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Legal effectiveness of environmental impact assessment under global environmental conventions: A critical review

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Abstract: The paper is a critical analysis of the legal efficacy of Environmental Impact Assessment (EIA) requirements in the global environmental agreements with specific regard to the Espoo Convention, the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), and the Aarhus

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Convention as a procedural participation tool. The research objective is to evaluate the extent to which these treaty regimes develop legally specific, enforceable and institutionally reinforced EIA obligations which can impact domestic environmental decision-making. The article analyzes treaty provisions in relation to five criteria using a doctrinal and comparative legal analysis, which are normative precision, binding force, procedural specificity, compliance architecture and domestic implementation capacity. Analysis concludes that the Espoo Convention offers the most robust procedural framework to transboundary EIA whilst the CBD acknowledges EIA by transboundary biodiversity protection obligations but gives broad discretion to states. UNFCCC has an indirect contribution by the climate related planning requirements though it does not have a direct EIA mechanism. The paper also posits that legal effectiveness should be separated into effective implementation, which is a consequence of weak institutions, limited citizens participation, and failure of post-approval monitoring: the issue of weak implementation should be taken into consideration, but the primary legal problem is the lack of enforceability and the inability to design treaties in a coherent way. The article finds that the international EIA duties need more descriptive procedural obligations, enhanced mechanisms of compliance, more integration with the precautionary principle and better domestic incorporation to enhance their role in sustainable development.

Keywords: Environmental Impact Assessment, Global Environmental Conventions, Sustainable Development, Legal Effectiveness, Climate Change Integration

1. Introduction

1.1 Background

Environmental Impact Assessment (EIA) has been raised as a critical instrument in the international struggle to control and alleviate the environmental impacts of development projects. Empowered by international law, EIAs are usually an obligatory provision under other global ecological agreements and the intent is to facilitate sustainable development by making sure that the environmental concerns are incorporated into decision making procedures.² The significance of EIAs has increased considerably since the adoption of the Espoo Convention in 1991, the Convention on Biological Diversity (CBD), and the United Nations Framework Convention on Climate Change (UNFCCC).³ These conventions emphasise that environmental assessment is necessary to determine the impact of the proposed projects and that the environment must be taken into account before a decision is taken.⁴

Though the Aarhus Convention is not directly an EIA treaty in the same manner as the Espoo Convention, it is very relevant to the legal effectiveness of EIA in that it empowers the procedural underpinnings of environmental decision-making. The transparency and accountability aspects of EIA systems are provided in its three pillars:

² MAYEMBE, R., SIMPSON, N. P., RUMBLE, O., and NORTON, M. "Integrating climate change in environmental impact assessment: A review of requirements across 19 EIA regimes". *Science of The Total Environment*, v. 869, 2023, pp. 161850. <https://doi.org/10.1016/j.scitotenv.2023.161850>

³ POORHASHEMI, A. "International environmental law". In *Public International Law: A Multi-Perspective Approach*. Routledge. 2024, pp. 453-466. <https://doi.org/10.4324/9781003451327-19>

⁴ NITA, A., STACEY F., and LAURENTIU R. "Researchers' perspective on the main strengths and weaknesses of Environmental Impact Assessment (EIA) procedures". *Environmental Impact Assessment Review*, v. 92, 2022, pp. 106690. <https://doi.org/10.1016/j.eiar.2021.106690>

access to environmental information, participation by the population and access to justice. The Aarhus Convention is thus considered in this article as a complementary procedural system and not the primary object of the comparison of treaties.⁵ This difference matters since the lawful efficiency of the EIA does not hinge on the fact that a particular assessment is officially necessary, but also whether or not the impacted persons can obtain information, engage in a beneficial way and appeal flawed decisions.

Nevertheless, the efficacy of EIAs is an issue of concern, regardless of these legal tools. Although the conventions provide a structure around EIA, there are immense disparities in concern with implementation on a national and regional level and enforcement, legal compliance and cross-country coherence remain a challenge.⁶ Also, the legal effectiveness of EIA provisions is commonly criticised in terms of a lack of binding force, weak procedural processes, and inadequate integration into development planning processes.⁷ This study critically evaluates the legal efficacy of Environmental Impact Assessments (EIAs) as per global environmental conventions by evaluating whether they are productive in accordance with their intended aim of protecting the environment. The research seeks to illuminate how effective and weak EIAs are in international environmental governance by examining existing legal frameworks, case studies and enforcement practises used.

1.2 Conceptualising legal effectiveness in international environmental law

Legal effectiveness in this article is defined as the ability of the treaty-based EIA obligations to establish discernible legal obligations, direct state behavior and hold state accountable by either domestic or international implementation systems. It is thus more limited than overall environmental success. An environmental protection policy aim can be supported with a treaty that is weak in legal terms because the treaty provisions are vague, discretionary or lacked compliance procedures. Legal effectiveness is differentiated with practical implementation effectiveness. Legal effectiveness deals with the structure and enforceability of legal norms per se; whether the treaty text is specific, and binding, operating procedurally and backed by monitoring or dispute settlement procedures. Effectiveness of the practical implementation would be the question of how successfully those norms are implemented in practice in an administrative setting. This difference is the theme of the article since numerous EIA disasters are not only as a result of inadequate treaty writing, but also due to inadequacy of domestic capacity, political influence and lack of citizen involvement.

The article measures the effectiveness of legal systems with the help of five criteria. First, normative precision considers whether the treaty language establishes certain obligations or vaguely drawn expectations. Second, binding force determines the legality of the obligation being legally binding or programmatic. Third, procedural specificity comes into play whether the treaty clarifies on the manner in which EIA has to be performed including screening, scoping, consultation and publication. Fourth, compliance

⁵ BHAT, I. H. "A critical review of legal challenges and opportunities in transboundary environmental impact assessment". *Central University of Kashmir Law Review*, v. 3, 2023, pp. 108-138. <https://doi.org/10.66498/CUKLR.3.2023.108-138>

⁶ CRAIK, N., and GU, K. "Implementing environmental impact assessment in areas beyond national jurisdiction: Epistemic, institutional and normative challenges". In *Research Handbook on International Marine Environmental Law*, Edward Elgar Publishing. 2023, pp. 428-450. <https://doi.org/10.4337/9781789909081.00029>

⁷ SWANGJANG, K. "Comparative review of EIA in the Association of Southeast Asian Nations". *Environmental Impact Assessment Review*, v. 72, 2018, pp. 33-42. <https://doi.org/10.1016/j.eiar.2018.04.011>

architecture looks at reporting, supervisory and dispute-settlement. Fifth, domestic implementation capacity looks at the ability of treaty commitments in being usefully integrated in national statutes and pursued by courts or administrative agencies.

1.3 Problem statement

Various global environmental conventions have also raised a persistent structural concern in the form of legal effectiveness of EIAs because the issues arising in terms of inconsistent implementation and enforcement weaken their goals of safeguarding sustainable development.⁸ Despite the idea of EIA being imbued in several key international agreements, such as the Espoo Convention, the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC), it is generally shrouded in difficulties, including a lack of legal obligations, adherence, and incorporation into decision-making. Most of the EIA legal provisions are not binding and most countries do not have problem with harmonising their application and compliance.⁹ Such issues nullify the potential of EIAs to play a role in mitigating environmental harm. Despite the rise of sustainability as a global concern, very little in-depth research has been carried out to gain insights into the real impacts of these legal frameworks in practise.

1.4 Research objectives

(1) To critically evaluate the legal frameworks of EIAs under major global environmental conventions.

(2) To assess the effectiveness of EIA implementation in different countries and regions, focusing on compliance and enforcement challenges.

(3) To identify potential improvements and best practices for enhancing the legal effectiveness of EIAs in promoting sustainable development.

1.5 Research questions

(1) How do the legal frameworks for EIAs under global environmental conventions function, and what are their strengths and weaknesses?

(2) How effective is the implementation of EIAs across various countries, and what are the key challenges in enforcement and compliance?

(3) What legal reforms or best practices could improve the effectiveness of EIAs in contributing to sustainable development?

1.6 Significance

The research is notable in environmental law because it critically assesses the efficacy of EIA in international environmental standards. By demonstrating the challenges and suggesting the ways that should be adopted to enhance them, the study can be applied in the future to drive a more robust legal protection of the environment in future global agreements and policy making.

⁸ ELIAS, O., and WONG, M. "Environmental impact assessment". In *Research Handbook on International Environmental Law*. Edward Elgar Publishing. 2021, pp. 188-208. Available at: <https://www.e-elgar.com/shop/gbp/research-handbook-on-international-environmental-law-9781786439703.html> (accessed on 28 August 2026).

⁹ PRIP, C. "The convention on biological diversity and climate change". In *Research Handbook on Climate Change and Biodiversity Law*. 2024, pp. 25-46. <https://doi.org/10.4337/9781800370296.00009>

2. Related concepts and theories

2.1 Evaluation of EIA legal frameworks under global conventions

EIAs have taken centre-stage as the world struggles to promote sustainable development. The high-profile international conventions such as the UNFCCC, the CBD and the Aarhus Convention underscore their legal systems.¹⁰ All these conventions collectively affect the requirements to be adhered to in undertaking EIAs and hence it is compulsory that the environment be considered first when decisions are being made on development projects. Aarhus Convention provides a sound legal management of the environment with access to transparency and participation in the process.¹¹ It mandates that citizens ought to be capable of being integrated in the decision-making processes of the issues that influence the environment including the EIA process, thus empowering the communities and stake holders.¹² The UNFCCC, nevertheless, has instituted instruments, which force states to link climate change mitigation and adaptation to their development initiatives, which substantiate the value of EIAs to identify the possible impacts of climate change.

The CBD also addresses the significance of ascertaining the ecological impact of plans that might affect the biodiversity and ecosystems. Despite the major strengths of these frameworks, challenges to their implementation exist. Inconsistent enforcement is a problem that is challenging the countries in several situations, particularly in the regions with the limited political will, financial resources, and institutional capacity.¹³ The non-binding nature of certain conventions also leaves room to inadequate compliance, which undermines effectiveness of EIA processes.¹⁴ Analytical reaction to the arguments of these frameworks to the universality of greater cohesion, enforcement to assure that global environmental principles are achieved, to more sustainable means of development at a global scale.¹⁵

2.2 Assessment of EIA effectiveness in compliance and enforcement

The application and enforcement of EIAs is a major determinant of its effectiveness in different nations and regions. In the developed world, where legal frameworks are well established, EIA laws will be more consistently applied with institutions established,

¹⁰ AWEWOMOM, J., DZEBLE, F., TAKYI, Y. D., ASHIE, W. B., ETTEY, E. N. Y. O., and AFUA, P. E., et al. "Addressing global environmental pollution using environmental control techniques: A focus on environmental policy and preventive environmental management". *Discover Environment*, v. 2, n. 1, 2024, pp. 8. <https://doi.org/10.1007/s44274-024-00033-5>

¹¹ LIM, M. "Biodiversity 2050: Can the convention on biological diversity deliver a world living in harmony with nature". *Yearbook of International Environmental Law*, v. 30, n. 1, 2019, pp. 79-101. <https://doi.org/10.1093/yiel/yvaa079>

¹² POČUČA, M., MLADENOV, M., and MIRKOVIĆ, P. "The analysis of the Aarhus Convention in the context of good environmental governance". *Економика пољопривреде*, v. 65, n. 4, 2018, pp. 1615-1625. <https://doi.org/10.5937/ekoPolj1804615P>

¹³ SHELTON, D., MBENGUE, M. M., CIMA, E., and MCGARRY, B. "International institutions and actors". In *International Environmental Law*. Fourth Edition. Brill | Nijhoff, 2026, pp. 191-270. <https://doi.org/10.1163/9789047440802>

¹⁴ STOETT, P. J. "Unearthing Under-Governed Territory: Transnational Environmental Crime". In DURCH, W., LARIK, J., PONZIO, R. (eds.) *Just Security in an Undergoverned World*. Oxford University Press, 2018, pp. 238-262. <https://doi.org/10.1093/oso/9780198805373.003.0010>

¹⁵ SHADIKHODJAEV, S. "Environmental Impact Assessments and trade agreements: An analysis of US, Canadian, and EU practices". *Transnational Environmental Law*, v. 14, n. 2, 2025, pp. 392-419. <https://doi.org/10.1017/S2047102525100010>

clear environmental laws and political motivations towards sustainability.¹⁶ The United States, Canada and many European Union (EU) Member States have established detailed EIA systems that are practical and have strong enforcement measures, regular monitoring and legal compensation against their non-observance.¹⁷ These structures typically ensure that developers conduct thorough environmental research, minimising the adverse effects on the environment during the work.¹⁸ However, the situation in most developing countries is a vastly different one because institutional issues, resource scarcity, political issues and corruption typically hinder the implementation and enforcement of EIA regulations.

Under these conditions, EIAs may be avoided, delayed or poorly implemented due to the absence of technical experience or political pressures emphasising the desire to promote economic growth over environmental concerns.¹⁹ Indicatively, in some African and Asian states, no adequate framework of good governance and the absence of independent environmental control agencies have led to the neglect of good enforcement, whereby environmentally harmful projects are implemented without adequate scrutiny. The lack of public participation and transparency in the approval process exacerbates the compliance issue.²⁰ Although the levels of transparency and community participation are promoted within international conventions like the Aarhus Convention, numerous regions are unable to effectively engage communities. The absence of strong legal frameworks and relevant surveillance systems aggravates the situation, giving little room to bring violators to justice.²¹

2.3 Improvements and best practices for enhancing legal effectiveness of EIAs

To enhance the legal integrity of EIAs in various countries, several reforms and best practices need to be embraced. One of the most crucial steps is enhanced transparency and the engagement of the people in the EIA process.²² Affected communities need to be given information so that they can have a platform to comment and to hold those in government and the developers answerable. Transparency not only assures

¹⁶ SWANGJANG, K. "Comparative review of EIA in the Association of Southeast Asian Nations". 2018. Ibid.

¹⁷ AUNG, T. S., FISCHER, T. B., and SHENGJI, L. "Evaluating environmental impact assessment (EIA) in the countries along the belt and road initiatives: System effectiveness and the compatibility with the Chinese EIA". *Environmental Impact Assessment Review*, v. 81, 2020, pp. 106361. <https://doi.org/10.1016/j.eiar.2019.106361>

¹⁸ ALBERTS, R. C., RETIEF, F. P., CILLIERS, D. P., ROOS, C., and HAUPTFLEISCH, M. "Environmental impact assessment (EIA) effectiveness in protected areas". *Impact Assessment and Project Appraisal*, v. 39, n. 4, 2021, pp. 290-303. <https://doi.org/10.1080/14615517.2021.1904377>

¹⁹ LOOMIS, J. J., and DZIEDZIC, M. "Evaluating EIA systems' effectiveness: A state of the art". *Environmental Impact Assessment Review*, v. 68, 2018, pp. 29-37. <https://doi.org/10.1016/J.EIAR.2017.10.005>

²⁰ OGORODNIKOVA, V., TRICOLI, F., ESTEVE, A. M., and ISHIHARA, S. "National legal frameworks for social impact assessment and management". *Handbook of Social Impact Assessment and Management*, 2024, pp. 16-31. <https://doi.org/10.4337/9781802208870.00008>

²¹ NKOH, S. E. "The role of environmental impact assessment as a tool that aids decision-making in achieving sustainable development: Perspectives on its evolution in Cameroon". *Scholars International Journal of Law, Crime and Justice*, v. 6, n. 5, 2023, pp. 271-285. <https://doi.org/10.36348/sijlcj.2023.v06i05.003>

²² GEORGE, T. E., KARATU, K., and EDWARD, A. "An evaluation of the environmental impact assessment practice in Uganda: Challenges and opportunities for achieving sustainable development". *Heliyon*, v. 6, n. 9, 2020, pp. e04758. <https://doi.org/10.1016/j.heliyon.2020.e04758>

empowerment to the population but also give a comprehensive overview of the environmental consequences that could be experienced by any development projects that is approved. Further to the buffering of such practises, the Aarhus Convention has been instrumental, and its principles have to be publicly adopted.²³ Another significant improvement is capacity building in regions where poor enforcement mechanisms exist. Majority of developing countries lack resources to implement and monitor EIAs effectively.²⁴

Additionally, social and economic effects should be integrated into the EIA. In most instances the EIAs tend to be more focused on the environmental aspects, ignoring that the projects might impact socially and economically. Nations can transform sustainable development to be multidimensional by increasing the scopes of EIA, i.e., the assessment of community welfare, culture, and long-term economic advantages.²⁵ Finally, there must be international cooperation and best practise sharing to improve international homogeneity in EIA systems.²⁶ Countries could learn their experiences and refine those experiences, modulating the experience of their successful counterparts to their own requirements.²⁷

2.4 Theoretical framework

To examine the legality of the application of EIA in international environmental treaties the study uses two theories: Institutional Theory and Sustainable Development Theory.

2.4.1 Institutional theory

Institutional Theory presupposes that organisational behaviour including policy implementation like EIAs is highly reliant on the specific institutional world surrounding it, comprising official regulations, norms and cultural expectations (DiMaggio and Powell, 1983).²⁸ This theory suggests that institutional structures, the means of enforcement and the politics of different countries shape EIAs as a form of institutional exercise. Institutional Theory helps explain the difference in EIA implementation in different regions through assessing how political goodwill, legal frameworks and institutional

²³ ANTHONIO-APEDZI, B. K. "Environmental impact assessment: Towards the concept of sustainable development". University of Birmingham. 2020. Available at: <https://etheses.bham.ac.uk/id/eprint/10252/> (accessed on 28 August 2026).

²⁴ ADELAKUN, B. O., ANTWI, B. O., NTIAKOH, A., and EZIEFULE, A. O. "Leveraging AI for sustainable accounting: Developing models for environmental impact assessment and reporting". *Finance & Accounting Research Journal*, v. 6, n. 6, 2024, pp. 1017-1048. <https://doi.org/10.51594/FARJ.V6I6.1234>

²⁵ MORRISON-SAUNDERS, A. Advanced introduction to environmental impact assessment. Second edition. Edward Elgar Publishing. 2023. Available at: <https://www.e-elgar.com/shop/gbp/advanced-introduction-to-environmental-impact-assessment-9781803922133.html> (accessed on 28 August 2026).

²⁶ RAAB, C. D. "Information privacy, impact assessment, and the place of ethics". *Computer Law & Security Review*, v. 37, 2020, pp. 105404. <https://doi.org/10.1016/j.clsr.2020.105404>

²⁷ LODHIA, S. K. (ed.). "Mining and sustainable development: Current issues". Routledge. 2018. <https://doi.org/10.4324/9781315121390>

²⁸ DIMAGGIO, P. J., and POWELL, W. W. "The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields". *American Sociological Review*, v. 48, n. 2, 1983, pp. 147-160. <https://doi.org/10.2307/2095101>

capacity affect the enforcement of environmental laws.²⁹

2.4.2 Sustainable development theory

Sustainable Development Theory, as defined by the Brundtland Commission (1987)³⁰, demands the inseparability of environmental, economic and social concerns in the era of making decisions in the sense that development must meet the needs of the present generation without compromising the ability of future generations to meet their own needs. It also compels EIAs to focus on the reduction of environmental harm, but also evaluate the social and economic impacts of development projects.³¹ Applying this theory will help to understand the importance of EIAs in developing sustainability through encouraging decision-makers to consider the long-term impact and include sustainability goals into the development planning.

These theories will help this study assess the performance of global EIA frameworks in promoting sustainable development and the degree to which institutional and environmental governance practises hamper or enhance their performance.

2.5 Literature gap

Although the significance of EIAs in promoting sustainable development has been studied extensively, no holistic research exists on the effectiveness of EIAs concerning global environmental agreements. Many studies on EIAs discuss either their procedural aspect or its environmental impact, yet lack of research exploring critically the legal framework, application issues, and uneven application exist. This research paper aims to address this gap by concentrating on the legal capacity and effectiveness of the EIAs specifically in the international treaties and conventions.

3. Methodological approach: Doctrinal and comparative legal analysis

3.1 Doctrinal legal method

The methodology of this article consists of a doctrinal and comparative legal approach. The doctrinal aspect studies the legal sense, normative order and institutional implications of EIA-related provisions on the Espoo Convention, CBD and UNFCCC. Articles 31 and 32 of the Vienna Convention on the Law of Treaties are used to guide the analysis, which stipulates that the provisions of treaties must be interpreted in good faith, in a manner that reflects their ordinary meaning, context, object and purpose, and, where appropriate, supplementary interpretive aids.³² The comparative aspect will use

²⁹ CHIU, I. H-Y. "An institutional theory of corporate regulation". *Current Legal Problems*, v. 71, n. 1, 2018, pp. 279-334. <https://doi.org/10.1093/clp/cuy006>

³⁰ WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT. "Our common future". Oxford University Press. 1987. Available at: <https://digitallibrary.un.org/record/139811> (accessed on 28 August 2026).

³¹ ROOS, C., CILLIERS, D. P., RETIEF, F. P., ALBERTS, R. C., and BOND, A. J. "Regulators' perceptions of environmental impact assessment (EIA) benefits in a sustainable development context". *Environmental Impact Assessment Review*, v. 81, 2020, pp. 106360. <https://doi.org/10.1016/j.eiar.2019.106360>

³² VILLIGER, M. E. "Articles 31 and 32 of the Vienna Convention on the Law of Treaties in the Case-Law of the European Court of Human Rights". In BROHMER, J. et al. (eds.) *Internationale Gemeinschaft und Menschenrechte: Festschrift fuer Georg Ress zum 70. Geburtstag am 21. Januar 2005*. Carl Heymanns, 2005. Available at: <https://www.cambridge.org/core/books/static-and->

the same method of analysis of all conventions in terms of: normative precision, binding force, procedural specificity, compliance architecture and domestic implementation capacity. This does not subject each convention to a descriptive treatment, but rather allows a parallel evaluation of the extent to which each treaty transforms EIA into a general environmental principle into a legal obligation. The legal materials chosen consist of treaty texts, protocols, Conference of the Parties (COP) decisions, compliance materials, judicial decisions and scholarly commentary. Espoo Convention is chosen as it is the most direct treaty on transboundary EIA, on the international level. The CBD is chosen due to the fact that Article 14 directly attributes EIA to the protection of biodiversity.³³

The reason why UNFCCC is taken is that the issue of climate-related assessment is more and more impactful on the practice of EIA, despite the fact that the Convention lacks a comprehensive EIA procedure. The Aarhus Convention is employed as a complementary convention since it enhances public participation, access to information and access to justice in decision making on the environment. International judicial references have also been used in the article especially in the rulings of the International Court of Justice (ICJ) in *Pulp Mills on the River Uruguay*, *Certain Activities Carried Out by Nicaragua in the Border Area* and *Construction of a Road in Costa Rica along the San Juan River*. The significance of these decisions is that the ICJ acknowledged EIA to be one of the elements of international environmental due diligence in cases where there is a threat of severe transboundary harm.

3.2 Comparative analytical framework

The comparative analysis is organised around the five criteria defined in Section 1.2:

- Normative precision;
- Binding force;
- Procedural specificity;
- Compliance architecture;
- Domestic implementation capacity.

These criteria are applied consistently to the Espoo Convention, the CBD and the UNFCCC. The Aarhus Convention is assessed as a complementary procedural framework because it strengthens access to information, public participation and access to justice rather than establishing a complete EIA system. Using one common framework enables a parallel evaluation of the extent to which each regime translates EIA from a general environmental principle into an operational legal obligation.

3.3 Choice and hierarchy of legal materials

The selection of instruments is purposive and criterion-based. A regime was included where it either establishes an express EIA obligation, performs a functionally equivalent assessment role, or supplies procedural rights necessary for effective EIA. The Espoo Convention is selected as the principal treaty because it directly regulates transboundary EIA through binding procedural duties. The CBD is included because Article 14 expressly connects project assessment with biodiversity protection, although its qualified wording

evolutive-treaty-interpretation/bibliography/5B8D7077CCEFA6473DC0032A34E52DAD (accessed on 28 August 2026).

³³ BOND, A., POPE, J., MORRISON-SAUNDERS, A., and RETIEF, F. "Taking an environmental ethics perspective to understand what we should expect from EIA in terms of biodiversity protection". *Environmental Impact Assessment Review*, 2021, v. 86, pp. 106508. <https://doi.org/10.1016/j.eiar.2020.106508>

leaves substantial discretion to parties. The UNFCCC is included to evaluate the indirect integration of climate considerations through planning, reporting and nationally determined measures rather than through a dedicated project-level EIA procedure. The Aarhus Convention is treated as a complementary procedural regime because access to information, public participation and access to justice condition the accountability of EIA decision-making.

The legal materials are considered in a hierarchy reflecting their authority and analytical function: treaty texts and protocols; official decisions, guidance and compliance materials produced by treaty bodies; judgments of international and domestic courts; domestic legislation and administrative frameworks; and peer-reviewed scholarly commentary. Materials were selected for direct relevance to the five criteria of legal effectiveness, authoritative provenance and, for secondary literature, contemporary relevance. The European Union and India are used as contrasting illustrations of domestic operationalisation rather than as a statistically representative sample. This design keeps the inquiry doctrinal and comparative while making the basis of source selection transparent and replicable.

4. Integrated comparative findings and discussion

This section integrates the treaty comparison with cross-cutting compliance themes, international judicial recognition, domestic implementation and recurrent structural weaknesses. The analysis applies the five criteria established in Sections 1.2 and 3.2 throughout, allowing the findings to be discussed as one coherent assessment of legal effectiveness rather than as disconnected descriptive chapters.

4.1 Comparative legal analysis of eia frameworks under global conventions

The primary goal of this analysis is the comparison between normative framework and EIAs to the three major international environmental agreements; the Espoo Convention (1991), the CBD, and the UNFCCC. Within the analysis, the binding nature of the EIA provisions, enforcement mechanisms, and procedural requirements to implement EIAs within these conventions are included. The outcome of this comparative research will provide a clear vision of how these conventions challenge the work of EIAs and which loopholes might be in their practise.

Table 1. Comparative legal effectiveness of the selected EIA regimes.

Convention /Framework	EIA relevance	Strengths	Weaknesses	Legal effectiveness assessment
Espoo Convention	Directly regulates transboundary EIA	Binding procedure, notification, consultation, public participation	Compliance system is mainly facilitative, not sanction-based	Strongest legal model, but enforcement remains limited
CBD	Article 14 requires EIA for projects likely to affect biodiversity	Links EIA to biodiversity conservation and precaution	Broad discretion left to states; limited procedural detail	Moderate effectiveness; dependent on domestic law

Convention /Framework	EIA relevance	Strengths	Weaknesses	Legal effectiveness assessment
UNFCCC	Indirectly supports climate-related assessment through planning and reporting	Connects environmental assessment with climate mitigation/adaptation	No direct EIA procedure; weak operational specificity	Limited direct EIA effectiveness
Aarhus Convention	Supports EIA through information, participation and justice rights	Strengthens transparency and accountability	Regional scope; does not itself create a full EIA system	Procedural support framework

The Espoo Convention became the first legally binding international convention specifically targeting EIAs within a cross-border context. The convention offers guidelines to implement EIAs in the project that may have significant adverse impact on the environment, across national boundaries. This is particularly true with transboundary environmental impacts as in the example of large-scale infrastructural projects such as dams, highways, and industrial facilities.³⁴

Key legal provisions:

Binding nature: The Espoo Convention is legally binding to its signatory countries and therefore is an essential instrument in the commitment that EIAs are executed on proposals which have the potential to impact the atmosphere beyond formal limits. The convention defines how the affected countries are notified, consultations, and provision of relevant information about planned projects.

Procedural requirements: The convention will include the following steps that will be used when conducting EIAs, notification of affected parties, exchange of information and consultations.³⁵ There is also the need to engage citizens and ensuring that citizens of the impacted countries have the opportunity to be part of the decision-making process.³⁶

Enforcement mechanisms: The Espoo Convention is procedurally strong in requiring EIAs but provides no strong enforcement mechanisms. The imposition of any sanctions against the countries that fail to abide by the provisions of the convention is not a formal legal procedure. Among these constraints is the lack of enforceable mechanisms by which countries can be held responsible in terms of non-conformity.³⁷

³⁴ CASHMORE, M., and SKRYLNIKOV, D. "Extraterritorial political representation in environmental planning: Patterns and practices under the UNECE Espoo Convention on Environmental Impact Assessment in a Transboundary Context". *Environmental Impact Assessment Review*, v. 117, 2026, pp. 108186. <https://doi.org/10.1016/j.eiar.2025.108186>

³⁵ AREGBESHOLA, M., MEARN, K., and DONALDSON, R. "Interested and affected parties (I&APs) and consultants' viewpoints on the public participation process of the Gautrain Environmental Impact Assessment (EIA)". *Journal of Public Administration*, v. 46, n. 4, 2011, pp. 1274-1287. Available at: <https://hdl.handle.net/10520/EJC120851> (accessed on 28 August 2026).

³⁶ MAYER, B. "Environmental assessments in the context of climate change: The role of the UN Economic Commission for Europe". *Review of European, Comparative & International Environmental Law*, v. 28, n. 1, 2019, pp. 82-93. <https://doi.org/10.1111/reel.12263>

³⁷ CHUFFART, R., and JABOUR, J. "Environmental impact assessment in the Polar Regions". In *The Routledge Handbook of Polar Law*, Routledge. 2023, pp. 189-204. Available at:

The CBD was adopted in 1992 and its issue was to conserve biodiversity, to use biological resources in a sustainable way and to share benefits realised when genetic resources are used fairly and equally. The CBD underscores the necessity to carry out EIAs on any projects which can have any effect on the biodiversity, thereby ensuring that the development activities cannot lead to irreversible change of the ecosystems and species.³⁸

Key legal provisions:

Binding nature: The CBD, similar to the Espoo Convention, is legally binding to the signatory countries. Article 14 of the CBD specifically mentions the use of EIAs as a tool of detecting influence of a project on biodiversity.

Procedural requirements: The CBD requests EIAs in situations where a project can negatively impact biodiversity, however it does not specify or define detailed steps on how to go about undertaking such studies. Rather, it asks parties to build their national EIA frameworks that comply with the objectives of the convention. This flexibility enables countries to customise their EIA procedures to local conditions, however, it also causes a great diversity in EIA practises across nations.³⁹

Enforcement mechanisms: The CBD offers the ability to observe development in the conservation of biodiversity and application of EIAs, similar to the Espoo Convention, however it lacks particular enforcement mechanisms of non-compliance. Although the convention is convincing to cooperate and make reports, sanctions against countries that cannot effectively conduct EIA processes are not formally administered.⁴⁰

The UNFCCC is a fundamental international convention that seeks to regulate global climate change. Though it does not specifically dwell on EIAs, UNFCCC highlights the importance of nations to evaluate the climate consequences of their development initiatives. EIAs are an important instrument to evaluate the long term environmental and climate impacts of projects especially when considering sustainable development.⁴¹

Key legal provisions:

Binding nature: The UNFCCC is a binding agreement among its members and obliges them to devise and apply measures to reduce and manage climate change. Although EIAs are not obligatory, the National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs) support the idea of countries taking into account the effects of environmental issues, such as climate change, in their planning. By so doing,

<https://www.taylorfrancis.com/books/edit/10.4324/9781003404828/routledge-handbook-polar-law-rachael-johnstone-yoshifumi-tanaka-vibe-ulfbeck> (accessed on 28 August 2026).

³⁸ ESSL, F., LATOMBE, G., LENZNER, B., PAGAD, S., SEEBENS, H., and SMITH, K., et al. "The Convention on Biological Diversity's post-2020 target on invasive alien species: What should it include and how should it be monitored". *NeoBiota*, v. 62, n. 2020, pp. 99-121. <https://doi.org/10.3897/neobiota.62.53972>

³⁹ TSIUOMANI, E. "Convention on Biological Diversity: A review of the post-2020 global biodiversity framework working group negotiations". *Environmental Policy and Law*, v. 50, n. 1-2, 2020, pp. 55-59. <https://doi.org/10.3233/EPL-200207>

⁴⁰ KEIPER, F., and ATANASSOVA, A. "Regulation of synthetic biology: Developments under the Convention on Biological Diversity and its protocols". *Frontiers in Bioengineering and Biotechnology*, v. 8, 2020, pp. 310. <https://doi.org/10.3389/fbioe.2020.00310>

⁴¹ HICKMANN, T., WIDERBERG, O., LEDERER, M., and PATTERBERG, P. "The United Nations Framework Convention on Climate Change Secretariat as an orchestrator in global climate policymaking". *International Review of Administrative Sciences*, v. 87, n. 1, 2021, pp. 21-38. <https://doi.org/10.26083/tuprints-00017788>

the indirect encouragement of the usage of EIAs in climate-related assessments is done through the UNFCCC.

Procedural requirements: According to the UNFCCC, environmental assessments must consider the effects of climate change. This is particularly applicable to projects that can increase greenhouse gas emissions or act as a barrier to climate adaptation initiatives. Nonetheless, the convention does not dictate particular EIA practises, and the administration of climate change evaluations is at the country-level.⁴²

Enforcement mechanisms: The UNFCCC incorporates measures of monitoring and reporting of climate actions by periodically updating on NDCs. Yet, just as with the other two conventions, it has no specific mechanisms to enforce that EIA is regularly practised.⁴³

4.2 Structured doctrinal evaluation of supplementary documents and reports

Besides studying the legal texts of the conventions, the study reviews other documents such as guidelines, protocols, and international reports to comprehend the application of the conventions in practise. Such documents suggest several recurring themes identified through Structured doctrinal evaluation:

Public participation: The three conventions all value the role of the people in the EIA process. The Aarhus Convention especially offers a well-established framework through which the general population can access environmental information and have a chance to contribute to decision-making. Nevertheless, there are still difficulties in making sure that the participation of the population is not empty and that the concerns of the marginalised communities have a chance to be heard.⁴⁴

Institutional capacity: EIAs can only be effectively implemented through strong institutions at the national level. Most countries particularly in the developing world, are deficient in technical know-how and institutional capability to undertake thorough EIAs. It leads to lapses in the assessment process where projects can be undertaken without having a complete understanding of their environmental impacts.

Sustainability goals: The general idea of the conventions is sustainable development, yet too often there is no connection between the legal frameworks and where they are applied. Whereas EIAs are meant to establish that development projects will lead to sustainabilities, most people see it as a formal process instead of a means to an end in terms of achieving long-term environmental targets.⁴⁵

4.3 Identification of enforcement challenges

Among the key research objectives, this study aims at uncovering the obstacles to

⁴² OZOR, N., NYAMBANE, A., ONUOHA, C. M., MAKOKHA, M. O., and M'MBOYI, F. "Nationally determined contributions implementation index, monitoring and tracking tools for selected countries in Africa". *African Technology Policy Studies Network*, 2020. Available at: <https://atpsnet.org/wp-content/uploads/2020/07/NDC-Implementation-Index-Report.pdf> (accessed on 28 August 2026).

⁴³ MEHROTRA, N., and BENJAMIN, E. O. "Evaluating the enhancement of the nationally determined contributions of developing countries: An international support programme perspective". *Climate Policy*, v. 22, n. 6, 2022, pp. 728-742. <https://doi.org/10.1080/14693062.2022.2071824>

⁴⁴ SIMPSON, N. P., and BASTA, C. "Sufficiently capable for effective participation in environmental impact assessment". *Environmental Impact Assessment Review*, v. 70, 2018, pp. 57-70. <https://doi.org/10.1016/j.eiar.2018.03.004>

⁴⁵ HASAN, M. A., NAHIDUZZAMAN, K. M., and ALDOSARY, A. S. "Public participation in EIA: A comparative study of projects run by governmental and non-governmental organisations". *Environmental Impact Assessment Review*, v. 72, 2018, pp. 12-24. <https://doi.org/10.1016/j.eiar.2018.05.001>

effective implementation of EIA regulations. Through an evaluation of the stipulations within the legal texts and through the Structured doctrinal evaluation of auxiliary documents, a number of barriers to enforcement can be identified:

Weak enforcement mechanisms: Although the legal framework of the Espoo Convention, CBD, and UNFCCC set rules regarding EIAs, they do not have strong enforcement mechanisms. The fact that there are no legally binding provisions to implement EIA and that monitoring systems are weak makes it hard to hold countries accountable when the requirements are not met.

Inconsistent application: There is inconsistency in the interpretation and implementation of EIA requirements by countries. Full EIA processes have been designed in some countries, but minimal or patchy in others. This contradiction is caused by different legal frameworks, political goodwill, and institutional potential.

Lack of accountability: The legal systems fail to give clear accountability measures to projects that violate the EIA requirements. In the absence of practical sanctions or penalties, there is little to discourage non-compliance. This means that projects that are not environmentally sensitive might go unnoticed.⁴⁶

Together, the comparative doctrinal analysis demonstrates that all three conventions formally recognise the relevance of the EIA, although their stipulations regarding the metric of normative specificity, legal force, system of enforcement, and local modalisation are deeply differentiated. The Espoo Convention shows a comparatively stronger procedural specificity and transboundary profile, but the compliance controls are primarily facilitative, rather than coercive. The CBD incorporates EIA within a strategy of biodiversity protection, yet leaves much of the discretion to national governments, resulting in fragmentary implementation. Though the UNFCCC is binding in its commitment toward climate, it fails to actively engage EIA in its provisions; however, it incorporates it indirectly, whereby it pertains to nationally determined tools that also render it ineffective in negotiation procedures. The translation of treaty commitment into and through a consistent regulatory practise in all three regimes is constrained by enforcement failure, discretionary text, and unequal institutional capacity. In this respect, the legal architecture of the international EIA commitments remains architecturally underdeveloped: it is normatively consistent but lacks the integrated supervisory and accountability structures that would enable efficient and consistent enforcement.

4.4 International judicial recognition of EIA obligations

International judicial decisions strengthen the legal basis of EIA by linking assessment duties to due diligence and prevention of transboundary harm. In *Pulp Mills on the River Uruguay*, the International Court of Justice held that conducting an EIA may be required under general international law where there is a risk of significant transboundary harm. This is important because it moves EIA beyond treaty-specific procedure and connects it to a broader duty of environmental prevention. The ICJ reinforced this approach in the joined *Costa Rica/Nicaragua environmental disputes*.⁴⁷ In *Construction of a Road in Costa Rica along the San Juan River*, the Court found that Costa Rica breached its obligation to conduct an EIA for road construction works with

⁴⁶ LOOMIS, J. J., and DZIEDZIC, M. "Evaluating EIA systems' effectiveness: A state of the art". 2018. Ibid.

⁴⁷ MADATHIL, R. "Costa Rica v Nicaragua: Case Analysis - 2015 ICJ Rep 665". *Indian Journal of Law and Legal Research*, v. 5, n. 2, 2023, pp. 1. Available at: https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/injlolw11§ion=196 (accessed on 28 August 2026).

possible transboundary environmental effects. These cases show that EIA has become a legally relevant due diligence requirement, particularly where significant cross-border environmental risk is foreseeable.⁴⁸ However, the ICJ case law also shows the limits of legal effectiveness. The Court recognises the duty to conduct EIA, but it does not prescribe a detailed universal methodology for screening, scoping, public participation or post-approval monitoring. Therefore, judicial recognition strengthens the legal status of EIA, but domestic law remains necessary to operationalise the duty.

4.5 Domestic implementation as a test of legal effectiveness

International conventions are normative frameworks in EIA, and most legal traditions lack these commitments expressly. Instead, they are useful when narrowed to domestic incorporation, administrative enforcement, and judicial review. The efficacy of treaty-established EIA requirements should then be viewed through the lens of their transposition into national legal systems. The international provisions are all programmatic and have no effect on the regulation without domestic implementation.

4.5.1 European union: Institutionalised EIA framework and judicial supervision

One of the most well-documented cases of domestic implementation of international EIA principles is provided by European Union. The processual requirements, including screening, scoping, public participation, and post-consent monitoring, are laid down in European Union Environmental Impact Assessment Directive (Directive 2011/92/EU, revised under Directive 2014/52/EU). The principles vested in the Directive concur with the Espoo Convention and Aarhus Convention, particularly on transboundary consultation and access to justice. It is important to note that EIA requirements in the EU are open to judicial review by the national courts and the Court of Justice of the European Union (CJEU). The CJEU has again emphasised that Member States are obligated to make meaningful public participation available and that they cannot escape the enforcement of EIA through formalities. This jurisprudence strengthens the practical enforceability of EIA processes and demonstrates how international principles can become normative when subject to supranational judicial review. However, the EU does not lack structural weaknesses. Strategic project segmentation and threshold manipulations also continue to pose a challenge to regulatory control. Nonetheless, the availability of such binding rules and judicial review procedures enhances dramatically the legal enforceability of EIA obligations compared to international systems alone.

4.5.2 India: Structural implementation gaps and formal adoption

India is a developing jurisdiction where EIA is already implemented in domestic law, but structural enforcement challenges remain. The Environment Impact Assessment Notification 2006 creates an environmental-clearance procedure under the Environment Protection Act 1986 for scheduled categories of projects. Although the regulatory structure requires environmental studies, public consultation, expert appraisal and clearance conditions, implementation has often been criticised for limited administrative capacity, political pressure to accelerate infrastructure growth and inconsistency in environmental impact reporting. Weak public participation, limited consultation in

⁴⁸ PECCHIOLO, M. "The requirement for environmental impact assessment in cases of transboundary harm in the jurisprudence of the International Court of Justice: How far have we come". *PA Persona e Amministrazione*, v. 14, n. 1, 2024, pp. 695-724. Available at: <https://journals.uniurb.it/index.php/pea/article/view/4857> (accessed on 28 August 2026).

practice and poor post-approval follow-up have also been noted. Public-interest litigation and the National Green Tribunal (NGT) can provide accountability by reviewing doubtful clearances and procedural breaches. Nevertheless, institutional capacity limitations and development pressures continue to hinder enforcement. This comparison shows that the legal effectiveness of EIA depends not only on treaty design, but also on institutional capacity, judicial independence and administrative transparency.

4.5.3 Implications for the analysis of international legal effectiveness

The domestic review reveals that international EIA requirements can become operational only when national legal systems translate them into clear procedures, external checks and judicial oversight. Where domestic legislation specifies screening, scoping, public participation, monitoring and review, EIA systems become more normatively intelligible and practically enforceable. Conversely, where administrative capacity is weak or political interference is strong, treaty-based EIA requirements may remain largely formal. In that sense, the legal efficacy of international environmental treaties must be assessed not only through treaty text but also through the institutional route by which norms are implemented at state level. Without that domestic enforcement route, international EIA provisions risk becoming declaratory commitments rather than regulatory instruments.

4.6 Structural pathologies undermining EIA effectiveness

EIA regimes have been established through international treaties and domestic law, but their effectiveness is often weakened by structural problems in administrative practice. These problems are not confined to treaty drafting; they also arise from weak compliance systems, limited monitoring, strategic project design and uneven access to judicial review. Operational inefficiencies and gaps in normative design therefore remain among the most significant challenges to legal effectiveness.

4.6.1 Project segmentation and threshold avoidance

Project segmentation in which mega-infrastructure or mega-industrial developments are artificially disaggregated into small units to avoid the statutory constraints, which must be compulsory and which may trigger the statutory EIA requirements, is one structural weakness endemic. Developers can avoid cumulative and non-cumulative assessment of environmental impacts when interrelated stages are handled as projects. Formal prohibition of such fragmentation applies in a wide variety of jurisdictions, but in varying ways, particularly where administrative authorities enjoy great discretion. This action is not compatible with the preventive reasoning of environmental assessment and damages the integrity of regulations.

4.6.2 Strategic under-scoping and weak alternatives analysis

Another typical pathology is the strategic narrowing of the scope of assessment during the early stages. Scoping phase identifies the specific environmental impacts and options that will be explored. In practise, authorities or lobby groups can represent the scope in a narrow sense, neglecting the cumulative impacts, global ecological dangers, or climate consequences. Additionally, the procedure of evaluating feasible alternatives like the no-project choice is sometimes approached in a superficial manner. Without substantive comparative treatment of alternatives, the EIA becomes, in practise, a

procedural decision in favour of a previously determined decision rather than a planning aid.

4.6.3 Instrumentalisation of public participation

The participation of the people in the governance of the environment is also an established pillar of effective environmental governance using mechanisms such as the Espoo and Aarhus Conventions. However, the mechanisms of participation may be reduced to formal consultations which have little weight in final decisions. The short consultation period, a lack of access to technical documents, and the lack of attentiveness to public submissions may compromise the content of participation. This leads to adherence to procedures rather than deliberative participation, which weakens accountability.

4.6.4 Post-approval monitoring and enforcement gaps

Finally, EIA regimes are prone to concentrate on pre-consent assessment without considering post-approval monitoring. The mitigation conditions are required but may continue to be weakly applied because of lack of inspection capacity and institutional disaggregation of responsibility. This implementation loophole compromises the preventative nature of EIAs and reduces their long-term regulatory effectiveness.

4.7 Integrated synthesis of legal effectiveness

The integrated findings establish a hierarchy rather than a uniform international EIA system. The Espoo Convention provides the strongest direct procedural model; the CBD supplies a qualified biodiversity-related obligation; the UNFCCC contributes indirectly through climate planning and reporting; and the Aarhus Convention reinforces transparency, participation and review. International judicial recognition strengthens EIA as an aspect of environmental due diligence, but it does not replace detailed treaty or domestic procedure.

Legal effectiveness therefore depends on the interaction of normative precision, binding force, procedural specificity, compliance architecture and domestic implementation capacity. Weakness in any one element can reduce EIA to formal documentation, while their combined operation can turn assessment into a preventive and accountable decision-making process. This synthesis directly links the treaty analysis, enforcement discussion, domestic illustrations and structural pathologies developed across Section 4.

5. Conclusion and recommendations

The EIAs of Global environmental conventions such as Espoo Convention, CBD and UNFCCC were critically addressed in the paper under legal performance. The outcomes showed that although the protocols are promising to be used in the implementation of EIAs, ignorance of their article, unequal implementation and deficiency of binding authorities are common features that reduce their effectiveness. The Espoo Convention can offer a viable juridical grid especially to cross-border environmental effects but is weak in enforcing these effects wondering why they should not be followed. Similarly, although the CBD and UNFCCC emphasise the need of EIAs, they do not provide specific operationalisations, as well as general enforcement frameworks. These legal loopholes represent a significant challenge to achieving the sustainable development goal. Regional EIA variability is one of the issues that were identified during the course of this research.

The developed countries with legal frameworks and institutional capabilities will be more likely to succeed in adopting EIAs.

Institutional failures, political volatilities, and unsuitable resources, on the other hand, are challenges faced by developing countries making it difficult to apply uniformly EIA regulations. These findings harmonise with the larger environmental governance issues where developing countries are struggling with the capacity gap in implementing environmental laws. The analysis also suggested the importance of mobilisation of the people and institutional capacity in transforming EIAs into a winning tool. However, despite the Aarhus Convention providing a chance of participation by the masses, majority of areas still face hindrances that block substantive participation, thereby compromising success of the EIA process. Lastly, despite the fact that the global conventions provide a framework within which the EIAs must be conducted, the lack of enforceable provisions, methods of enforcement, and unequal application across regions dramatically undermine their effectiveness. These findings bring up the thought that more institutional support and procedural specificity, as well as more inter-country cooperation, are needed to ensure that EIAs contributes positively to more sustainable growth.

5.1 Recommendations

Strengthen Enforcement Approaches: International environmental commitments need to instal additional robust and binding enforcement provisions that would ratify obedience to the treatment provisions of EIA by states. This may include the termination of non-compliance and more vivid accountability structures.

Enhance Institutional Capacity: International organisations can support counties with limited resources and weak institutions by training, helping them with technical and financial assistance to build the capacity of local environmental agencies to implement effective EIAs.

Include Social and Economic impacts: EIAs should be more inclusive, meaning that they should be used to assess not only environmental impacts, but also social and economic ones. It will provide a more detailed picture of the project sustainability.

Improve Community Engagement: Greater emphasis must be placed on offering meaningful participation by the impacted communities in the EIA process. Transparency mechanisms must be intensified to allow better public involvement and feedback.

Enable Transnational Cooperation: Countries should collaborate and share best practises and experience to improve EIA systems on a global scale. Globalisation of EIA standards may be helpful in ensuring uniformity, and also making EIAs effective around the globe.

5.2 Limitations

The primary source employed during the research, such as the texts of the laws, case study, and scholarly sources, limit its ability to capture the current state of affairs or individual experience in conducting EIA. The paper suggests briefly some international environmental conventions as well, but they are not necessarily reflective of international regime heterogeneity.

5.3 Future research

Additional research may be conducted using field research/ survey to determine the real barriers to implementing EIA rules/ regulations in the developing countries by looking at the real implementation of EIA regulations in the developing countries. Further

digging into the sociology of EIAs (such as a community participation) and integration of local wisdom would also provide an insight on how EIAs can be made more approachable and efficient towards achieving sustainability goals. In addition, the ideas of technology to improve EIA practises can give new opportunities to improve environmental assessment in the digital era.

6. Declaration on use of Artificial Intelligence (AI) tools

The author acknowledges that AI-assisted tools were used only to support language editing, structural reorganisation and consistency checking during the revision process. The author reviewed and verified the manuscript's legal analysis, treaty interpretation, source selection and conclusions and accepts full responsibility for the final content.

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