



Research Article

Evaluating the Effectiveness of Environmental Impact Assessment in Protecting the Environment: From Paper to Practice

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ABSTRACT

Environmental Impact Assessment (EIA) has emerged as one of the most significant regulatory mechanisms for reconciling developmental needs with environmental protection. Introduced as a preventive measure, its primary objective is to anticipate, identify, and assess the potential environmental impacts of proposed projects before implementation, thereby ensuring sustainable development. In theory, EIA is envisioned as a robust framework that integrates environmental concerns into the decision-making process, ensures public participation, and promotes accountability among project proponents. However, the effectiveness of EIA in practice has often been questioned.

This paper critically examines the gap between the theoretical promise of EIA and its actual implementation in India. It evaluates whether the EIA process has been successful in mitigating adverse environmental impacts or whether it has merely become a procedural formality to secure project clearances. Particular attention is given to issues such as inadequate baseline data, poor quality of Environmental Impact Statements, limited stakeholder engagement, and the frequent dilution of legal requirements through policy relaxations. The role of institutions, regulatory bodies, and the judiciary in strengthening or weakening the EIA framework is also assessed. The paper argues that for EIA to transition from “paper to practice,” reforms are necessary to enhance institutional capacity, ensure scientific rigor, promote genuine public participation, and impose stricter compliance mechanisms.

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INTRODUCTION

Environmental protection has become one of the most pressing concerns in the 21st century. With industrialization, urbanization, and large-scale developmental projects, the need to balance economic growth with environmental sustainability has grown significantly. In this context, the Environmental Impact Assessment (EIA) has emerged as one of the most vital tools of ecological governance, functioning as a preventive mechanism to assess the possible impacts of proposed projects on the environment before their implementation.

EIA is not just a technical exercise; it is a legal, administrative, and participatory mechanism designed to safeguard environmental rights and ensure that development activities comply with the principles of sustainable development. The concept of EIA is deeply rooted in the precautionary approach—anticipating environmental harm before it occurs and taking appropriate preventive measures.

At the global level, the principle of prior assessment was endorsed during the Stockholm Conference of 1972 and further elaborated in Principle 17 of the Rio Declaration, 1992, which recognized EIA as a key instrument for environmental protection.¹ In India, the evolution of EIA is closely linked to the Environment (Protection) Act, 1986, which provided the legal basis for issuing notifications mandating environmental clearance for developmental projects. The EIA Notification of 1994, later replaced by the EIA Notification of 2006, forms the backbone of the EIA regime in India.²

Despite its wide acceptance, EIA in India has often been criticized for being more of a “paper tiger”—strong in theory but weak in practice. Several shortcomings, including bureaucratic delays, poor quality of reports, lack of genuine public participation, and political interference, have prevented EIA from fulfilling its intended purpose.³ Judicial intervention has, at times, strengthened the EIA framework, but questions about its real effectiveness remain.

This article attempts to evaluate the effectiveness of EIA in protecting the environment by moving beyond its theoretical foundations (“on paper”) and examining its practical implementation (“in practice”). The study explores the legal framework, judicial interpretation, challenges in implementation, and possible reforms to bridge the gap between paper and practice.

Legal Framework of EIA in India

Environmental Impact Assessment (EIA) in India has its foundation in statutory, administrative, and judicial measures.

Unlike some jurisdictions where EIA legislation exists as a comprehensive statute, in India, it functions primarily through delegated legislation under the Environment (Protection) Act, 1986 (EPA). The legal framework has evolved gradually—from being an administrative requirement in the early 1980s to becoming a mandatory statutory process after the EIA Notifications of 1994 and 2006.

The Environment (Protection) Act, 1986

The EPA, 1986, is the umbrella legislation that empowers the Central Government to take measures for protecting and improving the environment.⁴ It was enacted in the aftermath of the Bhopal Gas Tragedy of 1984, highlighting the urgent need for stronger environmental safeguards. Section 3 of the Act empowers the Central Government to take all necessary measures to protect the environment, while Section 6 authorizes it to make rules regulating various environmental activities.⁵

Using these powers, the Ministry of Environment, Forest and Climate Change (MoEFCC) has issued several notifications, the most important being the EIA Notifications, which lay down the legal framework for environmental clearance of developmental projects.

The EIA Notification of 1994

The EIA Notification, 1994, marked the beginning of the statutory EIA regime in India.⁶ It required environmental clearance (EC) for certain categories of projects, such as mining, thermal power plants, industries, and infrastructure projects.

Key features included:

Mandatory Prior Clearance: Development projects listed under Schedule I require prior EC from MoEFCC.

Screening and Appraisal: Projects were subject to scrutiny by an Expert Committee before approval.

Lacunae: However, the 1994 notification was criticized for being weak, as public consultation was absent, monitoring was poor, and the entire process was centralized.⁷

The EIA Notification of 2006

To overcome the limitations of the 1994 notification, the EIA Notification of 2006 was issued.⁸ It remains the primary framework governing EIAs in India today.

Major features include:

¹ United Nations Conference on Environment and Development, Rio Declaration on Environment and Development, princ. 17, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I) (Aug. 12, 1992).

² The Environment (Protection) Act, No. 29 of 1986, INDIA CODE (1986); Ministry of Env't & Forests, Notification on Environmental Impact Assessment, S.O. 60(E), Gazette of India, Jan. 27, 1994 (India); Ministry of Env't & Forests, Notification on Environmental Impact Assessment, S.O. 1533(E), Gazette of India, Sept. 14, 2006 (India).

³ S. Divan & A. Rosencranz, *Environmental Law and Policy in India* 352–355 (3d ed. 2022).

⁴ The Environment (Protection) Act, No. 29 of 1986, INDIA CODE (1986).

⁵ Id. §§ 3, 6.

⁶ Ministry of Env't & Forests, Notification on Environmental Impact Assessment, S.O. 60(E), Gazette of India, Jan. 27, 1994 (India).

⁷ P. Leelakrishnan, *Environmental Law in India* 215–218 (6th ed. 2020).

⁸ Ministry of Env't & Forests, Notification on Environmental Impact Assessment, S.O. 1533(E), Gazette of India, Sept. 14, 2006 (India).

1. Decentralization: Projects are categorized into Category A (national-level clearance from MoEFCC) and Category B (state-level clearance from State Environment Impact Assessment Authorities, SEIAAs).

2. Four-Stage Process:

Screening – Determining whether a project requires EIA.

Scoping – Identifying key environmental issues.

Public Consultation – Including public hearings to gather opinions of affected communities.

Appraisal – Expert Appraisal Committee (EAC) reviews and recommends clearance.

3. Public Participation: For the first time, public hearings became a legal requirement, thereby democratizing the process.

4. Monitoring and Compliance: Project proponents were required to submit compliance reports periodically.

Despite these reforms, critics argue that the 2006 notification still suffers from loopholes, such as exemptions for certain projects, dilution through subsequent amendments, and ineffective enforcement.⁹

The Draft EIA Notification of 2020

In 2020, MoEFCC released a Draft EIA Notification proposing significant changes.¹⁰ The draft sought to:

- Allow post-facto clearances, permitting projects to operate without prior clearance.
- Reduce frequency of compliance reporting from six months to one year.
- Exempt certain categories of projects (including some mining and industrial units) from public consultation.

These provisions were widely criticized by environmentalists, NGOs, and legal scholars as a dilution of the EIA process, undermining its preventive character.¹¹

Judicial Interpretation

The Indian judiciary has played a crucial role in shaping the legal framework of EIA. Courts have emphasized that EIA is integral to the right to life under Article 21 of the Constitution.¹²

In *Vellore Citizens' Welfare Forum v. Union of India*,¹³ the Supreme Court recognized the precautionary principle and sustainable development as part of Indian law.

In *Narmada Bachao Andolan v. Union of India*,¹⁴ the Court upheld the role of EIA in balancing development and environmental protection.

In *Lafarge Umiam Mining Pvt. Ltd. v. Union of India*,¹⁵ the Court stressed the importance of meaningful public participation and transparency in the EIA process.

Through these judgments, the judiciary has ensured that EIA does not remain a mere procedural formality but functions as a substantive tool for environmental justice.

The legal framework of EIA in India represents a blend of statutory powers under the EPA, administrative notifications, and judicial interpretation. While the 2006 Notification significantly strengthened the process by introducing public participation and decentralization, frequent amendments and proposals, such as the 2020 draft, threaten to weaken its preventive role. The judiciary has been instrumental in safeguarding the core principles of EIA, but the real test lies in ensuring that these laws are implemented effectively at the ground level.

EIA and Environmental Protection in the Global Context

Environmental Impact Assessment (EIA) has emerged as a universal mechanism for integrating environmental considerations into development decision-making. While the framework and procedures vary across jurisdictions, the core objective of EIA remains the same—to predict, evaluate, and mitigate adverse environmental impacts before project implementation. Examining global practices helps understand the strengths and weaknesses of India's EIA regime and highlights opportunities for reform.

Evolution of EIA in International Environmental Law

The concept of prior environmental assessment gained recognition in international law after the 1972 Stockholm Conference on the Human Environment.¹⁶ Principle 15 of the Rio Declaration (1992) reaffirmed the precautionary approach, while Principle 17 expressly recognized EIA as a national instrument to assess environmental impacts of proposed activities.¹⁷

The Espoo Convention on Environmental Impact Assessment in a Transboundary Context (1991) further advanced the role of EIA by making it mandatory for parties to notify and consult each other regarding projects likely to cause cross-border environmental harm.¹⁸ Additionally, the International Court of Justice (ICJ) in the *Pulp Mills on the River Uruguay Case* held

⁹ Shibani Ghosh, *The EIA Process in India: Problems and Prospects*, 48 *Econ. & Pol. Wkly.* 30, 32–34 (2013).

¹⁰ Ministry of Env't, Forest & Climate Change, *Draft Environmental Impact Assessment Notification*, S.O. 1199(E), *Gazette of India*, Mar. 23, 2020 (India).

¹¹ Kanchi Kohli & Manju Menon, *Why India's Draft EIA Notification, 2020, Must Be Reconsidered*, 55 *Econ. & Pol. Wkly.* 12, 14–16 (2020).

¹² *India Const.* art. 21.

¹³ *Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647 (India).

¹⁴ *Narmada Bachao Andolan v. Union of India*, (2000) 10 SCC 664 (India).

¹⁵ *Lafarge Umiam Mining Pvt. Ltd. v. Union of India*, (2011) 7 SCC 338 (India).

¹⁶ United Nations Conference on the Human Environment, *Stockholm Declaration*, U.N. Doc. A/CONF.48/14/Rev.1 (June 16, 1972).

¹⁷ United Nations Conference on Environment and Development, *Rio Declaration on Environment and Development*, princs. 15, 17, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I) (Aug. 12, 1992).

¹⁸ *Convention on Environmental Impact Assessment in a Transboundary Context*, Feb. 25, 1991, 1989 U.N.T.S. 309.

that conducting an EIA is a requirement under general international law when activities are likely to cause significant transboundary environmental harm.¹⁹

Comparative Study of EIA in Select Jurisdictions

(a) United States

The United States pioneered the concept of EIA through the National Environmental Policy Act (NEPA), 1969.²⁰ NEPA requires all federal agencies to prepare an Environmental Impact Statement (EIS) for major federal actions significantly affecting the environment.

It emphasizes public participation, inter-agency coordination, and transparency.

Judicial review has played a strong role in ensuring compliance. NEPA is widely considered the most robust EIA legislation, though critics argue it has become overly procedural and litigation-driven.²¹

(b) United Kingdom

The United Kingdom introduced EIA through the Town and Country Planning (Environmental Impact Assessment) Regulations, 1988, later aligned with the European Union (EU) EIA Directive.²²

EIAs are integrated into the planning permission system.

Public participation and consultation with environmental authorities are mandatory.

After Brexit, the UK continues to follow EIA principles while adapting them to its independent regulatory framework.²³

(c) Australia

Australia's Environment Protection and Biodiversity Conservation Act (EPBC), 1999, incorporates EIA as part of environmental approvals.²⁴

The Act emphasizes the precautionary principle and the protection of biodiversity.

The federal and state governments share responsibilities, reflecting a federal structure similar to India.

(d) China

China adopted EIA through its Environmental Impact Assessment Law of 2002.²⁵

It mandates environmental assessment for all construction projects and certain plans.

However, scholars argue that enforcement remains weak due to political influence and a lack of transparency.²⁶

Lessons for India from Global Practices

A comparative perspective offers several lessons for strengthening EIA in India:

1. Legislative Backing: Unlike the U.S. NEPA or China's EIA Law, India still relies on notifications under the EPA. A standalone EIA legislation could provide stronger legal backing.

2. Independent Monitoring: In the U.S. and UK, independent agencies and judicial review ensure compliance. India needs an autonomous body to monitor post-clearance compliance.

3. Public Participation: Effective models from the U.S. (public hearings and comment process) highlight the importance of genuine community involvement. In India, public participation often remains tokenistic.

4. Integration into Planning: In the UK, EIA is embedded in land-use planning. India should similarly integrate EIA into broader regional and spatial planning frameworks.

5. Transboundary and Cumulative Impact Assessment: Espoo Convention practices emphasize transboundary impacts, which India has not adequately addressed in its EIA framework. Globally, EIA has matured into a critical legal and administrative tool for balancing development and environmental protection. The international framework emphasizes precaution, participation, and accountability, principles equally relevant to India. By drawing lessons from global practices, India can reform its EIA system to ensure it functions not merely as a procedural hurdle but as a substantive safeguard for environmental protection.

From Paper to Practice – Challenges in EIA Implementation

Although Environmental Impact Assessment (EIA) is designed as a preventive and participatory mechanism, its implementation in India reveals a substantial gap between theory ("paper") and practice ("ground reality"). The process often degenerates into a mere formality, failing to achieve its intended purpose of safeguarding the environment. This chapter critically analyses the systemic, procedural, and structural challenges that weaken the EIA mechanism in India.

Procedural Delays and Bureaucratic Hurdles

The EIA process is often criticized for delays in project approvals and bureaucratic red tape.²⁷ While this has led to pressure from industries and policymakers to simplify or dilute

¹⁹ Pulp Mills on the River Uruguay (Arg. v. Uru.), Judgment, 2010 I.C.J. Rep. 14, ¶ 204.

²⁰ National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370h (2018).

²¹ Nicholas A. Robinson, NEPA at 19: A Primer on an "Old" Law with Solutions for a New Era, 19 Env'tl. L. 1, 12–14 (1989).

²² Town and Country Planning (Environmental Impact Assessment) Regulations 1988, S.I. 1988/1199 (U.K.).

²³ Maria Lee, Environmental Law After Brexit: The Future of Environmental Impact Assessment in the UK, 32 J. Env't L. 85, 90–93 (2020).

²⁴ Environment Protection and Biodiversity Conservation Act 1999 (Cth) (Austl.).

²⁵ Environmental Impact Assessment Law of the People's Republic of China, 2002 (P.R.C.).

²⁶ Yun Zhao, Environmental Impact Assessment in China: Practice and Problems, 13 J. Env'tl. L. 141, 145–148 (2001).

²⁷ R.K. Sapra, Environmental Impact Assessment in India: Problems and Prospects, 45 Indian J. Pub. Admin. 315, 319–21 (1999).

the process, it has also fostered a culture of fast-tracking clearances without adequate scrutiny. According to a report by the Centre for Science and Environment (CSE), more than 90% of projects submitted for clearance in India are approved, raising concerns about whether the process is genuinely rigorous.²⁸

Quality of EIA Reports

EIA reports in India are frequently prepared by consultants hired by project proponents, creating a conflict of interest.²⁹ Many reports are of poor quality, often described as “copy-paste” documents, with inadequate baseline data, superficial analysis, and omission of cumulative or indirect impacts.³⁰ This undermines the very purpose of an objective environmental assessment.

Public Consultation as a Mere Formality

The 2006 EIA Notification introduced mandatory public hearings.³¹ However, in practice, these hearings are often reduced to token exercises:

- Conducted without proper notice or in inaccessible locations.
- Technical reports are not translated into local languages, making them incomprehensible to affected communities.
- Instances of suppression of dissent and intimidation of participants have been reported.³²

Instead of functioning as a democratic tool for local empowerment, public consultation often becomes a procedural hurdle to be “managed” rather than a genuine platform for environmental justice.

Political and Economic Pressures

Environmental decision-making in India is heavily influenced by the “growth versus environment” debate. The government frequently prioritizes economic development over ecological sustainability.³³ Amendments to the 2006 Notification and the controversial Draft EIA Notification, 2020, exemplify attempts to dilute the process in favor of industries.³⁴ This reflects the political economy of EIA—where development projects with significant financial stakes often override environmental safeguards.

Weak Post-Clearance Monitoring

EIA is not just about granting clearance but also about ensuring compliance post-approval. However, India’s monitoring mechanisms are weak:

- Periodic compliance reports are rarely verified.
- Regulatory bodies (such as State Pollution Control Boards) often lack manpower and expertise.
- Violations are rarely penalized, encouraging a culture of impunity.³⁵
- As a result, even when projects obtain clearance with specific conditions, these conditions are seldom enforced effectively.

Lack of Transparency and Accountability

Access to information is limited, and EIA documents are often not made publicly available promptly.³⁶ Although the Right to Information Act, 2005, empowers citizens to seek information, procedural opacity and lack of proactive disclosure restrict meaningful public oversight.³⁷

Judicial Observations on Weak Implementation

The judiciary has frequently noted the gap between law and practice in EIA:

- In *Sterlite Industries (India) Ltd. v. Union of India*, the Supreme Court criticized the poor quality of EIA studies and stressed the need for strict compliance.³⁸
- In *Samaj Parivartana Samudaya v. State of Karnataka*, the Court emphasized that environmental clearances must be more than a paper exercise and should ensure ecological sustainability.³⁹

Despite such interventions, the systemic weaknesses persist, reflecting deep-rooted structural issues in the governance of EIA.

The challenges facing EIA implementation in India illustrate a classic case of strong law but weak enforcement. While the framework on paper appears comprehensive, in practice, EIA suffers from poor-quality reports, lack of transparency, tokenistic public participation, political interference, and weak monitoring. Unless these structural challenges are addressed, EIA will continue to function as a rubber stamp for development projects, rather than a genuine safeguard for environmental protection.

Judicial Role in Strengthening EIA

The judiciary in India has played a pivotal role in strengthening the Environmental Impact Assessment (EIA) framework. While

²⁸ Centre for Sci. & Env’t, State of India’s Environment 2021 245–47 (2021).

²⁹ Ministry of Env’t, Forest & Climate Change, Accreditation of EIA Consultants and Quality Review Process, Office Memorandum, Mar. 2, 2010 (India).

³⁰ Kanchi Kohli, EIA in India: A Law with Weak Teeth, 41 Econ. & Pol. Wkly. 4201, 4203–04 (2006).

³¹ Ministry of Env’t & Forests, Notification on Environmental Impact Assessment, S.O. 1533(E), Gazette of India, Sept. 14, 2006 (India).

³² Ritwick Dutta, Public Hearings in Environmental Impact Assessment: Democratic Process or Bureaucratic Formality?, 47 Econ. & Pol. Wkly. 66, 68–70 (2012).

³³ T.N. Godavarman Thirumulpad v. Union of India, (2002) 10 SCC 606 (India).

³⁴ Kanchi Kohli & Manju Menon, Why India’s Draft EIA Notification, 2020, Must Be Reconsidered, 55 Econ. & Pol. Wkly. 12, 14–16 (2020).

³⁵ Shibani Ghosh, The Missing Link in EIA: Post-Clearance Monitoring in India, 28 J. Env’t L. 437, 441–45 (2016).

³⁶ Almitra Patel v. Union of India, (2000) 2 SCC 679 (India).

³⁷ The Right to Information Act, No. 22 of 2005, INDIA CODE (2005).

³⁸ Sterlite Indus. (India) Ltd. v. Union of India, (2013) 4 SCC 575 (India).

³⁹ Samaj Parivartana Samudaya v. State of Karnataka, (2013) 8 SCC 154 (India).

EIA is primarily an administrative process under the Environment (Protection) Act, 1986, judicial interventions have transformed it into a substantive mechanism for ensuring environmental protection. The courts, especially the Supreme Court, have interpreted Article 21 of the Constitution of India—the right to life—to include the right to a clean and healthy environment, thereby situating EIA within the ambit of fundamental rights.⁴⁰

❖ Early Judicial Recognition of EIA Principles

In the early 1990s, the Indian judiciary began incorporating international environmental law principles into domestic law. Two doctrines became central to EIA jurisprudence:

Precautionary Principle: Anticipating and preventing environmental harm before it occurs.

Polluter Pays Principle: Holding those responsible for pollution liable for the costs of prevention and remediation.

These principles were explicitly recognized in **Vellore Citizens' Welfare Forum v. Union of India**, where the Supreme Court declared them part of the law of the land.⁴¹ This laid the foundation for interpreting EIA not merely as a technical process but as an embodiment of constitutional and environmental principles.

EIA in Large-Scale Development Projects

The judiciary has consistently scrutinized the adequacy of EIAs in large development projects:

Narmada Bachao Andolan v. Union of India: The Supreme Court examined the EIA process in the context of the Sardar Sarovar Dam Project. While the Court ultimately allowed the project to proceed, it emphasized the importance of rigorous environmental appraisal and compliance with EIA norms.⁴²

Lafarge Umiam Mining Pvt. Ltd. v. Union of India: In this case concerning limestone mining in Meghalaya, the Court underscored the necessity of meaningful public participation in the EIA process. It held that public hearings are not mere procedural formalities but substantive mechanisms for environmental democracy.⁴³

These cases highlight the judiciary's role in ensuring that environmental clearance processes balance development imperatives with ecological sustainability.

❖ Judicial Intervention in Weak EIA Implementation

The courts have also intervened where the EIA process has been undermined by poor-quality reports or a lack of compliance:

Sterlite Industries (India) Ltd. v. Union of India: The Supreme Court criticized the inadequate and flawed EIA reports submitted by Sterlite Copper in Tamil Nadu. While it allowed

the plant to operate under strict conditions, the Court directed stringent post-clearance monitoring.⁴⁴

Samaj Parivartana Samudaya v. State of Karnataka: Addressing rampant illegal mining in Karnataka, the Supreme Court held that EIA and environmental clearances must not be reduced to a “paper exercise” but should function as genuine tools for ecological protection.⁴⁵

Through such judgments, the judiciary has sent a clear message that weak implementation of EIA will not be tolerated.

❖ Expansion of Judicial Oversight

The judiciary has expanded its oversight through various mechanisms:

National Green Tribunal (NGT): Established under the National Green Tribunal Act, 2010, the NGT has become a specialized forum for reviewing environmental clearances and EIA processes.⁴⁶ It has quashed clearances granted without proper public consultation or environmental appraisal.

Continuous Mandamus: In several cases, including the Godavarman forest litigation, the Supreme Court has kept matters pending for continuous monitoring of compliance with environmental safeguards.⁴⁷

Such interventions ensure that EIA is not confined to a one-time clearance but is subject to ongoing judicial scrutiny.

❖ Judicial Contribution to EIA Jurisprudence

Through its decisions, the judiciary has contributed to the development of key jurisprudential principles governing EIA:

1. Integration of International Principles: Incorporating precautionary and polluter pays principles into Indian law.

2. Substantive Public Participation: Emphasizing that public hearings must be meaningful, not tokenistic.

3. Judicial Monitoring: Recognizing the importance of post-clearance compliance and monitoring.

4. Constitutionalization of EIA: Linking EIA to Article 21 and elevating it to the status of a fundamental right safeguard.

The judiciary has been instrumental in strengthening the EIA framework in India by holding authorities and project proponents accountable, insisting on transparency and public participation, and embedding EIA within the constitutional right to life. However, judicial interventions cannot substitute for systemic reforms in EIA administration. The challenge remains to institutionalize these principles so that EIA functions effectively without requiring constant judicial oversight.

Effectiveness of EIA in Protecting the Environment

Environmental Impact Assessment (EIA) has been one of the most significant regulatory tools in India to reconcile the conflicting demands of economic development and

⁴⁰ India Const. art. 21.

⁴¹ Vellore Citizens' Welfare Forum v. Union of India, (1996) 5 SCC 647 (India).

⁴² Narmada Bachao Andolan v. Union of India, (2000) 10 SCC 664 (India).

⁴³ Lafarge Umiam Mining Pvt. Ltd. v. Union of India, (2011) 7 SCC 338 (India).

⁴⁴ Sterlite Indus. (India) Ltd. v. Union of India, (2013) 4 SCC 575 (India).

⁴⁵ Samaj Parivartana Samudaya v. State of Karnataka, (2013) 8 SCC 154 (India).

⁴⁶ The National Green Tribunal Act, No. 19 of 2010, INDIA CODE (2010).

⁴⁷ T.N. Godavarman Thirumulpad v. Union of India, (2002) 10 SCC 606 (India).

environmental protection. While it has made substantial contributions in shaping sustainable development policies, the effectiveness of EIA in India remains contested. This chapter critically examines the achievements, limitations, and practical outcomes of EIA in protecting the environment.

Achievements of EIA

a) Integration of Environmental Concerns into Development Planning

EIA has ensured that environmental considerations are embedded within the planning process of major projects. Sectors such as mining, industries, hydropower, and infrastructure are now subject to environmental appraisal before commencement. This has helped prevent unregulated exploitation of natural resources.⁴⁸

b) Promotion of Sustainable Development

By mandating environmental clearance, the EIA framework seeks to strike a balance between development and ecological conservation. The Supreme Court in *M.C. Mehta v. Union of India* emphasized that development must not come at the cost of the environment and recognized EIA as a mechanism to operationalize the principle of sustainable development.⁴⁹

c) Public Participation

The provision of public hearings has enhanced democratic decision-making in environmental governance. Although often criticized for being tokenistic, in certain cases public participation has led to stricter scrutiny of projects, particularly in ecologically sensitive areas.⁵⁰

d) Judicial Reinforcement

As elaborated in Chapter 5, judicial interventions have strengthened EIA by holding project proponents accountable, quashing defective clearances, and ensuring compliance with environmental norms.⁵¹

Limitations of EIA in India

Despite its achievements, the EIA mechanism suffers from multiple structural and operational shortcomings:

➤ Poor-Quality EIA Reports

Most EIA reports are prepared by consultants hired by project proponents, raising issues of bias and conflict of interest. A study by the Centre for Science and Environment revealed that many reports are plagiarized, incomplete, or based on outdated data.⁵²

➤ Lack of Effective Public Participation

While public hearings are mandated, they are often conducted in a perfunctory manner, with limited notice, absence of

translations into local languages, and restricted accessibility. This undermines the very objective of ensuring community involvement.⁵³

➤ Weak Monitoring and Enforcement

Post-clearance monitoring remains one of the weakest aspects of the EIA framework. Projects often receive environmental clearance but fail to comply with mitigation measures. Authorities rarely cancel clearances due to political and economic pressures.⁵⁴

➤ Dilution of EIA Norms

Recent policy changes, such as the Draft EIA Notification 2020, have been criticized for favouring industries by allowing post-facto clearances, exempting certain categories of projects from appraisal, and weakening public consultation processes.⁵⁵

Case Studies: EIA in Practice

• Positives

Delhi Metro Project: Considered a successful example where EIA helped integrate environmental safeguards, including pollution reduction and green belt development.⁵⁶

Chilika Lake Protection: The Supreme Court quashed a thermal power project near Chilika Lake in Odisha after evaluating EIA reports that underestimated ecological damage.⁵⁷

• Negatives

Sterlite Copper Plant (Thoothukudi, Tamil Nadu): The EIA process failed to identify and mitigate pollution adequately, leading to long-term environmental and public health consequences.⁵⁸

Vizhinjam Port Project (Kerala): Despite EIA clearances, the project has faced allegations of coastal erosion and displacement, exposing the gap between paper promises and ground realities.⁵⁹

Comparative Global Perspective

Compared to countries like the United States, where EIA under the National Environmental Policy Act (NEPA), 1969 emphasizes detailed environmental review and litigation by civil society, the Indian model remains relatively weaker in terms of transparency, independence, and enforcement.⁶⁰

⁴⁸ Ministry of Env't, Forest & Climate Change, Govt. of India, Environmental Impact Assessment Notification, 2006, Gazette of India, S.O. 1533(E) (Sept. 14, 2006).

⁴⁹ *M.C. Mehta v. Union of India*, (2004) 12 SCC 118 (India).

⁵⁰ *Lafarge Umiam Mining Pvt. Ltd. v. Union of India*, (2011) 7 SCC 338 (India).

⁵¹ *Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647 (India).

⁵² Centre for Science & Environment, *EIA: An Assessment of Reports in India* (2019).

⁵³ Kanchi Kohli & Manju Menon, *Elephant in the Room: Reflections on EIA in India*, Econ. & Pol. Wkly., Vol. 45, No. 24 (2010).

⁵⁴ Radhika Krishnan, *Weak Enforcement of EIA Norms in India*, 13 J. Env't L. & Pol'y 45 (2017).

⁵⁵ Ministry of Env't, Forest & Climate Change, *Draft Environmental Impact Assessment Notification, 2020*, Gazette of India (Mar. 23, 2020).

⁵⁶ *Delhi Metro Rail Corp. Ltd., Environmental Sustainability Report* (2015).

⁵⁷ *S. Jagannath v. Union of India*, (1997) 2 SCC 87 (India).

⁵⁸ *Sterlite Indus. (India) Ltd. v. Union of India*, (2013) 4 SCC 575 (India).

⁵⁹ K.P. Sethunath, *Coastal Impact of Vizhinjam Port Project*, The Hindu (Aug. 2019).

⁶⁰ National Environmental Policy Act, 42 U.S.C. §§ 4321–4370h (1969).

Overall Effectiveness

In theory, EIA provides a robust mechanism for environmental protection. In practice, however, its effectiveness is often compromised by:

- Political and economic pressures.
- Weak enforcement capacity.
- Limited accountability of project proponents and consultants.

Nevertheless, EIA has been partially effective in slowing down ecologically destructive projects, integrating sustainability into policy, and empowering civil society through litigation.

The EIA framework has succeeded in institutionalizing environmental considerations into development projects, but its effectiveness remains hampered by weak implementation and dilution of norms. Strengthening the independence of appraisal committees, improving transparency, and ensuring genuine public participation are essential for EIA to fulfill its protective role. Without systemic reforms, EIA risks remaining a paper tiger rather than a practical safeguard for the environment.

Challenges and the Way Forward

Environmental Impact Assessment (EIA) in India has evolved as a critical instrument for integrating ecological considerations into development planning. However, the mechanism continues to face persistent challenges that undermine its effectiveness. This chapter identifies these challenges and proposes a roadmap for strengthening the EIA framework to ensure that it functions as a genuine tool for environmental protection rather than a procedural formality.

Major Challenges in the EIA Framework

a) Institutional Weakness

The Expert Appraisal Committees (EACs), which evaluate EIA reports, often lack adequate independence. Members are frequently appointed on an ad hoc basis and may face pressure from political and corporate interests. This weakens the credibility of the decision-making process.⁶¹

b) Conflict of Interest in EIA Reports

Since EIA reports are prepared by consultants hired directly by project proponents, there is a conflict of interest that results in biased and incomplete assessments. Independent third-party verification is largely absent.⁶²

c) Limited Public Participation

Although the law mandates public hearings, these are often reduced to perfunctory exercises. Issues such as inadequate notice periods, hearings conducted in English without translation, and restricted access for marginalized communities significantly dilute the participatory spirit of EIA.⁶³

d) Weak Monitoring and Enforcement

Even when environmental clearances are granted with conditions, post-clearance monitoring is grossly inadequate. Many projects operate without fulfilling mitigation requirements. The lack of regular inspections and penalties results in non-compliance going unchecked.⁶⁴

e) Policy Dilutions

Recent policy shifts, such as the Draft EIA Notification 2020, propose exemptions for certain projects, post-facto clearances, and reduced public consultation. These dilutions risk turning EIA into a rubber stamp for development projects rather than a safeguard for the environment.⁶⁵

The Way Forward

• Strengthening Legal Framework

The Environment (Protection) Act, 1986, provides only broad powers for EIA regulations. There is a pressing need for a comprehensive EIA legislation in India that clearly defines the scope, process, rights, and obligations of all stakeholders.⁶⁶

• Ensuring Independence of EIA Appraisal

Expert Appraisal Committees and State-level authorities must function with institutional independence, free from political or industrial influence. Members should be selected transparently, based on expertise, and subject to conflict-of-interest disclosures.⁶⁷

• Reforming EIA Reporting

EIA studies must be conducted by independent accredited agencies monitored by a national regulatory body. To prevent manipulation, reports should be placed in the public domain for peer review before clearance.⁶⁸

• Enhancing Public Participation

Public hearings should be conducted in local languages, with sufficient notice, accessible venues, and meaningful opportunities for affected communities to raise objections. Digital platforms can also be used to ensure wider participation.⁶⁹

• Strengthening Post-Clearance Monitoring

EIA must not end at clearance. A robust system of environmental audits, periodic reporting, and strict penalties for non-compliance should be instituted. Community-based monitoring, with local stakeholders acting as watchdogs, can enhance accountability.⁷⁰

⁶¹ Kanchi Kohli & Manju Menon, *Elephant in the Room: Reflections on EIA in India*, *Econ. & Pol. Wkly.*, Vol. 45, No. 24 (2010).

⁶² Centre for Science & Environment, *EIA: An Assessment of Reports in India* (2019).

⁶³ *Lafarge Umiam Mining Pvt. Ltd. v. Union of India*, (2011) 7 SCC 338 (India).

⁶⁴ Radhika Krishnan, *Weak Enforcement of EIA Norms in India*, 13 *J. Env't L. & Pol'y* 45 (2017).

⁶⁵ Ministry of Env't, Forest & Climate Change, *Draft Environmental Impact Assessment Notification, 2020*, *Gazette of India* (Mar. 23, 2020).

⁶⁶ The Environment (Protection) Act, No. 29 of 1986, INDIA CODE (1986).

⁶⁷ Shibani Ghosh, *Strengthening Environmental Regulation in India*, 25 *Nat'l L. Sch. India Rev.* 30 (2013).

⁶⁸ Divya Narain, *Transparency in Environmental Decision-Making: A Critique of India's EIA Regime*, 21 *J. Env't L. & Dev.* 65 (2019).

⁶⁹ Meenakshi Raman, *Public Hearings and Environmental Democracy*, 42 *Econ. & Pol. Wkly.* 345 (2007).

⁷⁰ V. Subramanian, *Environmental Auditing and Monitoring in India: Gaps and Challenges*, 14 *Indian J. Env't L.* 110 (2016).

• Incorporating Climate Change Concerns

Current EIA procedures focus narrowly on pollution and resource use. Future reforms should include climate change impact assessments, covering greenhouse gas emissions, carbon footprints, and resilience of projects against extreme weather events.⁷¹

• Leveraging Technology

Modern tools such as remote sensing, GIS mapping, AI-based predictive models, and blockchain for compliance tracking can significantly improve the accuracy and transparency of EIAs.⁷² EIA remains at the heart of environmental governance in India. While it has achieved partial success, its current challenges render it ineffective in many instances. Strengthening institutional independence, ensuring transparency, fostering public participation, and integrating climate concerns are crucial steps forward. The future of environmental protection in India depends on whether EIA evolves from being a “paper tiger” into a powerful legal instrument that genuinely safeguards ecological balance and intergenerational equity.

Recommendations

To strengthen the EIA framework and make it truly effective in protecting the environment, the following reforms are recommended:

1. Legislative Strengthening

Enact comprehensive EIA legislation that consolidates existing notifications, clarifies processes, and incorporates international principles, such as the precautionary principle and the polluter pays principle, as binding obligations.⁵

2. Institutional Reforms

Ensure the independence of Expert Appraisal Committees (EACs) by transparent appointments and conflict-of-interest disclosures.

Create a National Environmental Assessment Authority to oversee EIA quality and monitoring.⁶

3. Improving EIA Reports

Mandate that EIA reports be prepared by independent, accredited bodies monitored by the government, rather than directly by project proponents.

Introduce peer review mechanisms and require full public disclosure of reports before clearance.⁷

4. Strengthening Public Participation

Make hearings inclusive and accessible by providing documents in local languages, ensuring early notice, and facilitating participation of vulnerable groups.

Use digital platforms (e-hearings, online submissions) to expand reach.⁸

5. Monitoring and Compliance

Institutionalize post-clearance monitoring with periodic audits and strict penalties for violations.

Empower local communities and NGOs to function as community watchdogs in monitoring compliance.⁹

6. Climate Change Integration

Expand EIA to include climate risk assessments, carbon footprints, and project resilience against extreme climate events.¹⁰

7. Technological Innovation

Deploy GIS mapping, AI modelling, and blockchain tracking for accurate impact predictions, transparent reporting, and real-time compliance checks.¹¹

CONCLUSION

From the above explanation, it was evident that the Environmental Impact Assessment (EIA) was conceived as a vital instrument to strike a balance between developmental imperatives and environmental sustainability. While it has undoubtedly raised awareness about ecological concerns and introduced a structured process for integrating environmental considerations into project planning, its practical effectiveness remains contested. The frequent dilution of legal safeguards, perfunctory preparation of reports, weak monitoring, and limited public involvement have often reduced the EIA process to a procedural formality rather than a substantive safeguard. Nevertheless, case studies demonstrate that, when implemented rigorously, EIA has the potential to prevent environmentally destructive projects, mandate appropriate mitigation measures, and uphold the principles of sustainable development.

To bridge the gap between “paper and practice,” the EIA framework must be strengthened through stricter compliance mechanisms, independent monitoring, enhanced transparency, and meaningful stakeholder participation. Institutional capacity-building and scientific rigors in environmental studies are equally essential to restore credibility and effectiveness. Ultimately, the success of EIA depends not only on the strength of regulatory frameworks but also on the political will, administrative accountability, and active public engagement in environmental governance. A reformed and genuinely enforced EIA can serve as a powerful tool in protecting the environment, ensuring that development does not come at the irreversible cost of ecological security.

“The EIA process is not just a technical exercise but a democratic instrument for environmental justice.”

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⁷¹ Ruchi Shree, Climate Change and EIA in India: Need for Integration, 18 Env't & Plan. L. Rev. 50 (2021).

⁷² Aditi Verma, Technology in Environmental Governance: GIS, AI, and Blockchain Applications, 11 J. Env't Innovation 77 (2022).