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Evaluating the Efficacy of Environmental Impact Assessment in Conserving Environment and Sustainable Development in India: A Critical Legal and Policy Analysis

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ABSTRACT

Environmental Impact Assessment (EIA) has emerged as a pivotal instrument for integrating environmental considerations into development planning in India. Instituted under the Environment (Protection) Act, 1986 and operationalized through the EIA Notifications of 1994 and 2006, the framework is intended to ensure that potential ecological and social impacts of projects are assessed prior to approval. This paper critically examines the evolution, legal foundations, institutional mechanisms, and practical efficacy of EIA in promoting sustainable development in India. Through doctrinal analysis and case studies—including the Narmada Bachao Andolan, Sterlite Copper plant, POSCO Odisha project, and Delhi Metro expansion—the research highlights how judicial interventions and regulatory oversight have shaped the preventive and participatory dimensions of EIA. Despite its formalization, the EIA process faces significant challenges that undermine its effectiveness. These include procedural inefficiencies, limited technical capacity of state-level authorities, weak enforcement of post-clearance compliance, inadequate public participation, and political-economic pressures that often compromise environmental safeguards. The paper also analyses the controversial Draft EIA Notification, 2020, which proposed retrospective clearances and reduced stakeholder consultation, illustrating the tension between development imperatives and environmental protection. The study concludes that while EIA has contributed to integrating environmental accountability into India's development agenda, its potential remains constrained by systemic gaps. Strengthening institutional capacity, ensuring transparency, enforcing compliance rigorously, incorporating independent third-party review, and codifying judicial principles such as the precautionary approach, polluter pays, and intergenerational equity are essential for enhancing efficacy. By addressing these challenges, EIA can serve as a robust tool to reconcile economic growth with environmental sustainability and social equity, aligning India's development trajectory with global standards of sustainable development.

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I. INTRODUCTION

Environment is the only source of natural resources vital for the human survival. Historically environment has been conserved, protected and even worshipped by human agencies for a variety of ecological, cultural, spiritual, and survival-related reasons. But the turmoil began after the dawn of human civilization and industrialization. Homo sapiens started to exploit the environment as a means to development especially economic, without giving much thought to the consequences of such exploitation. The concept of environmental protection law has historical roots tracing back centuries, but formal and modern environmental laws began taking shape primarily in the 20th century. Some of the earliest forms of environmental protection involved ancient water management and pollution control systems in civilizations like Mesopotamia and Rome. For example, around AD 80, the Roman Senate passed laws to protect the city's clean water supply.[3] In England during the 14th century, laws were enacted to prohibit the burning of coal in London and the disposal of waste into waterways, marking early efforts at environmental regulation. Modern environmental law crystallized significantly with the Industrial Revolution and the increasing recognition of environmental degradation. The first major environmental laws to address pollution and resource protection appeared in the 19th and early 20th centuries, including the UK's Clean Air Act of 1956 following severe air pollution events.[4] Internationally, the first major milestone was the Stockholm Declaration of 1972, after which countries increasingly adopted formal environmental protection legislation.[5]

Environmental sustainability has emerged as a central concern in policy, law, and governance, particularly in countries like India that are balancing rapid economic growth with ecological preservation. The concept of sustainable development, popularized by the Brundtland Commission Report (1987), emphasizes the need to meet present developmental needs without compromising the ability of future generations to meet their own.[6]Within this paradigm, Environmental Impact Assessment (EIA) has become a key legal and administrative tool to anticipate, prevent, and mitigate the adverse environmental consequences of proposed projects.

[3] Sáry, P. (2020). The legal protection of environment in ancient Rome. *Journal of Ancient Environmental Law*. https://ojs3.mtak.hu/index.php/JAEL/article/view/4982

[4] The CMM Group. (2022, October 9). History of air pollution laws Part https://www.thecmmgroup.com/history-air-pollution-part-1/

[5] United Nations. (1972). Stockholm Declaration on the Human Environment. https://www.un.org/en/conferences/environment/stockholm1972

[6] World Commission on Environment and Development. (1987). *Our Common Future*. Oxford University Press.

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EIA aims not only to conserve natural resources and biodiversity but also to integrate environmental concerns into developmental decision-making, thus operationalizing sustainable development at the project level.[7]

Meaning and Objectives of EIA: Environmental impact assessment (EIA) is the evaluation of the effects likely to arise from a major project (or other action) significantly affecting the environment. It is a systematic process for considering possible impacts prior to a decision being taken on whether a proposal should be given approval to proceed. EIA requires, inter alia, the publication of an EIA report describing the likely significant impacts in detail. Consultation and public participation are integral to this evaluation. EIA is thus an anticipatory, participatory environmental management tool.[8] The most immediate purpose of EIA, arising directly from these functions, is to supply decision-makers with an indication of the likely environmental consequences of their actions. The principal aims and objectives of EIA are:

- To provide a detailed description of the proposed activities.
- To improve the planning of major projects by predicting and providing alternatives
- To analyse the primary and secondary environmental impacts.
- To generate alternatives to reduce the adverse impacts of the proposed project
- To provide a process for a participatory planning activity between enterprise, government and community.

Evolution Of the Concept of EIA: Globally the origin of the EIA can be traced back to The National Environmental Policy Act (NEPA), 1969 of the USA**.** This legal instrument required the federal agencies to prepare *Environmental Impact Statements (EIS)* for all major projects affecting the environment. It established the principles of transparency, public participation, and preventive planning, which later influenced global adoption. Later in 1972, the UN Conference in Stockholm (Stockholm Declaration) highlighted the exigency of integration of environmental considerations into development planning. Although EIA was not explicitly mentioned, it inspired countries to adopt similar preventive approaches. During 1980s EIA diffused to New Zealand, Canada, Australia and European Nations and these countries established EIA as an essential environment management tool. Moreover in 1989 The World Bank has made EIA as mandatory requirement to sponsor any project. Finally, The Rio

[7] Glasson, J., Therivel, R., & Chadwick, A. (2013). *Introduction to Environmental Impact Assessment* (4th ed.). Routledge.
[8] Jay, S., Jones, C., Slinn, P., & Wood, C. (2007). Environmental impact assessment: Retrospect and prospect. *Environmental Impact Assessment Review, 27*(4), 287–300. https://doi.org/10.1016/j.eiar.2006.12.001

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Declaration 1992(Agenda 21) reinforced EIA as a tool for sustainable development.[9] Since 2000 to the present era more than 100 countries have formal EIA legislation. EIA has also evolved into Strategic Environmental Assessment (SEA) for policies, plans, and programs, broadening its scope from individual projects to long-term development strategies.

In India, the evolution of EIA started after the Stockholm Declaration, 1972, and India has enacted Water Act, 1974, Air Act, 1981 to control air and water pollution.[10] [11]Environmental clearance procedures were initially ad hoc, focusing on large river valley projects. In 1980s, the Parliament has enacted The Environment (Protection) Act, 1986, which empowered the Central Government to take all necessary steps to protect and conserve the environment.[12] In pursuance of the Act, the Department of Environment issued guidelines for environmental clearance of large projects, requiring environmental appraisal in 1986. The first EIA Notification, 1994 under the Environment (Protection) Act made EIA legally mandatory for 29 categories of projects.[13] This was a landmark moment, institutionalising EIA in India. It introduced the requirement of an Environmental Management Plan (EMP) but did not mandate public hearing. In 2006 to make the EIA more comprehensive The EIA Notification, 2006, was released which replaced the 1994 rules. This Notification made categorisation of projects into Category A (national-level clearance) and Category B (state-level clearance). Public Consultation became mandatory (except for certain projects). Introduction of scoping, Terms of Reference, appraisal by Expert Committees, and detailed procedural stages. This aligned India with global EIA best practices.[14] In 2010, National Green Tribunal (NGT) was established which became a vital forum for scrutinising EIAs and ensuring compliance. Courts and NGT played a strong role in reinforcing principles of precautionary approach, polluter pays, and sustainable development.[15]

Process of EIA: The way in which an EIA is carried out is not rigid: it is a process comprising a series of steps. These steps are outlined below and the techniques more commonly used in EIA are described in some detail in the section *Techniques*. The main steps in the EIA process are:

[9] Jay, S., Jones, C., Slinn, P., & Wood, C. (2007). Environmental impact assessment: Retrospect and prospect. *Environmental Impact Assessment Review, 27*(4), 287–300. https://doi.org/10.1016/j.eiar.2006.12.001
[10] Water Act, 1974
[11] Air Act, 1981
[12] The emergence of Environmental Impact Assessment in India. (n.d.). Centre for Accountability & Governance (CAG). Retrieved from https://www.cag.org.in/blogs/emergence-environmental-impact-assessment-india
[13] Centre for Science and Environment. (n.d.). *Understanding EIA*. CSE India. Retrieved from https://www.cseindia.org/understanding-eia-383
[14] The EIA Notification, 2006
[15] NGT Act, 2010

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- Screening: often results in a categorization of the project and from this a decision is made on whether a full EIA is to be carried out.
- Scoping: is the process of determining which are the most critical issues to study and will involve community participation to some degree. It is at this early stage that EIA can most strongly influence the outline proposal.
- Prediction and mitigation: Detailed prediction and mitigation studies follow scoping and are carried out in parallel with feasibility studies.
- Managing and Monitoring: The main output report is called an *Environmental Impact Statement* and contains a detailed plan for managing and monitoring environmental impacts both during and after implementation.
- Audit: Audit of the EIA process is carried out some time after implementation. The audit serves useful feedback and learning function.[16]

II. THE LEGAL AND INSTITUTIONAL FRAMEWORK REGARDING EIA IN INDIA

India's EIA framework is also informed by its obligations under international environmental law. Stockholm Declaration, 1972 and Rio Declaration, 1992 (Principle 17) recognize EIA as an essential tool for environmental management which had been ratified by India. Convention on Biological Diversity (1992) requires assessments of projects likely to have significant adverse impacts on biodiversity These commitments have influenced domestic policy, particularly in aligning the 2006 Notification with international best practices.

Constitutional Basis: The foundation of environmental governance in India, including EIA, lies in the Constitution. Article 21, interpreted by the Supreme Court, guarantees the right to a wholesome environment as part of the Right to Life.[17] Articles 48-A[18] and 51-A(g)[19], introduced by the 42nd Constitutional Amendment (1976), obligate the State to protect and improve the environment and impose a fundamental duty on citizens to safeguard the natural environment. Through expansive interpretation, the judiciary has embedded environmental protection, including the requirement of impact assessments, within the fabric of constitutional rights and duties.

Statutory Framework: The principal legal framework for EIA in India is derived from the Environment (Protection) Act, 1986 (EPA), enacted in the aftermath of the Bhopal Gas

[16] Food and Agricultural Organization, available at; https://www.fao.org/4/v8350e/v8350e06.htm
[17] Constitution of India, Art. 21
[18] Constitution of India, Art. 48A
[19] Constitution of India, Art. 51A (g)

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Tragedy. The Environment (Protection) Act, 1986 provides the central government with broad powers to protect the environment, including the authority to impose restrictions on industrial operations and prescribe procedures for environmental clearance. Then the Ministry of Environment, Forest and Climate Change (MoEFCC) operationalise EIA through subordinate legislation. EIA Notification, 1994 was the first formal step making EIA mandatory for 29 categories of projects.[20]

To make EIA more comprehensive EIA Notification, 2006 was released which refined procedures by introducing project categorisation (A and B), scoping, public consultation, and appraisal by Expert Committees.[21] The category A shall take prior Environment Clearence from Central Government, The Ministry of Environment and Forests. The category B shall take prior Environment Clearence from State Environment Impact Assessment Authority (SEIAA).

Expert Appraisal Committees (EACs) at the Central Government and SEACs at the State or the Union territory level shall screen, scope and appraise projects or activities in Category 'A' and Category 'B' respectively. EAC and SEAC's shall meet at least once every month and shall function on the principle of collective responsibility.

The environmental clearance process for new projects will comprise of a maximum of four stages, all of which may not apply to cases as set forth below in this notification. These four stages in sequential order are: -

Stage (1) Screening (Only for Category 'B' projects and activities): it determines whether or not the project or activity requires further environmental studies for preparation of an Environmental Impact Assessment (EIA) for its appraisal prior to the grant of environmental clearance depending up on the nature and location specificity of the project

Stage (2) Scoping: it includes addressing all relevant environmental concerns for the preparation of an Environment Impact Assessment (EIA) Report in respect of the project or activity for which prior environmental clearance is sought.

Stage (3) Public Consultation: refers to the process by which the concerns of local affected persons and others who have plausible stake in the environmental impacts of the project or activity are ascertained with a view to considering all the material concerns in the project or activity design as appropriate.

Stage (4) Appraisal: Appraisal means the detailed scrutiny by the Expert Appraisal Committee or State Level Expert Appraisal Committee of the application and other documents like the

[20] EIA Notification, 1994
[21] EIA Notification, 2006

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Final EIA report, outcome of the public consultations including public hearing proceedings, submitted by the applicant to the regulatory authority concerned for grant of environmental clearance.[22]

Recently Draft EIA Notification, 2020, proposed changes to allow ex-post facto clearances and reduce public participation. This draft faced massive public and expert criticism for diluting environmental safeguards.[23] Other sector-specific statutes also intersect with EIA: Wildlife Protection Act, 1972 and Forest Conservation Act, 1980: Mandate clearances for projects impacting forests and wildlife. Water (1974) and Air (1981) Acts which requires consent from Pollution Control Boards, often integrated with EIA processes.

Institutional Framework: The institutional architecture of EIA in India involves multiple agencies at central, state, and judicial levels.

- Ministry of Environment, Forest and Climate Change (MoEFCC): this is the nodal authority for environmental clearance at the central level. It issues guidelines, amends notifications, and supervises compliance.[24]
- Expert Appraisal Committees (EACs)**:** It is Sector-specific committees constituted by MoEFCC. Appraise Category A projects and recommend approval or rejection based on EIA reports, Terms of Reference (ToR), and public consultation outcomes.[25]
- State Environment Impact Assessment Authorities (SEIAAs) and State Expert Appraisal Committees (SEACs): it was established under the 2006 Notification for Category B projects which provides decentralised decision-making, though often constrained by limited capacity and political influence.[26]
- Pollution Control Boards (CPCB and SPCBs): it enforces pollution-control laws and issue consents, indirectly linked to EIA processes. It also monitors compliance with environmental standards during and after project implementation.[27]

[22] EIA, 2006, available at: https://dest.hp.gov.in/sites/default/files/eiaso1533_A1b.pdf
[23] The Conundrum of Ecology v. Economy: Analysis of the EIA Draft 2020. (2020, July). Law School Policy Review, available at: https://lawschoolpolicyreview.com/2020/07/09/the-conundrum-of-ecology-v-economy-analysis-of-the-eia-draft-2020/
[24] Ministry of Environment, Forest and Climate Change (MoEFCC). (n.d.). *About the Ministry*. Government of India, available at: https://moef.gov.in
[25] Ministry of Environment, Forest and Climate Change (MoEFCC). (2006). *EIA Notification, 2006*. Government of India, Gazette of India, available at: https://moef.gov.in
[26] Central Pollution Control Board (CPCB). (n.d.). *About CPCB*. Government of India, available at: https://cpcb.nic.in
[27] State Pollution Control Boards (SPCBs). (n.d.). *Functions of SPCBs*. Government of India, available at: https://cpcb.nic.in/state-pollution-control-boards/

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- National Green Tribunal (NGT): it was established under the NGT Act, 2010. It functions as a specialised forum for environmental disputes, including challenges to EIAs and environmental clearances. It has delivered landmark rulings emphasising the principles of precaution, polluter pays, and sustainable development.[28]

Judicial Framework: Judicial pronouncements have significantly shaped the EIA regime. The Supreme Court and the NGT have consistently held that environmental clearance is not a procedural formality but a constitutional safeguard under Article 21. Key principles embedded through case law include:

- Precautionary Principle: Projects with potential environmental risks require strict scrutiny.[29]
- Polluter Pays Principle: Project proponents are liable for ecological damage.[30]
- Inter-generational Equity: Resources must be conserved for future generations.[31]
- Cases such as *Vellore Citizens' Welfare Forum v. Union of India (1996)*[32] and *M.C. Mehta v. Union of India* series underscore the judiciary's proactive stance. More recently, the Supreme Court in *Alembic Pharmaceuticals Ltd. v. Rohit Prajapati (2020)*[33] invalidated ex-post facto clearances, a view reaffirmed in 2025, when the Court struck down retrospective clearances proposed under the Draft EIA Notification.

III. EVALUATING THE EFFICACY OF EIA

The practical application and impact of Environmental Impact Assessment (EIA) in India can best be understood through real-life examples. Over the past three decades, EIAs have played a crucial role in guiding development projects, balancing economic growth with environmental protection, and ensuring public participation. While some projects highlight the effectiveness of rigorous EIA implementation, others reveal gaps in compliance, transparency, and stakeholder engagement. The following case studies illustrate the successes, challenges, and judicial interventions that have shaped the EIA framework in India.

- **Lafarge Umiam Mining Pvt. Ltd. v. Union of India (2011) – Meghalaya Mining Case:** In this case, Lafarge Umiam Mining Pvt. Ltd., a subsidiary of a French cement company,

[28] National Green Tribunal (NGT). (2010). *National Green Tribunal Act, 2010*. Government of India. https://www.greentribunal.gov.in
[29] *M.C. Mehta v. Union of India*, AIR 1987 SC 1086. Supreme Court of India
[30] ibid
[31] ibid
[32] *Vellore Citizens' Welfare Forum v. Union of India*, AIR 1996 SC 2715. Supreme Court of India.
[33] *Alembic Pharmaceuticals Ltd. v. Rohit Prajapati & Ors.*, (2020) 17 SCC 157. Supreme Court of India.

sought clearance for limestone mining in Meghalaya's forest-rich areas. Environmental groups opposed the project, citing deforestation, ecological imbalance, and threats to tribal communities' rights. The Supreme Court allowed the mining project but imposed strict compliance with environmental safeguards, including adherence to EIA conditions, monitoring by the Ministry of Environment, Forest and Climate Change (MoEFCC), and ensuring local community participation. The judgment balanced economic development with environmental protection and social justice, emphasizing that clearances could not be granted at the cost of fragile ecosystems and rights of indigenous.[34]

- **Alembic Pharmaceuticals Ltd. v. Rohit Prajapati (2020) – Ex-Post Facto Clearance:** The case arose when several pharmaceutical and chemical companies in Gujarat were operating without prior environmental clearance and later sought ex-post facto approvals. The Supreme Court in *Alembic Pharmaceuticals Ltd. v. Rohit Prajapati* held that such post-facto environmental clearances are contrary to law. The Court observed that environmental clearance is meant to be a preventive safeguard and cannot be granted as a remedial measure after damage has occurred. This landmark ruling reaffirmed the principle of precaution and underscored that the EIA process is an essential tool for sustainable development. The judgment has had far-reaching implications for industries operating without compliance, ensuring accountability and deterrence.[35]

- **POSCO Steel Project, Odisha (2005–2017):** The $12 billion POSCO steel project in Odisha, proposed by South Korean multinational POSCO, was one of India's largest foreign direct investment ventures. However, it faced massive opposition due to concerns of large-scale deforestation, displacement of communities, and inadequate environmental assessments. Though initially granted environmental clearance, the Ministry of Environment later suspended approvals due to violations of the **Forest Rights Act, 2006** and lapses in the EIA process. After years of protests, litigation, and global criticism, POSCO officially withdrew from the project in 2017. This case highlights how flawed EIAs and lack of local community consent can derail even mega-projects, reinforcing the need for transparency and inclusiveness in environmental governance.[36]

- **Sterlite Copper Plant, Tamil Nadu (2018 Closure):** The Sterlite copper smelting plant in Thoothukudi, Tamil Nadu, operated by Vedanta, became the center of intense environmental

[34] Supreme Court of India. (2011). *Lafarge Umiam Mining Pvt. Ltd. v. Union of India*, (2011) 7 SCC 338.
[35] Supreme Court of India. (2020). *Alembic Pharmaceuticals Ltd. v. Rohit Prajapati*, (2020) 17 SCC 157.
[36] Amnesty International. (2017, July 17). *India: POSCO withdrawal a victory for people power and environmental justice*, available at: https://www.amnesty.org

and social conflict. Local communities accused the plant of causing severe air and water pollution, health problems, and ecological degradation. The EIA process was criticized for inadequate public consultation and non-disclosure of vital environmental risks. In 2018, violent protests erupted, leading to the death of 13 protestors in police firing. Following public outcry, the Tamil Nadu government ordered the permanent closure of the plant. This case underscores the failures of EIA compliance and public engagement, showing that lack of transparency and accountability in environmental decision-making can escalate into serious social unrest.[37]

- **Delhi Metro Expansion (2002 onwards) – A Positive Example:** Unlike most contested projects, the Delhi Metro Rail Corporation (DMRC) integrated EIA into its planning and implementation phases. For Phase III expansion, comprehensive EIAs were conducted, focusing on noise pollution, air quality, groundwater impacts, and urban ecology. Mitigation measures such as dust control, noise barriers, tree transplantation, and traffic management were implemented to minimize environmental harm. This project is often highlighted as a success story of sustainable infrastructure development in India, where proactive use of EIA ensured a balance between rapid urban mobility needs and environmental protection. It demonstrates the constructive role of EIA when applied transparently and scientifically.[38]

IV. PRINCIPAL CHALLENGES UNDERMINING EIA EFFICACY

Despite the institutionalization of Environmental Impact Assessment (EIA) in India, several systemic and operational challenges continue to undermine its effectiveness as a tool for sustainable development. One of the foremost issues is lack of transparency and public participation. Although the EIA Notification, 2006 mandated public consultation for most Category A and B projects, procedural lapses and limited access to project information often restrict meaningful engagement. Communities, particularly marginalized groups, may remain unaware of proposed developments or their potential environmental and social impacts, weakening the participatory dimension central to EIA's preventive approach.

A second critical challenge is regulatory and institutional capacity constraints. State Environment Impact Assessment Authorities (SEIAAs) and State Expert Appraisal Committees (SEACs) often lack sufficient technical expertise, trained personnel, and financial resources to evaluate complex projects thoroughly. This limitation can result in superficial appraisals, reliance on proponent-submitted data, or undue influence from political and industrial

[37] The Hindu. (2018, May 29). *Sterlite Copper plant closure: TN govt orders permanent shut down*, available at: https://www.thehindu.com

[38] Delhi Metro Rail Corporation (DMRC). (2012). *Environmental Impact Assessment Report for Phase III*. New Delhi: DMRC

stakeholders, eroding the objectivity of the assessment process. Similarly, monitoring post-clearance compliance by Pollution Control Boards (CPCB and SPCBs) is frequently inadequate, leading to environmental violations going unchecked.[39]

Procedural delays and bureaucratic inefficiencies also compromise EIA efficacy. Cumbersome multi-tiered approval mechanisms, overlapping jurisdiction between central and state authorities, and delays in appraisal committee meetings can slow project approvals or enforcement actions. In some cases, these delays incentivize attempts to bypass the EIA process, including seeking ex-post facto clearances, which the Supreme Court has repeatedly invalidated (*Alembic Pharmaceuticals Ltd. v. Rohit Prajapati*, 2020).[40]

Another challenge is quality and reliability of EIA reports. Studies have highlighted inconsistencies, data gaps, and inadequate baseline assessments in many EIAs. Proponent-prepared reports may understate environmental risks, omit social impacts, or provide insufficient mitigation strategies, reducing the EIA to a procedural formality rather than a robust decision-making tool.

Finally, political and economic pressures often undermine environmental safeguards. High-value infrastructure, mining, or industrial projects sometimes receive implicit prioritization over environmental concerns, diluting precautionary principles and inter-generational equity objectives. The controversy over the Draft EIA Notification, 2020, which proposed retrospective clearances and reduced public consultation, exemplifies the persistent tension between development imperatives and environmental protection.

Addressing these challenges requires strengthening institutional capacity, ensuring transparency, enforcing compliance rigorously, and fostering genuine public participation. Without such reforms, the EIA process risks becoming a procedural formality, compromising its role in safeguarding India's environment and promoting sustainable development.

V. CONCLUSION AND RECOMMENDATIONS: LEGAL AND POLICY REFORMS

Environmental Impact Assessment (EIA) has emerged as a cornerstone of environmental governance in India, providing a structured mechanism to evaluate potential environmental and social impacts of development projects. Over the past three decades, the EIA process has evolved from ad hoc clearances to a formalized, legally mandated framework under the Environment (Protection) Act, 1986 and the EIA Notifications of 1994 and 2006. Judicial

[39] Centre for Science and Environment. (n.d.). *Understanding EIA*, available at: https://www.cseindia.org/understanding-eia-383

[40] Supreme Court of India. (2020). *Alembic Pharmaceuticals Ltd. v. Rohit Prajapati*, (2020) 17 SCC 157.

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interventions, exemplified by landmark cases such as *Vellore Citizens' Welfare Forum v. Union of India* (1996) and *Alembic Pharmaceuticals Ltd. v. Rohit Prajapati* (2020), have reinforced the principles of precaution, polluter pays, and intergenerational equity. Case studies, including the POSCO Odisha project, Sterlite Copper plant, and Delhi Metro, illustrate the practical strengths and shortcomings of the EIA framework in balancing developmental imperatives with environmental protection.

Despite its successes, the efficacy of EIA is undermined by systemic challenges, including procedural gaps, weak institutional capacity, inadequate monitoring, and limited public participation. These issues, compounded by political and economic pressures, risk reducing EIA to a mere compliance exercise rather than a robust preventive instrument. The controversy surrounding the Draft EIA Notification, 2020, particularly the proposals for retrospective clearances and reduced public consultation, highlights the fragility of environmental safeguards in the face of competing development agendas.

To strengthen the legal and policy framework governing EIA, several reforms are recommended.

- First, enhancing institutional capacity is critical: SEIAAs, SEACs, and regulatory bodies must be equipped with technical expertise, adequate staffing, and independent operational authority to conduct rigorous assessments.
- Second, transparency and public participation must be expanded through mandatory disclosure of project documents, longer consultation periods, and digital platforms for stakeholder feedback, ensuring inclusive decision-making.
- Third, strict post-clearance monitoring and enforcement by CPCB, SPCBs, and MoEFCC should be institutionalized, with clear penalties for non-compliance to reinforce the preventive intent of EIA.
- Fourth, quality assurance mechanisms such as independent third-party review of EIA reports can mitigate the risk of biased or incomplete assessments.
- Finally, legal reforms should explicitly prohibit ex-post facto clearances and codify the principles established by the judiciary, thereby reinforcing the constitutional mandate under Article 21 for a wholesome environment (Constitution of India, art. 21).

In conclusion, EIA remains an indispensable instrument for sustainable development in India. Its effectiveness, however, depends on a combination of rigorous legal enforcement, technical competence, stakeholder engagement, and political will. By addressing existing gaps and

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implementing the proposed reforms, India can ensure that EIA not only mitigates environmental harm but also promotes equitable, sustainable, and participatory development.

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