Dams and reservoirs Forestry and production projects (large-scale) Industrial plants (large-scale) Irrigation, drainage, and flood control (large-scale) Mineral development (oil and gas) Port and harbor development Thermal and	Agro-industries Rural electrification Electrical Transmission Urban water supply and sanitation Rural water supply and sanitation Irrigation and drainage (small scale) Watershed projects Renewable energy	Forestry research and extension Rural health services Marine research Family planning program Micro-finance projects likely to have minimal or no adverse impacts	Credit Lines Equity Investments

hydropower development			
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8(b)	Townships and Development projects.	Area	Covering an area $\geq 50$ ha and or built up area $\geq 1,50,000$ sq .mtrs ++
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Finally, it is troubling to note that while many EIA exercises apply state-of-the-art methods to assess air or water quality, nothing comparable was done with respect to social and economic issues. Stakeholders' views and needs were generally handled with a few public hearings or with crude, at best, surveys. Detailed social analysis was only attempted when large resettlement impacts were expected (Gutman 1994b). Despite the existence of well-established tools to tackle the economic valuation of environmental impacts (Dixon et al. 1988), economic valuations seemed beyond the scope of all EIAs reviewed. This lack of depth in social and economic issues, common to many EIAs (see World Bank 1993a, and 1994), is particularly worrisome in urban-related projects where one would expect both social and economic dimensions to be of great importance.

## 6 CONCLUSION

Although EIAs can certainly improve development project designs, there are still limitations to what they can achieve. Usually an EIA is undertaken to consider the potential environmental impacts of an already-identified project. Hence, EIA techniques can help only insofar as they can enhance a project's positive impacts and avoid or mitigate negative ones. EIAs have little to offer with respect to the initial decisions to consider projects for investment in the first place. To identify needed environmental projects or foster citywide environmental policies, more pro-active instruments are called for, like national environmental action plans (NEAPS), or city environmental plans, which usually make up part of a metropolitan development plan. Far from being alternatives, the citywide and project approaches are complementary.

Good citywide environmental plans, in particular, can help the project-by-project EIA, providing much needed city-specific environmental goals and standards against which development projects should be assessed.

This review has suggested that many EIAs of urban-related projects fail to adopt a urban environment perspective. They tend to concentrate on direct pollution impacts and give limited or no consideration to indirect and cumulative impacts and other wider urban environmental concerns, including social and economic effects. While this could be a sensible approach to small or very specific interventions, it surely understates the urbanwide environmental impacts of large projects. The most critical EIA stage in this regard is the scoping stage. Yet the importance of a detailed scoping exercise—a clear discussion of what is in and what is out of the scope of the EIA—is many times overlooked, a fact that can be inferred from the absence of explicit reference to this process in most EIA reports. All too frequently, when a list of the impacts to be considered appears, it is presented as technically fixed, without any discussion about why the selected impacts are relevant or key to the project. There is need

A systematic consideration of resource use issues. Although resource use is often viewed as a country-scale issue, rather than an urban one, it relates to several important city-level concerns, such as (a) long-range urban sustainability and (b) depletion of urban and periurban natural resources (water, green belts, recreational areas). Considerations of resource use are also important because of the links between efficient resource use and pollution abatement as polluter pay principle. Also several policy interventions to reduce resource consumption are usually taken at a municipal level (resources pricing, recycling, etc.).

Ways to address the cross-sectoral, multidimensional character of the environmental impacts and concerns, particularly in relation to (a) the spatial dimensions, (b) the causalities involved, (c) the time scale of the impact, (d) the social concerns, and (e) the range of remedial actions to be considered

## 7 REFERENCES

- EIA Notification 2006, Ministry of Environment & forest, India  
EAG 2003 under ADB  
OP 4.00 under World Bank.