

# Impact of Judicial Doctrine and Geo Spatial Technologies in Refinement of Environmental Impact Assessment Laws and Policies in India

M.Z.M. Nomani, Mudassir Rasool Wani, Madiha Tahreem



**Abstract:** *Environmental Impact Assessment (EIA) provides the perspective of strategic rebuilding of environment and sustainable development. The Constitution of India, 1950; Environment Protection Act, 1986 and EIA Notification, 2006 endeavours to protect and improve environment by envisaging environmental clearance of projects on the basis of environmental assessment report (EAR), environmental management plan (EMP), and public hearing. The social and strategic impact assessment (SIA) in EIA law in India is in constant experimentations at judicial, technological and procedural refinements. However the population growth, urbanization and alteration in land use pattern necessitated for application of geospatial technologies viz; remote sensing, Geographical Information Systems (GIS), and Global Positioning Systems (GPS) and Habitat Suitability (HS) models are employed for EIA process. The paper synthesizes the need for judicial and technological refinements in making EIA laws and governance an effective tool for sustainable development and equity in India.*

**Keywords:** *Environmental Impact Assessment, Social Impact Assessment, Strategic Impact Assessment, Judicial & Technological Refinements, Global Positioning System & Geographic Information System, Sustainable Development & Equity.*

## I. INTRODUCTION

*Environmental Impact Assessment* provides a perspective and paradigm of strategic rebuilding of environmental laws and policies in India for the promotion of sustainable development.[1] The objective of EIA is to foresee the potential environmental problems that would arise out of a proposed development and address them in the project's planning and design stage.[2] The EIA process allows meaningful communication among multi stakeholders such as the project proponent, the regulatory agencies and civil society. The Ministry of Environment, Forest & Climate Change (MoEF&CC) as an implementing agency in India spells out the integration of EIA integrates the environmental concerns in the developmental activities right at the time of initiating for preparing the feasibility report. *The Constitution of India, 1950*:[3]

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*Environment Protection Act, 1986 and EIA Notification, 1994, EIA Notification, 1997 and EIA Notification, 2006* endeavours to protect and improve environment by envisaging environmental clearance of projects on the basis of environmental assessment report, and environmental management plan, and public hearing. Though India has a number of national policies governing environmental management, including the *National Policy on Pollution Abatement, 1992 (NPPA)* and the *National Conservation Strategy, 1992 (NCS)*, *Policy Statement on and Development Environment, 1992 (PSED)* and *National Environment Policy, 2006*. While these national policies are not judicially enforceable, they serve as guiding principles for the central and state governments for environmental compliance. The social and strategic impact assessment in EIA law is also in the constant experimentation in India. [4] The EIA laws and governance thus requires an integrative methodology of judicial, administrative and scientific refinements. The paper synthesizes the judicial and technological refinements by articulating the legal incorporation of geospatial technologies in EIA regime.

## II. MATERIAL & METHODS

This jurisprudential and technological study deepens understanding of the EIA law and governance in the broader objectives of the *Esposo Convention, 1991; Constitution of India, 1950; Environment Protection Act, 1986 and EIA Notification, 1994, EIA Notification, 1997 and EIA Notification, 2006*. The comparative EIA law is based on established canons of statutory interpretation.[5] These laws are studied under Brint and Williams' pragmatism in techno-legal context.[6] The qualitative and quantitative research in the framework of Maxwell's qualitative research design is also adopted in making EIA laws and governance an effective tool for sustainable development and equity in India.[7]

## III. RESULTS

The EIA law in India has recent addition to environmental and sustainability law because of late enactment of *Environment Protection Act, 1986* in post damage control exercise of Bhopal like catastrophe in India.[8] It took almost eight years to cull out the framework of EIA norm in 1994 more so in the light of Narmada controversy and Supreme Court's stay order to construction of the height of the dam[Writ Petition (C) No. 319 of 1994] in the light of *Bradford Morse Committee Report, 1992*.[9] Since then the EIA precept and practice is subjected to constant experimentations and culminated in to *EIA Notification, 2006*.[10]

**Policy Framework on EIA Management:** The NCS, NPPA and PSED provide an overarching policy framework on EIA management by the MOEF&CC. The NPPA adopts market base instrument for environmental compliance to supplement command and control approaches to pollution abatement. The policy adopts the principles of prevention of pollution at source, adoption of best available technology; the polluter pays principle, and public participation in decision making. The *National Environment Policy, 2006* (NEP) having objectives of include conservation of critical environmental resources, intra-generational equity, livelihood security for poor, integration of environment in economic and social development, efficiency in environment resource use, environmental governance, and enhancement of resources for environmental conservation is the novel manifestation of EIA policy. The policy promotes mainstreaming of environmental concerns into all development activities by advocating important environmental principles and identifying regulatory and substantive reforms. With respect to regulatory reforms, the NEP recommends revisiting the policy and legislative framework to 'develop synergies among relevant statutes and regulations, eliminate obsolescence, and amalgamate provisions with similar objectives.' This embarks on the integration of legal, judicial and geo-spatial technologies in EIA governance in India. The NEP also identifies a new framework for legal action that includes application of a mix of civil and criminal sanctions, adoption of innovative economic instruments, and public-private partnerships in strengthening EIA compliance and enforcement.[11]

**Evolution of EIA Law:** The *EIA Notification, 1994* institutionalized EIA law under Section 3 of the *Environment Protection Act, 1986* by introducing EAR and EMP for 29 designated projects. Rule 5 of the *Environment (Protection) Rules, 1986* obligated for an EMP for environmental clearance. The *EIA Notification, 1997* introduced SIA by way of public hearings. The *EIA Notification, 2006* superseded the 1994 and 1997 notifications and re-engineered environmental clearance process by adoption of best practices including geo spatial technologies in an oblique manner. The State Level Environment Impact Assessment Authority (SEIAA) and State Level Expert Appraisal Committee (SEAC) adopted EIA on the basis of potential impact than that of investment criteria. [12] This is supplemented by *National Environment Policy, 2006* having integration of economic and social and sustainable development. [13] The decentralization of regulatory functions to State level Environment Impact Assessment Agencies (SEIAAs) to regulate small scale projects (Category 'B') by making EIA process more federally sound.[14]

Although the final regulatory approval would be decided by the MoEF&CC or the concerned SEIAA, they in turn were to base their approvals on the recommendations of the SEAC and the Expert Appraisal Committee (EAC) functioning in the MoEF&CC. The State Pollution Control Boards (SPCB) or the Union Territory Pollution Control Committee (UTPCC) was given the responsibility for conducting the public hearing by taking SIA in project cycle. According to Ministry, the Notification is a path breaking process and is comparable to the best practices followed internationally but the scientific ecosystem and geo-spatial technologies are conspicuously missing in legal scheme. The important changes include introduction of

screening and scoping of the project proposals for the identification of the actual environmental priorities without asking for irrelevant and time consuming studies. It is deplorable to mention that the changes proposed to the *EIA Notification, 1994* remained unaddressed in the *EIA Notification, 2006* in simplifying the process of EIA clearance than that of compounding the complications for regulators and implementers.

**Judicial Annihilation of EIA Process:** The judicial annihilation of EIA process is deeply embedded in to the minority opinion of Justice S.P.Bharucha in Narmada judgment of Supreme Court in 2000 where he emphasized that the Narmada Project should go under full scale EIA under *EIA Notification, 1994 de novo*. The administrative fairness of EIA process revisited in wednesbury review of EIA law in *Prof.M.V.Nayudu Case* [2000(3) SCALE 354] are followed thereafter in numerous judgments of Supreme Court, High Courts and National Green Tribunal (NGT). In *Sterlite Industries (India) Ltd. Case* [AIR 2013 SC 3231] the Supreme Court discussed the specific grounds on which administrative action involving the grant of environmental approval could be challenged. In *Gram Panchayat Navlakh Umbre Case* [Judgment of Bombay High Court on June 28,2012] the Bombay High Court held that the 'decision making process of those authorities besides being transparent must result in a reasoned conclusion reflective of a due application of mind, diverse concerns of project in just and proper manner.' In *Utkarsh Mandal Case* [on November 26, 2009] the Delhi High Court held that the EAC was bound to disclose the reasons underlying its decision following the principle enunciated by the Supreme Court for quasi-judicial, administrative bodies and tribunals. In *Samata and Forum of Sustainable Development Case* [Appeal No. 9/2011, NGT Judgment Dated 20 April, 2011], the NGT Chennai Bench held that 'it is essential that the views, opinions, comments and suggestions made by each and every member of the committee are recorded in a structured manifest/ format. In *Adivasi Majdoor Kisan Ekta Sangathan Case* [Appeal No. 3/2011, NGT Judgment Dated April 20, 2011] the NGT, Principal Bench, New Delhi held that the public hearing should be prepared in the local language and record the opposition of people. These judgments led to the procedural refinements in appraisal process with greater probity, transparency and accountability in EIA law compliance.

#### IV. IV. DISCUSSION

**Refinement in EIA Process:** The *EIA Notification, 2006* has altered the basic parameters of environmental clearance by introducing Prior Environmental Clearance (PEC) process for expansion or modernization or change of product mix in existing projects. The law regarding PEC has opened opportunities for *ex post facto* EIA clearance and streamlining of the regulatory EIA compliance within 45 days. The PEC process for new projects comprises four major stages such as screening, scoping, public consultation and appraisal in sequential order. The stage of screening is made compulsory for only for category 'B' projects and activities. In the second stage of 'scoping', the EAC looks into EIA dimension of the project. This is followed by the stage of public consultation, appraisal and scrutiny.

The deliberate concealment, misleading information and suppression of material fact shall make the application liable for rejection and cancellation of project. This is pivotal because EIA involves scarce resources of ground water, forestry, agriculture, fisheries, tourism and minerals. The provision is helpful in scoping to environmental pollution in man-made land uses. The forecasting of the areas susceptible to natural hazard of earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions are also predicted by *EIA Notification, 2006*.

**Judicial Doctrines & EIA Process:** The analysis of judicial doctrines in EIA process is directed against the illegality, irrationality and procedural impropriety. The granting of environmental approval by the competent authority would also be grounds for illegality. The principles of wednesbury review, doctrine of proportionality, reasonableness, fairness and equitableness are applied to construct the right to environment. [15] The wednesbury principle means that only an administrative decision that is unreasonable to an extreme degree can be brought under the legitimate scope of judicial review. The principle is generally considered as a reason for courts not to interfere in administrative body decisions. However the non applicability of the principle would imply that courts will be less hesitant in interfering in such decisions. Secondly the procedural breach has to be of a mandatory requirement in the procedure. This is frequently used in EIA law in failure of administrative authority to actively consider all aspects of sustainable development. In *Deepak Kumar Case* the Supreme Court underlined that state governments should be discouraged from granting a mining license/lease to ensure sustainable mining. Further, the role of private expert bodies and consultants conducting the EIA by furnishing of false information deemed to be professional misconduct and attracts strict action. In *Orissa Mining Corporation Ltd. Case*, the Supreme Court aptly concluded that the 'present mechanism under the *EIA Notification, 2006* is deficient and an independent, objective and transparent appraisal and approval of the projects for environmental clearances is need of hour.' [16]

**Geographical Information Systems:** Under this background, it is realized that the conventional way of EIA study is technologically obsolete. There is need of geo-spatial technology like remote sensing, GIS, and GPS to fulfill the mandate of Principle 17 of the Rio Declaration, 1992 which states that EIA as a national instrument shall be undertaken for the proposed activities that are likely to have significant adverse impact on the environment and are subject to a decision of a competent national authority. The substantive dimensions of EIA provided under international conventions, national or local legislation encompasses the following ecological and cultural landscape, eco-sensitive zones, wetlands, coastal zone, biospheres, mountains, forests. All these entities are germane because the environmental assessment is a prediction about potential impacts involving baseline information on land cover, vegetation pattern, geomorphology, hydrogeology, drainage pattern, air, water, and noise quality, socio-economics, by advanced GIS in spatial and temporal context. In drawing up EMP, catchment-treatment plans, compensatory afforestation activities, resettlement and rehabilitation activities, land reclamation and temporal monitoring, the satellite remote-sensing data have been instrumental in site selection, loss of agriculture/forest lands due to project activities, route alignment for power grids/pipe lines,

ecological monitoring of thermal power plants, assessment of mining impacts, submergence area studies, impacts on wetlands are to be taken in to cognizance.

**Habitat Suitability(HS) Studies:** Thus the GIS approaches in EIA for the first time employed for dam building [17] on Thames river yielding excellent results in landscape and vegetation in pre-EIA and post EIA phase of developmental cycle.[18] Thereafter there has been constant refinement in the GIS approaches in EIA which notably includes initial environmental examination (IEE), monitoring and interpretation of baseline data, identifying and analysing project alternatives (geographic location/site selection, overall design and choice of technology, mapping of data during monitoring and auditing, helping in decision-making or policy formulation and environmental impact auditing. The use of geospatial technology in EIA of wildlife and HS studies are helpful in predicting species spatial distribution and habitat requirements have become prominent tools in wildlife management is accurate in prediction of species based environmental variables. [19] The use of HS models by the U.S Fish and Wildlife Service, 1983 for Coho Salmon, [20] Sub-Saharan Africa, IUCN red listed species,[21] and spatial distribution of gaur in Chandoli tiger reserve are pointer to this effect. [22] Thus the HS Studies in EIA will be fruitful to heritage sites, defence installations inland, national boundaries coastal, marine and underground waters.

## V. CONCLUSION

The EIA process in India faces several critical challenges of transparency, accountability and public participation. The Court's interventions to address these challenges reflected in establishment of national environmental regulator to oversee the EIA process. The piecemeal nature of policy reforms in institutional framework will not be lasting unless the synthesis of regulatory and scientific techniques is insulated deeply in EIA governance in India. The use of satellite images in EIA has the advantages of recording inaccessible and larger area in capturing of overall characteristics without duplication of the data. In recent years, geo-spatial technology like remote sensing, GIS, GPS and HS models gained currency and legitimacy. Therefore, the judicial indoctrination in EIA jurisprudence alone cannot alter the paradigm. There is an urgent need of judicial and geo-spatial synthesis for an effective EIA law and governance and sustainable development regime in India.

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