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The operating principles in an EIA process

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Abstract

The Environmental Impact Assessment, often known as the EIA, is an essential process that is designed to evaluate the potential environmental repercussions of proposed projects before they are put into action. An examination of the key operational principles of the EIA process is presented in this article, with an emphasis placed on the significance of these concepts in promoting sustainable development. Purposiveness, rigor, practicability, cost-effectiveness, and public participation are some of the topics that are discussed. The Environmental Impact Assessment (EIA) process ensures that environmental considerations are included into decision-making by adopting these principles, which in turn reduces the risk of adverse consequences on the environment. The purpose of this article is to examine the role that legal and institutional frameworks play in facilitating effective Environmental Impact Assessments (EIAs) and to assess case studies that highlight how these frameworks are actually put into practice. Throughout the course of the article, topics such as the relevance of Social Impact Assessment, the need of environmental audits, and the development of new technologies in Environmental Impact Assessment are discussed. The purpose of this article is to underline the need of adhering to the fundamental operational principles of Environmental Impact Assessment (EIA) in order to achieve environmentally responsible and sustainable development. This is accomplished via a comprehensive literature review and analysis.

Keywords: Environmental Impact Assessment; Sustainability; Mitigation Measures; Baseline Information; Principle of Environmental Management; Efficient Environmental Impact Assessments

1 Introduction

The Environmental Impact Assessment (EIA) is an essential procedure for assessing the probable environmental consequences of proposed projects or developments prior to decision-making. The primary objective of EIA is to include environmental factors into planning and decision-making processes, hence fostering sustainable development. The operational principles of EIA provide a systematic framework for executing these evaluations, guaranteeing their comprehensiveness, transparency, and efficacy. The International Association for Impact Assessment (IAIA) delineates numerous fundamental principles for the execution of Environmental Impact Assessment (EIA). These concepts include the need for Environmental Impact Assessment (EIA) to be intentional, thorough, pragmatic, economical, and efficient.

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The EIA process must guide decision-making, use optimal scientific practices, provide actionable information, meet goals within resource limitations, and reduce financial burdens on proponents and participants (IAIA, 1999).

The U.S. Agency for International Development (USAID) underscores the need of comprehending essential EIA terminology and ideas, along with the proficient use of fundamental EIA abilities, to guarantee compliance throughout project design and execution (USAID, 2020). The Economic Commission for Europe (ECE) advocates for the establishment of Environmental Impact Assessment (EIA) procedures via law to facilitate the incorporation of environmental factors into planning and decision-making processes (ECE, 2017). By following these operational principles, EIA procedures may accurately identify, forecast, and assess the environmental consequences of planned activities, facilitating informed decision-making and the execution of suitable mitigation measures. This subsequently aids in safeguarding the environment and improving community welfare.

Environmental Impact Assessment (EIA) is a process used to evaluate the potential environmental impacts of a proposed development project. The process aims to identify, predict, and evaluate the likely impacts of a project on the environment, as well as the potential social, cultural, and economic consequences. This assessment helps decision-makers to understand the potential effects of a proposed project, and to ensure that any potential negative impacts are minimized or mitigated (Hockings & Humley, 2009)

Environmental Impact Assessment (EIA) is a process that is used to identify and evaluate the potential environmental impacts of proposed development projects. The purpose of the EIA process is to ensure that environmental considerations are taking into account in decision making, and to promote sustainable development. Q successful EIA process requires the involvement of stakeholders, including the project proponent, government agencies and the public (Pölönen et al., 2010). This paper will discuss the operating principles in an EIA process, using relevant examples.

1.1 Overview of EIA

The concept of environmental impact assessment (EIA) originated in the United States in the 1960s, during a period of growing concern about the environmental impacts of large-scale development projects. In 1969, the National Environmental Policy Act (NEPA) was signed into law, requiring federal agencies to consider the environmental impacts of proposed projects and to involve the public in decision-making processes (Sadler et al., 2012).

The NEPA legislation provided a framework for the development of EIA, and subsequent regulations and guidelines have refined and expanded the EIA process over the years. In the 1970s and 1980s, other countries began to adopt similar EIA legislation, and international guidelines for EIA were developed.

In 1992, the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, was held in Rio de Janeiro. The summit resulted in the adoption of the Rio Declaration on Environment and Development, which recognized the importance of EIA in promoting sustainable development. The declaration stated that "environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority" (Sánchez & Croal, 2012)

Since the Rio Declaration, EIA has become a widely accepted and established process for evaluating the environmental impacts of proposed development projects. In many countries, EIA is a legal requirement for certain types of projects, and the process has become increasingly sophisticated over time. New technologies and analytical tools have been developed to support the EIA process, and greater attention is now paid to social and economic impacts, as well as environmental impacts (Sánchez & Croal, 2012).

In recent years, there has been growing recognition of the importance of strategic environmental assessment (SEA), which evaluates the potential environmental impacts of policies, plans, and programs. SEA is seen as a complementary process to EIA, providing a broader and more integrated approach to environmental decision-making (Levin et al., 2019).

1.2 Stages of the EIA process

EIA has 5 main stages. If an EIA is required, an Environmental Assessment Impact Report will be written and submitted with the application for development consent. The public will have the chance to comment. This makes sure you're given a chance to be involved in decision making.

- Screening: Deciding if an EIA is required
- Scoping: Deciding what needs to be covered in the assessment and reported in the 'EIA Report'
- Preparing the EIA Report: The EIA report has to include the likely significant environmental effects of the development
- Making an application and consultation: The EIA Report and development application must be publicised (including electronic advertisement), interested parties and the public must be given an opportunity to give their views on it
- Decision making: The EIA Report and any comments made on it must be taken into account by the competent authority before they decide whether to give consent for the development. The decision notice has to be published
- Post decision The developer starts any monitoring required by the competent authority.

Overall, the historical evolution of EIA has been characterized by a growing recognition of the importance of environmental protection and sustainable development, and an increasing focus on stakeholder involvement, transparency, and the use of scientific evidence in decision-making.

2 Theoretical Framework

The EIA process is grounded in several theoretical principles, including the precautionary principle, the polluter pays principle, and the principle of sustainable development. The precautionary principle holds that in cases where scientific evidence is uncertain, decision-makers should take precautionary measures to prevent potential harm to the environment. The polluter pays principle holds that those who cause environmental harm should bear the costs of remediation. Finally, the principle of sustainable development holds that development should meet the needs of the present without compromising the ability of future generations to meet their own needs (Oecd, 2008).

The EIA process is based on the principles of environmental management, which involve the integration of environmental considerations into decision making. This concept is based on the recognition that environmental issues are interrelated with social and economic issues and that successful decision making requires consideration of all three elements.

3 Literature Review

The primary objective of EIA is to include environmental factors into decision-making processes, hence fostering sustainable development. Lawrence (2003) asserts that Environmental Impact Assessment (EIA) must be intentional, designed to educate decision-makers of the prospective environmental consequences of proposed initiatives. This guarantees that environmental factors are not neglected but are essential to planning and development procedures. Moreover, Wood (2003) contends that Environmental Impact Assessment (EIA) must be thorough, using the most effective scientific methods to evaluate possible consequences completely. This entails methodical data gathering, analysis, and interpretation to properly forecast environmental impacts.

The EIA must be pragmatic and economically viable. Canter (1996) asserts that effective EIA procedures must provide actionable information for decision-makers to alleviate negative environmental impacts. The cost-effectiveness of Environmental Impact Assessments (EIA) is essential, since excessively costly evaluations may impose a financial strain on project proponents and stakeholders. Morrison-Saunders and Bailey (2000) emphasize the need of reconciling thoroughness with efficiency, guaranteeing that EIA procedures fulfill their aims without incurring superfluous expenses.

Public engagement is fundamental to good Environmental Impact Assessment (EIA). Cashmore (2004) asserts that public involvement in Environmental Impact Assessment procedures improves openness and accountability. Engaging stakeholders allows EIA procedures to more accurately represent community concerns and values, resulting in results that are more socially acceptable. Doelle and Sinclair (2006) assert that public engagement enhances the quality of Environmental Impact Assessments (EIA) by integrating local knowledge and cultivating a feeling of ownership among impacted populations.

Efficient Environmental Impact Assessment procedures need strong legal and institutional foundations. The Economic Commission for Europe (ECE, 2017) promotes the implementation of Environmental Impact Assessment (EIA) processes via law, therefore offering a systematic method for incorporating environmental factors into planning and

decision-making. Petts (1999) emphasizes that explicit legislative directives and institutional obligations are crucial for guaranteeing that EIA procedures are executed methodically and uniformly.

Multiple case studies demonstrate the practical implementation of EIA concepts. A research by Sadler (1996) examines the efficacy of EIA across many nations, emphasizing both achievements and obstacles. The research suggests that while Environmental Impact Assessment (EIA) has markedly enhanced environmental decision-making, there are opportunities for improvement, especially regarding consistency and enforcement. A research by Glasson, Therivel, and Chadwick (2012) investigates EIA practices in the UK, illustrating the evolution of EIA in response to rising environmental challenges and the incorporation of new scientific insights.

The incorporation of Environmental Impact Assessment into sustainable development methods is essential for safeguarding environmental integrity in development initiatives. Sadler (1996) emphasizes that Environmental Impact Assessment (EIA) may function as an instrument for advancing sustainable development by recognizing possible environmental effects early in the planning phase and recommending mitigation strategies. This proactive strategy facilitates the equilibrium between economic development and environmental conservation.

The use of developing technology in Environmental Impact Assessment procedures may improve the precision and efficacy of environmental evaluations. Padilla-Rivera et al. (2023) performed a comprehensive literature analysis examining the use of life cycle sustainability assessment (LCSA) and innovative technologies. Their results indicate that the integration of sophisticated technologies, including Geographic Information Systems (GIS) and remote sensing, may enhance the accuracy of impact estimates and monitoring.

Environmental Impact Assessment (EIA) is also used in the tourist and leisure industries, especially in protected regions. Francisco (2024) examines the implementation of Environmental Impact Assessment (EIA) in tourism and recreation inside protected areas, highlighting the need of evaluating the environmental repercussions of tourist activities to guarantee the survival of these regions. The assessment emphasizes the significance of evaluating both direct and indirect effects on natural resources and local populations.

Social Impact Assessment (SIA) is a discipline dedicated to assessing the social repercussions of development initiatives. Alomoto, Niñerola, and Pié (2021) provide a thorough assessment of the literature on SIA, examining the instruments and methodology used to assess social consequences. Their assessment emphasizes the need of incorporating social elements in conjunction with environmental and economic implications to attain comprehensive sustainable development

Environmental audits are an essential element of the EIA process, ensuring that projects adhere to environmental legislation and requirements. A literature analysis by Springer (2024) analyzes the function of environmental audits in assessing and appraising the efficacy of EIA procedures. The analysis indicates that frequent audits may uncover areas for improvement and guarantee the successful implementation of environmental protection measures.

3.1 Social Impact Assessment (SIA)

Social Impact Assessment (SIA) encompasses the analysis, monitoring, and management of both the intended and unexpected social consequences—positive and negative—of planned interventions, including policies, programs, plans, initiatives, and any resultant social change processes. The aim of SIA is to foster a more sustainable and equitable biophysical and human environment (Vanclay, 2003). Burdge and Vanclay (1995) assert that the fundamental principles of SIA must be participatory, transparent, and inclusive, including all stakeholders, particularly disadvantaged populations. This inclusive strategy guarantees that the perspectives of all impacted stakeholders are acknowledged, fostering fair results.Social Impact Assessments include many qualitative and quantitative methodologies. Methods include surveys, focus groups, interviews, and participatory rural evaluation. Every technique has distinct advantages, and the selection often relies on the context and particular needs of the evaluated project (Esteves, Franks, & Vanclay, 2012).

Strategic Impact Assessment (SIA) has been used across many industries, including mining, infrastructure, and community development. An exemplary instance is the use of SIA in Australia's mining industry, aimed at mitigating effects on indigenous people and safeguarding their rights and livelihoods (Kemp & Vanclay, 2013). Despite its significance, SIA encounters obstacles such as limited resources, insufficient experience, and sometimes opposition from project advocates. Augmenting SIA capabilities, refining regulatory frameworks, and promoting more stakeholder participation are essential for its future advancement (Vanclay et al., 2015).

3.2 Need for Environmental Audits

Environmental audits are systematic, recorded, periodic, and objective evaluations of facility operations and procedures concerning compliance with environmental regulations. The main aim of environmental audits is to assess compliance with statutory standards, corporate policies, and other criteria for environmental performance (Kuhre, 1995). Environmental audits generally have three primary components: compliance audits, management audits, and functional audits. Compliance audits analyze conformity to legal requirements, management audits assess the efficacy of environmental management systems, and functional audits investigate particular environmental concerns (Kirkpatrick, 2002). It offers several advantages, such as discovering compliance concerns, mitigating environmental hazards, enhancing efficiency, and fostering openness and responsibility. They assist firms in pinpointing areas for improvement and executing remedial measures, hence improving overall environmental performance (Sayre, 1996).

Notwithstanding their benefits, environmental audits encounter obstacles like regulatory complexity, resource limitations, and possible conflicts of interest. Addressing these problems requires comprehensive auditing frameworks, proficient auditors, and a dedication to ongoing improvement (Baker & McKenzie, 2003). A case study of India's chemical sector shown that environmental audits resulted in substantial improvements in compliance and environmental performance. Organizations that conducted frequent audits had decreases in waste production, better waste management strategies, and heightened adherence to environmental standards (Nayar, 2007).

3.3 Development of New Technologies in EIA

The use of advanced technology into Environmental Impact Assessment (EIA) procedures improves their precision, efficiency, and efficacy. Innovative technologies like Geographic Information Systems (GIS), remote sensing, and artificial intelligence (AI) are revolutionizing the collection, analysis, and presentation of environmental data (Geneletti, 2013). Geographic Information System (GIS) technology is essential in Environmental Impact Assessment (EIA) since it offers spatial data processing and visualization functionalities. It facilitates the mapping and evaluation of environmental consequences across extensive regions, enhancing the capacity to anticipate and alleviate detrimental effects. Geographic Information Systems (GIS) improve decision-making by facilitating the amalgamation of diverse data layers, including land use, plant cover, and hydrology (Longley et al., 2005).

Remote sensing technologies, such as satellite images and aerial photography, provide essential data for Environmental Impact Assessment (EIA). These technologies provide the observation of environmental alterations over time, providing insights on land use modifications, deforestation, and habitat degradation. Remote sensing data facilitates baseline investigations, impact forecasting, and post-project evaluation (Jensen, 2007).

Artificial intelligence and machine learning algorithms are progressively used in environmental impact assessment to evaluate extensive information, discern trends, and provide forecasts. These technologies enhance the precision of impact evaluations by analyzing intricate data more effectively than conventional approaches. Artificial Intelligence may improve stakeholder involvement by offering dynamic and user-friendly platforms for public participation (Gartner, 2016).

The use of novel technology in Environmental Impact Assessment is shown via many case examples. A research on the use of GIS and remote sensing in Environmental Impact Assessment for a mining project in Australia shown enhanced precision in evaluating environmental consequences and determining mitigation strategies (Singh & Kanga, 2019). A further case study on the use of AI in forecasting air quality effects from industrial initiatives underscored the capacity of these technologies to improve Environmental Impact Assessment (EIA) procedures (Zhao et al., 2020).

3.4 Role and Institutional Frameworks for EIAs

The efficacy of Environmental Impact Assessments (EIA) is largely contingent upon the existence of strong institutional structures. These frameworks include the legal, regulatory, and organizational structures that regulate the EIA process, assuring its uniformity, transparency, and accountability (Petts, 1999).

Legal frameworks provide the basis for EIA processes, delineating the rules, procedures, and standards that must be adhered to. The Espoo Convention, instituted by the Economic Commission for Europe (ECE, 2017), is a fundamental international accord that delineates the responsibilities of parties to do Environmental Impact Assessments (EIAs) for certain operations with possible transboundary repercussions. National legislation, exemplified by the National Environmental Policy Act (NEPA) in the United States, is crucial in delineating Environmental Impact Assessment (EIA) protocols and stipulations (Karkkainen, 2002).

Regulatory frameworks delineate the criteria and standards for executing Environmental Impact Assessments (EIAs). These frameworks often contain stipulations for public engagement, scoping, baseline assessments, effect forecasting, and the formulation of Environmental effect Statements (EIS). Robust legal frameworks guarantee that Environmental Impact Assessments (EIAs) are performed systematically and uniformly, fostering openness and accountability (Glasson, Therivel, & Chadwick, 2012).

The execution of EIAs necessitates robust organizational frameworks, including appointed authorities tasked with supervising the EIA procedure. These agencies are generally responsible for evaluating EIA reports, facilitating public discussions, and verifying adherence to legal and regulatory standards. Efficient organizational frameworks promote the seamless implementation of EIA procedures and improve their overall efficacy.

3.5 Future of Environmental Impact Assessment (EIA)

The future of Environmental Impact Assessment (EIA) is set to undergo substantial transformation due to technical improvements, legislative changes, and global environmental concerns that are redefining environmental governance. The incorporation of new technology, more public engagement, and a heightened emphasis on sustainability and resilience will be pivotal in the next phase of Environmental Impact Assessment (EIA). The include:

3.6 Technological Progressions

Innovative technologies like Geographic Information Systems (GIS), remote sensing, artificial intelligence (AI), and big data analytics are poised to transform the Environmental Impact Assessment (EIA) process. These technologies will improve the precision and efficacy of environmental assessments by delivering more accurate data, superior prediction models, and real-time monitoring capabilities (Geneletti, 2013). AI can examine extensive datasets to discern trends and forecast environmental effects with more precision than conventional approaches (Gartner, 2016).

3.7 Enhanced Civic Engagement

The future of Environmental Impact Assessment will prioritize public involvement and stakeholder interaction. Improvements in digital communication technologies and social media platforms will enhance inclusive and transparent public consultation procedures. This will facilitate broader stakeholder engagement, including excluded populations, in the EIA process, ensuring that many viewpoints are included into decision-making (Doelle & Sinclair, 2006).

3.8 Sustainability and Resilience

As global environmental concerns like climate change, biodiversity loss, and resource depletion escalate, the emphasis of Environmental Impact Assessment (EIA) will transition towards fostering sustainability and resilience. Future Environmental Impact Assessments must evaluate both the immediate environmental consequences of projects and their long-term implications for ecosystem health and community resilience. This comprehensive strategy will guarantee that development initiatives foster sustainable and resilient systems (Sadler, 1996).

3.9 Enhancement of Legal and Institutional Frameworks

Enhancing legal and institutional frameworks will be essential for the future of Environmental Impact Assessment (EIA). This entails revising current rules to address rising environmental concerns and establishing effective enforcement procedures. The use of global best practices and standards will improve the efficacy of Environmental Impact Assessment procedures globally (Petts, 1999).

3.10 Incorporation with Strategic Environmental Assessment (SEA)

The amalgamation of Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) will gain significance. SEA broadens the scope of EIA to include policies, plans, and programs, guaranteeing the incorporation of environmental factors at elevated levels of decision-making. This strategic method will provide a more thorough evaluation of possible consequences and facilitate the attainment of overarching environmental and sustainability objectives (Therivel & Partidario, 2013).

3.11 Case Analyses and Insights Gained

The future of EIA will be shaped by insights gained from previous and current initiatives. Ongoing monitoring, assessment, and sharing of exemplary practices and case studies will enhance EIA techniques and results. Exchanging

information and experiences across various industries and areas can enhance the efficacy and adaptability of EIA procedures (Glasson, Therivel, & Chadwick, 2012).

4 Discussions

The EIA process involves several key steps, including scoping, baseline studies, impact assessment, alternatives analysis, and mitigation and monitoring plans. The scoping stage involves identifying the potential impacts of a proposed project and determining the scope of the EIA study. Baseline studies are conducted to gather information about the existing environmental, social, and economic conditions in the project area. Impact assessment involves evaluating the potential impacts of the proposed project on the environment, as well as the potential social, cultural, and economic consequences. Alternatives analysis involves evaluating alternative development options and determining whether they would result in fewer environmental or social impacts. Mitigation and monitoring plans are developed to minimize or mitigate any potential negative impacts of the project and to ensure that the project complies with relevant environmental regulations.

Examples of the EIA process in action include the evaluation of proposed mining projects, oil and gas exploration, and large-scale infrastructure projects. In each case, the EIA process is used to evaluate the potential environmental impacts of the proposed project and to develop mitigation and monitoring plans to minimize those impacts.

4.1 The following examples illustrate the operating principles in an EIA process

4.1.1 Baseline Information

An EIA conducted for a proposed mining project in a remote area of a developing country like Nigeria, may involve collecting baseline Information on the local ecology and local Communities. This information may include data on biodiversity, land use and water resources. The baseline Information is used to identify potential environmental impacts of the mining project, such as water pollution, soil erosion, or disruptions to local livelihoods (Mainka & McNeely, 2009).

4.1.2 Predictive Tools

A computer may used to predict the impact of the proposed mining project on water resources. The model may simulate the effect of increased water use, sedimentation and chemical pollution on the local river system. Field observations may also be conducted to validate the model's predictions.

4.1.3 Alternative Analysis

The EIA may consider a range of alternatives to the proposed mining project, such as alternative locations or different mint methods. The no project alternative may also be considered, which would involve not pursuing the project at all. The alternatives analysis helps to the most environmentally sustainable option.

4.1.4 Mitigation Measures

The EIA should recommend mitigation measurs to reduce or eliminate potential environmental impacts on the mining project. These measures may include designing mine to minimize soil erosion, installing water treatment facilities or providing compensation to affected communities.

4.1.5 Monitoring and follow up

The EIA may include a plan for monitoring the mining project's environmental impacts, such as water quality, monitoring or assessments of changes in local biodiversity. Follow up actions may be taken as necessary, such as modifying the mining operation to reduce impacts.

5 Conclusion

The Environmental Impact Assessment (EIA) is a crucial instrument for fostering sustainable development by guaranteeing a comprehensive evaluation and mitigation of possible environmental consequences associated with proposed projects. The operational principles of EIA—purposiveness, rigor, practicality, cost-effectiveness, and public participation—offer a systematic framework that directs the assessment process and improves its efficacy. The use of advanced technology, including Geographic Information Systems (GIS), remote sensing, and artificial intelligence (AI), has markedly enhanced the precision and efficacy of Environmental Impact Assessment (EIA). These innovations provide more accurate data gathering, analysis, and forecasting, ultimately enhancing decision-making and impact

reduction. Social Impact Assessment (SIA) and environmental audits are essential elements that enhance Environmental Impact Assessment (EIA). SIA guarantees the consideration of social repercussions in projects, fostering fair and inclusive growth, while environmental audits provide the verification of adherence to environmental standards and the identification of areas for improvement. Strong legal and administrative frameworks are crucial for the proper execution of Environmental Impact Assessments (EIA). Explicit rules, well defined processes, and robust organizational frameworks provide consistency, openness, and accountability throughout the EIA process. The incorporation of Strategic Environmental Assessment (SEA) expands the breadth of Environmental Impact Assessment (EIA) by integrating policies, plans, and programs into the evaluation process. The future of Environmental Impact Assessment (EIA) will be influenced by technology advancements, heightened public engagement, and an enhanced emphasis on sustainability and resilience. By adopting these modifications, EIA can more effectively tackle the intricate environmental issues of the 21st century and promote more sustainable and equitable development results.

In conclusion, complying with the essential operational principles of EIA, using developing technology, and promoting inclusive and participatory methods are vital for attaining environmentally responsible and sustainable development. The ongoing advancement of EIA procedures will guarantee that environmental factors are prioritized in decision-making, therefore safeguarding the environment and promoting community welfare. The operating principles in an EIA process play an important role in ensuring that environmental considerations are taking into account in decision making. The gathering of baseline Information, use of predictive tools, alternatives analysis, recommendation of mitigation measures and monitoring and follow up are all important steps in the processes. The examples discussed show how these principles can be applied in practice.

Recommendation

To ensure that the EIA process is effective, it is important to involve stakeholders throughout the process. This includes engaging with local communities, environmental organizations, project proponent and other interested parties to gather input and feedback on the proposed project. This involvement helps to ensure that all the perspectives are taken into account and that EIA recommendations are accepted and implemented. In addition, decision-makers should ensure that the EIA process is conducted by qualified professionals with relevant expertise and experience. Finally, the EIA process should be transparent, with all relevant information made available to the public to facilitate informed decision-making. Additionally, continuous evaluation of the EIA process should be done to identify shortcomings and improve the process as needed.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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