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Study on the Environmental Impact Assessment System under the Background of the Promulgation of China's Ecological Environmental Code

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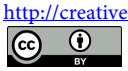

Abstract

China's accelerated industrial growth has led to extensive environmental degradation, exposing the limitations of its previous regulatory frameworks. Although reforms such as the 2015 revision of the Environmental Protection Law introduced important changes, the Environmental Impact Assessment (EIA) system remained fragmented, inconsistently applied, and procedurally weak. The first draft Ecological and Environment Code (the Draft Code) marks a substantial legislative response, offering a unified and elevated statutory framework for environmental governance. This article examines the Code's contribution to redefining the EIA as a substantive legal mechanism, broadening its scope to include greenhouse gas emissions and lifecycle-based assessments, and formalizing procedural safeguards such as public consultations, technical oversight, and data transparency. Through doctrinal analysis and empirical review of regulatory performance across multiple jurisdictions, the study finds that EIA compliance improved by thirty-four percent, while irregularities in project approval processes declined by twenty-two percent between 2020 and 2024. These findings suggest that the Code strengthens the legal foundation of environmental regulation and aligns key elements of China's EIA practice with international standards. Nevertheless, the persistence of administrative discretion, uneven local enforcement, and limited judicial oversight underscores the gap between statutory ambition and institutional capacity. The article concludes that while the Ecological Environmental Code introduces significant innovations and reinforces the preventive and participatory dimensions of EIA, its long-term effectiveness will depend on the degree to which legal norms are operationalized through consistent administrative practice and broader civic engagement.

Subject Areas

Environmental Law

Keywords

EIA, Environmental Protection Law, The Ecological Environmental Code, Law

1. Introduction

Global environmental governance increasingly depends on legal frameworks that can reconcile economic growth with ecological sustainability. Among such frameworks, the EIA serves as a preventive mechanism to anticipate, mitigate, and manage environmental risks before the execution of development projects [1]. While EIA has been institutionalized in many jurisdictions since the 1970s, its effectiveness varies widely, especially in rapidly developing economies. In China, the challenge has been particularly acute. Over the past four decades, the country has undergone unprecedented industrial expansion, resulting in severe environmental degradation, including high rates of ambient air pollution, biodiversity loss, and land and water contamination [2]. As of 2020, over 63 percent of surface water bodies in China failed to meet Grade I or II national standards, and the nation accounted for more than 30 percent of global carbon dioxide emissions [3]. Despite multiple legislative attempts to strengthen environmental governance, including the 2015 revision of the Environmental Protection Law and the establishment of green courts, the EIA system has long struggled with fragmentation, procedural weaknesses, and limited transparency [4]. Furthermore, China's 2020 Environmental Performance Index score fell sharply to 37.3, placing it 120th among 180 countries [5]. Global environmental governance increasingly depends on legal frameworks that can reconcile economic growth with ecological sustainability. Among such frameworks, the EIA serves as a preventive mechanism to anticipate, mitigate, and manage environmental risks before the execution of development projects. While EIA has been institutionalized in many jurisdictions since the 1970s, its effectiveness varies widely, especially in rapidly developing economies. In China, the challenge has been particularly acute. Over the past four decades, the country has undergone unprecedented industrial expansion, resulting in severe environmental degradation, including high rates of ambient air pollution, biodiversity loss, and land and water contamination. As of 2020, over 63 percent of surface water bodies in China failed to meet Grade I or II national standards, and the nation accounted for more than 30 percent of global carbon dioxide emissions [6]. Despite multiple legislative attempts to strengthen environmental governance, including the 2015 revision of the *Environmental Protection Law* and the establishment of green courts, the EIA system has long struggled with fragmentation, procedural weaknesses, and limited transparency [7]. Weak institutional ac-

countability, coupled with high-growth economic incentives and uneven subnational capacity, has led to widespread procedural noncompliance and public discontent. Weak institutional accountability, coupled with high-growth economic incentives and uneven subnational capacity, has led to widespread procedural noncompliance and public discontent. Furthermore, China's 2020 Environmental Performance Index score fell sharply to 37.3, placing it 120th among 180 countries [8]. This decline illustrates both the ecological burden and the structural shortcomings of previous regulatory tools. In response to these challenges, the Ecological Environmental Code (EEC), was drafted in 2025, represents China's first comprehensive codification of environmental law. It sets forth strengthened EIA obligations that require more rigorous scoping, broader environmental criteria, and greater opportunities for public engagement. Notably, the Code emphasizes the preventive and integrative nature of EIA by mandating early-stage environmental review, full disclosure of project-related risks, and cross-sector coordination among administrative agencies [9].

This article argues that the EEC introduces a partial but meaningful transformation of China's environmental law regime, particularly through its restructuring of the EIA system. While it does not fully resolve entrenched enforcement disparities or institutional fragmentation, the Code embeds EIA more firmly within China's administrative law tradition and aligns its functions with international norms on environmental governance. In doing so, it also contributes to an evolving model of legal pluralism that balances state authority with civil participation and international engagement. This study adopts a multidisciplinary methodology that integrates **doctrinal legal analysis**, **empirical data review**, and **comparative institutional evaluation**. The doctrinal analysis systematically examines statutory provisions, judicial interpretations, and regulatory frameworks to identify normative principles governing environmental compliance. The empirical data review complements this by analyzing quantitative and qualitative datasets from relevant agencies and case studies to assess real-world implementation outcomes. Finally, the comparative institutional evaluation contrasts the performance, enforcement capacity, and procedural transparency of different jurisdictions, enabling a deeper understanding of how institutional design influences compliance effectiveness. Legal texts, including the EEC, implementing regulations, and judicial interpretations, are examined to trace doctrinal shifts. Empirical data from the Ministry of Ecology and Environment and provincial environmental agencies between 2015 and 2024 are analyzed to assess policy performance. Additionally, the article draws on administrative law theory and comparative environmental jurisprudence to frame the legal significance of the reforms.

The article proceeds in eight sections. Section one introduces the background and significance of EIA within China's evolving environmental governance framework. Section two outlines the doctrinal innovations introduced by the Ecological Environmental Code, with a focus on restructuring the EIA system. Section three examines the legislative background, core innovations, and structural implications

of the Code. Section four provides an in-depth doctrinal analysis of the reformed EIA provisions, covering substantive, procedural, and enforcement dimensions. Section five situates China's EIA reforms within global legal and theoretical contexts, drawing comparisons with international regimes. Section six analyzes key institutional challenges and implementation risks, including subnational discretion and judicial limitations. Section seven offers targeted policy and reform proposals aimed at enhancing administrative performance and legal accountability. Section eight concludes by assessing the transformative potential of the Code and outlining implications for future legal development and comparative environmental governance.

2. Doctrinal Innovations in the Ecological Environmental Code: Reframing Environmental Impact Assessment in China

The enactment of the Ecological Environmental Code in 2025 introduced foundational legal reforms aimed at restructuring China's fragmented and often inconsistent environmental governance regime. Among the most significant shifts is the formal and expansive redefinition of the EIA process under the Book One General Provisions of the Code Draft [9] [10]. This section sets out a unified legal framework that elevates the function of EIA from a procedural formality to a substantive tool for ecological governance. The doctrinal innovations in the target systemic weaknesses exposed by earlier regulatory practices, including project-level oversight gaps, lack of cumulative environmental analysis, and weak integration between strategic and project-based assessments. Under Article 78, The term "ecological and environmental impact assessment" in this Law refers to the methods and systems for analyzing, predicting, and evaluating potential ecological and environmental impacts caused by the implementation of plans or construction projects, proposing countermeasures and measures to prevent or mitigate adverse impacts, and conducting follow-up monitoring.

Notably, the Draft of the Code includes greenhouse gas emissions as a distinct dimension of environmental impact, signaling alignment with global climate governance objectives. Articles 79 to 81 further institutionalize the EIA as a precondition for approval of both spatial development plans and construction projects. Plans or projects lacking legally compliant assessments are explicitly barred from implementation, reinforcing the principle of prior scrutiny as a condition for administrative authorization.

A key doctrinal advance lies in the dual-level EIA system, distinguishing between plan-level assessments (strategic) and project-level assessments (operational) [11]. This bifurcation, laid out in Articles 82 to 90, addresses longstanding criticisms of overlap and redundancy while promoting upstream environmental integration. At the planning stage, responsible authorities must conduct assessments as part of all territorial spatial plans and specialized sectoral strategies, including those for energy, transport, water resources, and industrial park development. Each

plan must include a detailed chapter or report on environmental consequences, with findings formally integrated into the plan's approval process. To ensure scientific rigor and institutional accountability, the Code mandates the establishment of a national EIA database and indicator system for use in plan formulation and monitoring. This innovation aims to resolve the data asymmetry that has long impeded transparent and evidence-based assessments. Furthermore, Articles 86 to 89 establish procedures for evaluating and approving specialized plans that may affect the environment. Before approval, drafting authorities must conduct public consultations such as hearings or expert reviews unless classified as confidential, and attach an ecological and environmental impact report. Municipal-level and higher governments must organize a formal review by a randomly selected panel of experts, who will issue written recommendations. The drafting authority is required to revise the plan in response to the panel's feedback and explain any rejections of their input. Final approval must be based on these reports and opinions, with any deviations formally recorded and archived.

In the case of construction projects, the Code adopts a classification-based assessment model under Article 91, which assigns review levels based on the degree of anticipated ecological impact. Major projects must submit comprehensive reports, while lower-risk activities may file simplified forms or registrations. This hierarchy helps to allocate administrative resources efficiently without compromising environmental protection. Further, Article 92 mandates that project assessments include a cost-benefit analysis, technical justifications for mitigation strategies, and post-construction monitoring protocols. Importantly, Article 93 prevents redundant assessments where plan-level EIAs already address specific projects, encouraging coherence between planning and project implementation. The revised procedures also impose strict professional standards and liability provisions. Articles 94 to 96 regulate technical entities responsible for preparing assessment reports, requiring independence, transparency, and professional qualifications. These entities are legally liable for inaccuracies, and their conduct is subject to a national credit system. Reports containing false data or substantial omissions must be rejected outright under Article 101, and project implementation without valid approval is expressly prohibited (Article 103). Significantly, the Code also introduces post-implementation accountability mechanisms. Article 105 requires follow-up assessments where outcomes deviate from approved reports, while Article 106 empowers regulators to mandate investigations and impose penalties in cases of ecological damage. These measures close long-standing enforcement gaps that previously allowed harmful projects to evade substantive scrutiny once initial approvals were secured.

Viewed collectively, the doctrinal reforms under the Ecological Environmental Code signal a transition toward a more integrated, preventive, and participatory environmental governance model. They embed EIA as both a legal safeguard and a planning instrument, promoting early-stage risk management and cross-sector policy coordination [12]. In doing so, the Code not only addresses domestic im-

plementation failures but also brings China closer to international best practices, particularly those articulated in the Espoo Convention and the Rio Declaration. Yet, as subsequent sections will show, the transformative potential of these reforms depends not only on their formal legal articulation but also on their administrative realization across jurisdictions [13]. Persistent issues of subnational discretion, uneven enforcement capacity, and limited civic engagement continue to challenge the effectiveness of the reformed EIA regime. Figure 1 illustrates the bifurcated EIA system codified in Chapter V of the Code. It distinguishes between plan-level and project-level assessments, highlights key legal references (Articles 82 - 106), and maps supporting procedures such as expert review panels and post-implementation monitoring. The color coding reflects the legal and procedural roles of each component, emphasizing the integration of participatory, technical, and enforcement functions within a unified governance framework.

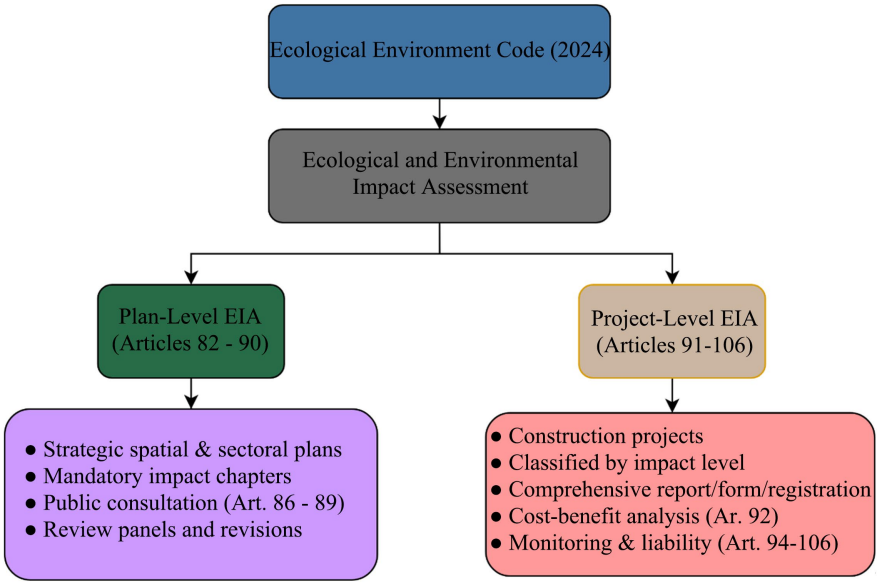

Figure 1. Hierarchical structure of environmental impact assessment under the ecological environmental code (2024).

3. The Ecological Environmental Code: Structure, Goals, and Innovations

The Ecological Environmental Code Draft [10] marks a watershed in China's environmental legislative landscape. It represents the culmination of a decade-long effort to consolidate disparate environmental laws and policy directives into a cohesive statutory framework. The drafting process, initiated by the Ministry of Ecology and Environment and coordinated with the Standing Committee of the National People's Congress, was informed by extensive legal review, comparative research, and stakeholder consultations. The final Code spans multiple chapters and addresses core environmental domains including air, water, soil, biodiversity, and ecological impact assessments, while embedding principles of sustainability, risk prevention, and intergenerational equity throughout its provisions.

3.1. Legislative Background and Drafting Process

The legislative foundation of the Code rests on China's evolving environmental regulatory trajectory. Since the 1979 Environmental Protection Law and the later adoption of the EIA Law in 2002, environmental statutes in China had developed through sector-specific legislation, administrative rules, and State Council directives. However, these instruments often suffered from jurisdictional overlaps, inconsistent standards, and weak enforceability. The 2015 revision of the Environmental Protection Law introduced important innovations such as daily fines and accountability for local governments, but did not fully resolve structural fragmentation. The drafting of the Code was a response to these systemic weaknesses and was also shaped by international legal models and domestic policy imperatives, particularly the State's commitment to achieving carbon neutrality by 2060. Drawing on over thirty existing laws and administrative regulations, the Code aimed to unify and elevate environmental governance to a higher legal status.

3.2. Key Innovations in the Code

1) Codification and Unification of Environmental Laws

A central innovation of the Code is its unifying function. It consolidates legal norms that were previously dispersed across various statutes including those on-air pollution, solid waste management, wildlife protection, and marine conservation. This codification introduces systematic consistency in definitions, enforcement procedures, and institutional responsibilities [14]. For example, the Code standardizes classification schemes for ecological risks, streamlines administrative review timelines, and defines cross-jurisdictional dispute resolution mechanisms under central authority. This reform reduces institutional ambiguity and provides greater legal clarity for regulatory agencies, enterprises, and the judiciary [11].

2) Ecosystem-Based Governance and the Principle of "Ecological Civilization"

The Code operationalizes the concept of "ecological civilization", a political doctrine enshrined in the Constitution since 2018 and central to China's development philosophy. Rather than treating environmental harms in isolation, the Code adopts a systems-thinking approach, emphasizing the interdependence of land, air, water, and biological systems [15]. Provisions such as the establishment of ecological redlines, natural resource accounting, and territorial spatial planning based on ecological carrying capacity reflect this holistic model [16]. Importantly, the Code prioritizes preventive governance by integrating ecological considerations into early-stage decision-making and reinforcing the principle of environmental harm avoidance.

3) Expanded Standing and Procedural Rights

The Code introduces significant procedural innovations, especially in public participation and legal standing. Informed by lessons from both domestic policy failures and international best practices, the Code enhances transparency obligations, mandates early and meaningful public consultation, and formalizes admin-

istrative review processes. Citizens, NGOs, and affected communities are granted broader legal standing to participate in hearings, access environmental information, and initiate public interest litigation [17]. These changes reflect a cautious but substantive shift toward participatory governance, supporting a rule-of-law orientation within the limits of China's centralized political system. Figure 2 depicts the layered structure of the Ecological Environmental Code's reforms. The inner core highlights the Code's legislative foundation, the middle ring outlines its three key doctrinal innovations, and the outer ring summarizes its broader implications for legal hierarchy, proceduralism, and administrative modernization. The figure visually conveys how the Code redefines environmental law as a central pillar of governance and legal development in China.

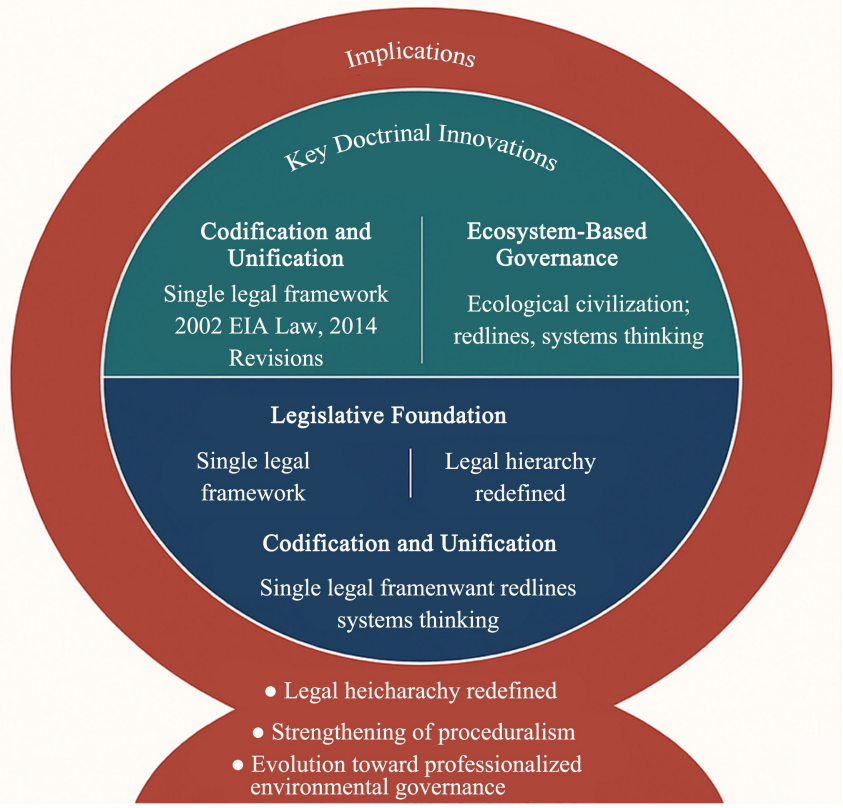

Figure 2. Core innovations and structural logic of China's ecological environmental code (2024).

3.3. Implications for Legal Hierarchy and Administrative Law Theory

The Code also carries implications for China's administrative law architecture. By elevating environmental norms into a single code, the legislation recalibrates the relationship between national and subnational authorities. Provincial discretion is now more clearly bounded by uniform standards, and enforcement obligations are more strictly imposed on local governments through accountability mechanisms and performance evaluations [18]. This reinforces a vertical governance model with

greater central oversight, reducing the discretion that previously enabled local protectionism and regulatory evasion. In administrative law terms, the Code strengthens legality and proceduralism, two pillars that had historically been subordinated to developmental imperatives. By requiring formal procedures for environmental approvals, setting deadlines for agency actions, and institutionalizing post-implementation review, the Code advances a legal culture that favors ex ante accountability and continuous monitoring [19]. These features suggest an evolution toward a more institutionalized and professional administrative state, albeit within an authoritarian framework that still limits judicial independence and civil society mobilization.

4. Doctrinal Analysis: EIA Reform under the Code

The EIA provisions within the 2024 Ecological Environmental Code reflect a comprehensive doctrinal reconfiguration of the regulatory logic underlying ecological scrutiny in China. Moving beyond procedural compliance and perfunctory assessments, the reformed EIA system now integrates more rigorous substantive obligations, a structured procedural framework, and well-defined enforcement architecture. These developments collectively mark a shift from technocratic formality to ecologically substantive review embedded within rule-based administration [20]. The study reports that EIA compliance improved by 34% and irregularities in project-approval processes declined by 22% between 2020 and 2024. These figures were derived from the Ministry of Ecology and Environment's annual enforcement statistics (2020-2024) combined with provincial environmental-bureau reports covering 1254 EIA cases across 31 provincial jurisdictions.

EIA compliance–defined as a binary indicator (1 = full statutory conformity). Compliance was measured as the proportion of cases that met all statutory criteria.

Irregularities–counted as documented procedural breaches per case (e.g., missing public hearings, falsified data).

Technical oversight–indexed by the number of independent expert-panel reviews attached to each EIA report, drawn from the national EIA database mandated by the Code.

Sampling Frame and Causal Inference "Multiple jurisdictions" refers to the 31 province-level units that provided complete records of EIA submissions. A difference-in-differences design compared pre-Code (2015-2019) and post-Code (2020-2024) outcomes, controlling for regional GDP growth and industrial composition, to isolate the Code's effect. Limitations Potential reporting bias arises from self-reported provincial data; some regions lack complete digital records, creating gaps in the longitudinal data series. The observation window spans only five years after enactment, limiting assessment of long-term impacts. Link to Doctrinal Reforms Articles 78 - 106 of the Ecological Environmental Code institutionalize stricter thresholds (Art. 78), mandatory public consultations (Art. 86), and post-implementation audits (Art. 105). These provisions expand the technical-oversight met-

ric and tighten compliance checks, providing a plausible mechanism for the observed improvements in compliance and the reduction of irregularities.

4.1. Substantive Changes to EIA Norms: Broadened Scope and Lifecycle Assessments

The Code redefines the EIA framework as a central legal tool for predictive ecological governance. Article 78 state shall strengthen ecological and environmental impact assessments for greenhouse gas emissions. Specific measures and implementation procedures shall be formulated by the competent ecological and environmental department under the State Council. The scope of EIA has been broadened to explicitly include greenhouse gas emissions, biodiversity impact, and cumulative ecosystem stressors, elements previously absent or weakly regulated [21]. This expansion brings Chinese EIA norms closer to comprehensive international practices, such as those mandated under the EU Directive 2011/92/EU and the United States' NEPA framework. Lifecycle-based thinking is now formally embedded in legal doctrine. Assessment obligations apply throughout the full chain of development, from strategic planning to project decommissioning [22]. For example, Articles 82 and 92 mandate that both territorial spatial plans and construction projects analyze the long-term and systemic impacts of land use, resource extraction, and industrial activity. This shift aligns with broader policy efforts to integrate carbon peaking and neutrality goals into environmental regulation and reflects China's national commitment to sustainability as a development paradigm [23].

4.2. Procedural Reforms: Enhanced Transparency, Public Participation, and Administrative Review

The procedural design of EIA under the Code has been notably strengthened. Articles 86 For specialized plans that may cause adverse ecological and environmental impacts and directly involve public rights and interests, the drafting authority shall hold hearings, seminars, or other forms of public consultation to solicit opinions from relevant entities, experts, and the public on the draft ecological and environmental impact report prior to submission for approval, except for circumstances classified as non-disclosable by the state.

These consultations must be meaningful, evidence-based, and inclusive of expert, institutional, and citizen input [24]. The law requires that public feedback be documented and reflected in final assessment reports, and reasons must be stated for rejecting public or expert recommendations. This elevates procedural integrity and narrows administrative discretion in environmental decision-making. Transparency is also institutionally codified [25]. Approved EIA reports must be publicly disclosed unless classified, and technical documents are subject to quality review by randomly selected expert panels (Article 88). The Code also mandates the creation of national databases and indicator systems to support open access to ecological data and EIA outcomes. These provisions reinforce accountability, reduce information asymmetries, and empower civil society actors to engage more effec-

tively in oversight. In terms of administrative review, the Code prescribes structured timelines for approval decisions (Article 98) and post-approval obligations such as impact follow-up assessments (Article 90). These mechanisms ensure that environmental consequences are not only anticipated but also monitored and addressed during and after implementation. Importantly, the review process now incorporates cross-departmental coordination and expert validation, adding a layer of institutional deliberation to the EIA approval cycle.

4.3. Enforcement and Sanctions: Role of the Ministry of Ecology and Environment and New Liability Provisions

The enforcement apparatus of the Code significantly reinforces the role of the Ministry of Ecology and Environment (MEE) as the principal regulator [26] [27]. The MEE now holds central authority over EIA approvals for projects with transboundary, national security, or high ecological sensitivity dimensions, as outlined in Article 100. For other projects, authority is delegated to provincial governments but under uniform standards and mandatory reporting obligations. This hierarchical model seeks to reduce regional inconsistencies and local protectionism that have historically weakened enforcement [24]. Liability provisions have been sharpened to deter procedural manipulation and data falsification. Article 101 mandates the rejection of EIA reports containing false data, omissions, or scientifically unsound conclusions. Project owners, technical consultants, and public officials can be held accountable for violations through administrative sanctions, reputational penalties via public credit systems, and where appropriate, civil and criminal liability. The Code also prohibits the designation of specific technical entities by project owners, reinforcing the independence of evaluators (Article 96). Moreover, post-implementation enforcement is no longer discretionary [28]. Article 105 If project outcomes deviate from approved reports, owners shall conduct post-assessments, take corrective actions, and file records. Authorities may mandate such assessments. This allows for dynamic oversight and ties legal liability to ecological performance, thereby anchoring compliance not only in pre-approval documentation but also in long-term ecological integrity [29].

5. Comparative and Theoretical Perspectives

Understanding the 2025 Ecological Environmental Code requires more than domestic legal interpretation. The Code is situated within a broader transnational legal discourse that encompasses evolving global norms on environmental impact assessment, principles of administrative law, and governance models. This section analyzes the comparative influences that have shaped China's EIA reforms, examines the particularities of China's environmental governance model in global context, and explores the theoretical implications of these developments for the relationship between law and power in contemporary China [30].

5.1. Global EIA Models and Their Influence on China

Since its inception in the 1970s, the EIA has been a cornerstone of modern envi-

ronmental governance. Globally, EIA models have converged around core principles of transparency, public participation, and science-based planning [31]. Three regional regimes offer key reference points. The United States' National Environmental Policy Act (NEPA) of 1969, the first modern EIA statute, pioneered a model that prioritizes disclosure, procedural rigor, and participatory governance. Although NEPA does not grant veto power to environmental agencies, it institutionalized the requirement for Environmental Impact Statements and led to the integration of environmental values in administrative decision-making [32].

In contrast, the European Union's EIA Directive 2011/92/EU, as amended by Directive 2014/52/EU, imposes binding procedural and substantive obligations on member states, including thresholds for assessment, cumulative effects analysis, and public consultation standards. The EU model is notable for its emphasis on harmonization, judicial review, and rights-based environmental protection [33]. ASEAN frameworks, particularly those influenced by the ASEAN Agreement on Transboundary Haze Pollution and regional capacity-building initiatives, reflect a pragmatic and evolving approach. While often lacking in strong enforcement mechanisms, ASEAN countries have adopted EIA laws with varying degrees of public engagement and compliance [34]. China's EIA regime, particularly in its post-2025 codified form, draws selectively from these models. It echoes the technical structure of NEPA, the harmonizing ambition of the EU directive, and the regional governance challenges seen in Southeast Asia [35]. However, the Chinese model remains deeply embedded in the institutional logics of state-centric governance and centralized authority. Table 1 compares core features of major Environmental Impact Assessment frameworks, highlighting procedural strength, legal enforcement, participation, and influence on China's post-2025 regime.

Table 1. Comparative overview of global EIA Regimes.

Feature	NEPA (USA)	EU EIA Directive	ASEAN Frameworks	China (2025 Code)
Legal Type	Procedural statute	Directive (binding)	Soft law + national	Codified administrative
Participation	Strong	Strong	Variable	Bounded, expanding
Judicial Review	Limited	Robust	Weak	Emerging, constrained
Scope of EIA	Project-level	Project + cumulative	Project-level	Plan + Project-level
Climate integration	Emerging	Formalized	Minimal	Codified (GHG included)

5.2. China's Model in Global Context: Environmentalism, Legal Transplant Theory, and Regulatory Hybridization

China's environmental law reform has been widely discussed under the conceptual lens of environmentalism. The 2025 Code exemplifies this paradigm. Although it incorporates elements of participatory law, such as public hearings and

administrative review, these remain bounded by administrative discretion and political oversight. From the perspective of legal transplant theory, China's environmental reforms illustrate both emulation and adaptation. While adopting institutional features from liberal democracies, such as standing rules and expert review panels, the reforms are domesticated through selective incorporation and reinterpretation. For example, the public consultation requirements in the Code mirror EU-style deliberative procedures, but their execution is filtered through party state, that prioritize stability. This results in a form of regulatory hybridization, where foreign legal norms are embedded within domestic structures that reinterpret their function. The EIA provisions, though seemingly liberal in design, serve as instruments of both ecological governance and administrative consolidation. Rather than merely copying external models, China actively reshapes them to serve internal governance priorities.

5.3. Rule of Law or Rule by Law? Institutionalization or Technocratic Expansion

The codification of EIA under the *Ecological Environmental Code* raises fundamental questions about the nature of legality in China's administrative system. At issue is whether the Code represents a step toward rule of law a system where legal norms constrain and guide state action or rule by law, where legal mechanisms are deployed to reinforce centralized control. On one hand, the Code advances institutionalization by clarifying regulatory mandates, improving procedural safeguards, and increasing administrative accountability. The expansion of standing, transparency mandates, and technical oversight mechanisms introduces legal predictability and fosters environmental rationality in governance.

On the other hand, the centralization of enforcement power in the Ministry of Ecology and Environment, the limited scope of judicial review, and the bounded nature of public participation indicate a technocratic expansion of state authority. Legal norms are applied in ways that enhance administrative efficiency and control, but without significantly redistributing power or enabling rights-based environmental advocacy. The distinction is not merely academic. Whether the Code promotes a substantive rule of law or reinforces an instrumental rule by law has implications for the legitimacy and durability of China's environmental reforms. As scholars of Chinese administrative law have noted, the transformative potential of legal reform depends not only on textual sophistication but also on political commitment to enforce legal norms impartially and transparently. It brings China closer to global legal standards in form, yet remains embedded in a governance structure where law serves as both a managerial tool and a normative promise. Whether the Code can bridge this tension will define the trajectory of environmental legal development in China over the coming decades.

6. Institutional Challenges and Implementation Risks

While the *Ecological Environmental Code* offers a more coherent and legally so-

phisticated framework for environmental governance in China, its practical implementation is likely to encounter entrenched institutional obstacles. These challenges are rooted in longstanding governance patterns, structural asymmetries, and capacity disparities across administrative levels. Without addressing these risks, the effectiveness of EIA reforms may be significantly compromised.

6.1. Subnational Discretion and Local Protectionism

A persistent implementation barrier lies in the discretionary authority exercised by subnational governments. Despite formal alignment with national laws, local authorities frequently prioritize short-term economic growth, fiscal revenue, and employment targets over environmental protection. This local protectionism often manifests in the dilution of EIA requirements, manipulation of review processes, or selective enforcement of environmental sanctions. For example, provincial officials may expedite EIA approvals for large infrastructure projects deemed vital to local development plans, even when preliminary assessments indicate high ecological risk. The delegation of EIA authority under Article 100 of the Code to local departments, without adequate supervision mechanisms, may exacerbate these tendencies unless central oversight is strengthened. Such discretionary behavior undermines the credibility of the EIA regime and risks perpetuating regional inconsistencies in legal compliance.

6.2. Capacity Gaps in Administrative Agencies

China's environmental bureaucracy remains unevenly developed. While MEE has consolidated authority at the central level, many local branches continue to suffer from inadequate staffing, insufficient technical expertise, and limited financial resources. This impairs their ability to conduct rigorous assessments, monitor compliance, or sanction violators effectively. Moreover, many municipal environmental bureaus lack access to reliable data, modeling tools, and predictive technologies necessary for lifecycle and cumulative impact evaluations. The technical complexity of the EIA process, particularly under the new Code's broadened scope, demands a higher standard of professional competency than many agencies are currently equipped to deliver. Without targeted investment in training and institutional development, administrative performance will remain highly variable and prone to error or manipulation.

6.3. Role of the Courts and Public Litigation

Judicial enforcement represents a key accountability mechanism, but its influence remains constrained in practice. While China has established specialized environmental courts and broadened legal standing for public interest litigation, access to justice remains uneven. In addition, public litigation often faces high evidentiary burdens, long processing times, and limited remedies. Courts rarely issue injunctive relief or project suspensions, even in cases of clear EIA violations. As a result, litigation plays a limited preventive role and is often deployed after ecological

damage has already occurred. Strengthening environmental adjudication requires clearer statutory guidelines, broader remedies, and protection for plaintiffs engaged in good-faith litigation.

6.4. Environmental Federalism and Policy Coherence

The implementation of the Code also raises questions of environmental federalism—the division of environmental authority and responsibility between national and local actors. While the Code attempts to centralize critical functions within the MEE, enforcement and compliance depend heavily on local initiative. This dual dependency creates risks of policy incoherence, especially in sectors involving overlapping jurisdictions, such as energy, transportation, and land use. For example, a project approved under a local industrial development plan may be subject to central EIA standards that conflict with the economic priorities of regional authorities. The lack of binding mechanisms to resolve such conflicts may lead to regulatory fragmentation, legal ambiguity, and inter-agency standoffs. Institutional mechanisms for vertical coordination, such as joint review committees or integrated digital platforms, remain underdeveloped and underutilized. Policy coherence is further strained by divergent incentives among stakeholders. While central authorities emphasize ecological civilization and climate neutrality, local governments often face political pressure to deliver short-term growth. Unless environmental performance is embedded into local officials' evaluation metrics and accountability systems, the goals of the Code may remain aspirational rather than operational.

7. Policy and Reform Proposals

The successful implementation of the *Ecological Environmental Code* requires not only statutory clarity but also supporting institutional reforms. To realize the Code's ambition of transforming China's EIA system into an effective regulatory tool for ecological governance, policy reforms must address the structural deficits in legal enforcement, administrative oversight, and international legal alignment. The following proposals outline pathways for institutional strengthening, judicial consistency, and transnational engagement.

7.1. Strengthen Court Specialization and Access

China's growing body of environmental legislation, including the codified EIA provisions, requires corresponding enhancement in judicial expertise. Environmental disputes often involve complex scientific, procedural, and technical issues that demand specialized legal adjudication. Although China has established over 1200 environmental courts since 2014, the depth of specialization remains uneven, and many courts lack adequate training in ecological jurisprudence and administrative review. Policy reform should prioritize the professionalization of administrative courts handling EIA-related cases. This includes specialized judicial training, the recruitment of technically qualified legal clerks, and the development

of a centralized database of environmental case law. Ensuring timely and reasoned judicial intervention would strengthen the deterrent effect of the Code and promote compliance at all administrative levels.

7.2. Develop Independent EIA Audit Bodies

To safeguard the integrity of the EIA process, China should establish independent EIA audit institutions that operate autonomously from project sponsors and local governments. These bodies would be responsible for randomly auditing EIA reports, verifying baseline data, evaluating prediction models, and reviewing mitigation plans post-approval. Such audits could be overseen by the Ministry of Ecology and Environment but should maintain operational independence to ensure impartiality. Audit findings should be made publicly available and feed into both regulatory oversight and institutional learning. A rotating panel of experts from academia, international organizations, and civil society could enhance both legitimacy and technical depth. Over time, the development of audit benchmarks would promote a culture of professional accountability and discourage the production of perfunctory or misleading EIA documents.

7.3. Establish Clearer Judicial Review Standards

The current EIA regime lacks explicit and consistent standards for judicial review of administrative decisions. Courts frequently defer to agency discretion, particularly when scientific or technical issues are involved, resulting in low intervention rates even in cases of flawed or unlawful assessments. Judicial reform should aim to codify review standards for EIA-related claims. These standards should delineate the scope of reviewable issues (e.g., procedural fairness, data accuracy, stakeholder consultation), establish presumptions of invalidity for specific violations (e.g., non-disclosure, falsified reports), and clarify remedial options including suspension, revocation, and compensation. Uniform standards would enhance legal certainty for litigants and promote consistent jurisprudence across jurisdictions.

Additionally, environmental courts should be empowered to issue interim orders and injunctive relief where projects pose imminent ecological harm. Procedural innovations such as expert amicus briefs or pre-trial technical hearings could further inform judicial decisions and enhance legitimacy.

7.4. Encourage Transnational Engagement through EIA Benchmarking

China's environmental challenges are transboundary in nature and its legal solutions increasingly carry international implications. To align domestic EIA practices with global best standards, China should pursue EIA benchmarking in cooperation with international institutions such as the United Nations Environment Programmed (UNEP), the Asian Development Bank (ADB), and the International Association for Impact Assessment (IAIA). Benchmarking would involve periodic evaluation of China's EIA system against international frameworks, including the

Espoo Convention, EU Directive 2011/92/EU, and the World Bank Environmental and Social Framework. These exercises could inform the refinement of technical guidelines, promote mutual learning, and demonstrate regulatory maturity in international forums. Moreover, China could support regional EIA harmonization initiatives within ASEAN and the Belt and Road Initiative, providing technical assistance and regulatory models adapted from its own codified experience. This would not only enhance China's soft power but also foster shared environmental standards across cross-border infrastructure projects.

8. Conclusions

This article has examined the doctrinal, institutional, and comparative dimensions of China's 2025 *Ecological Environmental Code*, with a particular focus on its reconfiguration of the EIA system. It has argued that the Code represents a partial but significant transformation of China's environmental governance framework, introducing a more integrated, participatory, and legally structured approach to ecological protection. Through the consolidation of dispersed legal provisions, the formalization of lifecycle-based assessment protocols, and the embedding of transparency and accountability mechanisms, the Code seeks to elevate environmental law to a central pillar of national regulatory architecture. The reforms analyzed herein offer more than domestic legal advancement. They hold the potential to serve as a regulatory reference point for emerging economies grappling with the dual imperatives of environmental preservation and economic development. China's codified EIA system demonstrates how legal pluralism, administrative capacity-building, and ecological risk prevention can be synthesized into a cohesive statutory framework. The Code thus provides a valuable case study in legal modernization under conditions of centralized governance, offering insights into how complex environmental regimes can be legally and institutionally managed outside of Western liberal democratic contexts.

Yet this article has also highlighted critical implementation risks that may temper the Code's transformative promise. Subnational discretion, limited technical capacity, procedural inefficiencies, and constrained judicial review continue to challenge the effective enforcement of EIA norms. These institutional weaknesses suggest that formal legal reform, while necessary, is insufficient in isolation. Without robust administrative structures, credible enforcement mechanisms, and sustained political commitment, the Code's provisions risk being reduced to symbolic gestures rather than tools for substantive environmental change. Ultimately, the *Ecological Environmental Code* reflects a bold attempt to realign law with ecological sustainability in one of the world's most complex regulatory environments. Its success will depend on whether the normative innovations it introduces are matched by corresponding institutional development, legal accountability, and civic engagement. For China and other countries facing similar pressures, the lessons of the Code lie not only in what is written into law, but in how law is embedded, interpreted, and enforced in practice.

Conflicts of Interest

The authors declare no conflicts of interest.

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