

Evolution in Guidance for EIA Implementation as a Confidence Building Measure: A Comparative Case Study of Brazil, Chile, and Colombia

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1. Introduction

The ability of environmental impact assessment (EIA) to deliver beyond procedural effectiveness to include other aspects of effectiveness such as substantive, transactive, and normative is evident by growing frustration and cynicism with EIA as an environmental management tool. EIA, through its underlying laws and regulations, provides the framework to support the other effectiveness dimensions, yet this must be complemented by guidance and communication among regulatory authorities and other stakeholders in order to build trust and confidence in the EIA process. Here the evolution of guidance documents and review of professional associations in the EIA systems of Brazil, Chile, and Colombia are analyzed within the context of international best practices to provide lessons learned across three major countries in the Latin American context.

2. METHODOLOGY

The methodology of this paper employed a modified version of the systematic criteria of Wood (1995) used in Loomis et al. (2021) to analyze the legislative, administrative, operational, and foundational criteria via a literature review. For each country, general guidance documents were also searched for, here guidance documents were defined as official advisory documents issued by an EIA regulatory authority beyond statutes and regulations (including terms of references - ToR). While these regulations are acknowledged in the brief country description, the focus is on additional clarifying guidelines.

3. RESULTS AND DISCUSSION

3.1. Brazil

In Brazil there EIA was established in 1981, subsequently regulated in 1986, and firmly established by article 225 of the Federal Constitution of 1988. EIA is part of the preliminary license (Figure 1), which is the first of three sequential environmental licenses necessary for projects, the other two being the installation and operation licenses.

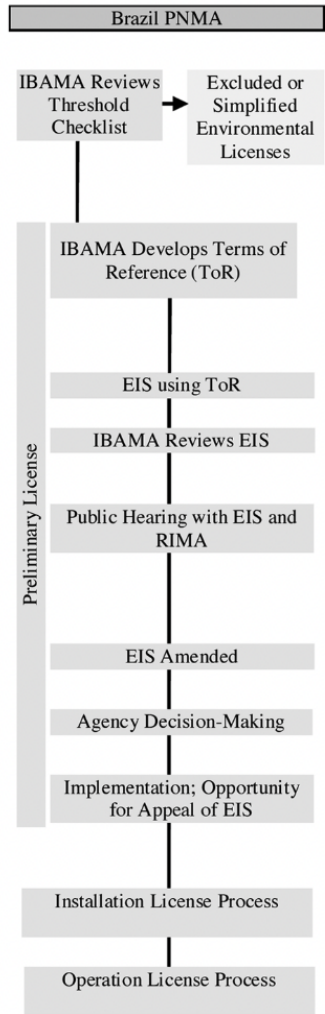


Figure 1 EIA process in Brazil (Loomis, de Oliveira, and Dziedzic 2021)

The recurring criticism of ToRs may be the result of lack of technical capacity on the part of regulatory authorities to provide ToR to specific sectors, which tend to be understaffed and underfunded. The Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA) has released guidance documents, many specific to project types, but some more generally about EIA implementation which is the focus of this study (table 1).

Table 1 Additional EIA guidance documents in Brazil

Document	Description
IBAMA Instructive Norm (IN) 184/2008 as amended by IN 14/2011	Guidelines detailing the steps and timelines for EIA procedures and subsequent environmental licenses using the federal online system.
2018 ICMBio EIA Report Review Guidelines	Aims to standardize review of EIAs in conservation

	and protected areas.
2020 IBAMA Technical Note 8	Guidelines on EIA Report Executive Summary with the aims of standardizing report structure, simplifying language, establishing report evaluation criteria, optimizing technical analysis before publication
2021 Environmental Impact Assessment Guide: Causal Relationship of Reference of Power Transmission System; Thermoelectric Plants	Guidelines for causal-relationship model (activity-aspect-impact) with mitigation hierarchy

There is no legal provision that the agencies responsible for environmental licensing carry out or offer training to other stakeholders, but IBAMA has offered training to its staff in collaboration with international partners and as of 2019 began working on digitizing EIA processes and maintaining public access on a federal website. In 2020 it began Project EIA Guide Program and has since developed guidelines for EIA processes in the electrical transmission lines and thermoelectric plants. The Brazilian Association of Impact Assessment (ABAI) provides training courses, conducts conferences, and provides important commentary on EIA developments in the country.

3.2. Chile

Chile was one of many countries that initiated environmental impact assessments in the early 1990s, following a return to democracy, with the passage of Law 19,300 in 1994, which included EIA as an environmental management tool. The 1997 EIA System Regulation (EIASR) established the typologies of projects subject to EIA, the legal framework for the structuring of Environmental Impact Studies (EIS), and public participation (figure 2). There have been several reforms since, the most significant being in 2010 which established the Ministry of the Environment and the Environmental Assessment Service (EAS), which manages the EIA system in Chile via an open online platform.

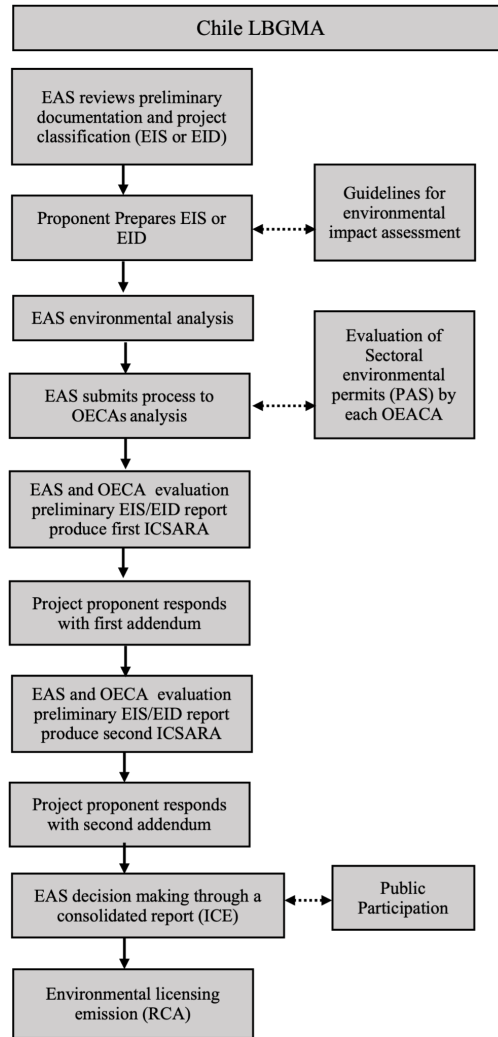


Figure 2 EIA process in Chile

In compliance with a legal mandate, the EAS standardizes the criteria, requirements, conditions, background, and technical requirements of the assessment of environmental impact of projects and activities, through the preparation of guidelines. In general, these guidelines tend to focus on specific project types and methods for specific impacts, but others focus on more general implementation guidelines, which are the focus here (table 2).

Table 2 Additional EIA guidance documents in Chile

Document	Description
2012 Guidelines for the environmental impact assessment of the construction phase of projects	Details how EISs should include descriptions of activities, inputs, emissions, wastes as well as consideration and evaluation of impacts.

Document	Description
2013: Guide for the early participation of the community in projects that are presented to the SEIA	Provides procedures and methods for implementing public participation and conflict resolution before the final EIA/EID report.
2013: Guide to good practices for EIA stakeholder relations	Provides guidance on conflict resolution
2017 Guide on the Area of Influence in EIA	Provide criteria and procedures in order to determine, justify, and describe the area of influence.
2022 Guide on Biodiversity Compensation	Guides the design of compensation measures to projects with the aim of achieving zero net loss or a net gain in biodiversity.

The EAS also has the duty of promoting annual training in environmental technical skills via an open virtual campus called *SEA Capacita*. There are also two professional associations, the Company and Professionals Association for the Environment (AEPA - Asociacion de Empresas y Profesionales para el Médio Ambiente) and the Chilean Association of Renewable Energy (ACERA-Asociacion Chilena de Energias Renovables) both of which provide training and networking opportunities for EIA practitioners.

3.3. Colombia

EIA was first introduced in Colombia as a result of international pressures following several international agreements beginning with the United Nations Conference on the Human Environment (1972) and became law in 1974 (Toro, Requena, and Zamorano 2010). Law 99 of 1993 established the environmental licensing system and made EIA a requirement for any activity that requires an environmental license. Several reforms have passed since then to give the process its present form (figure 3).

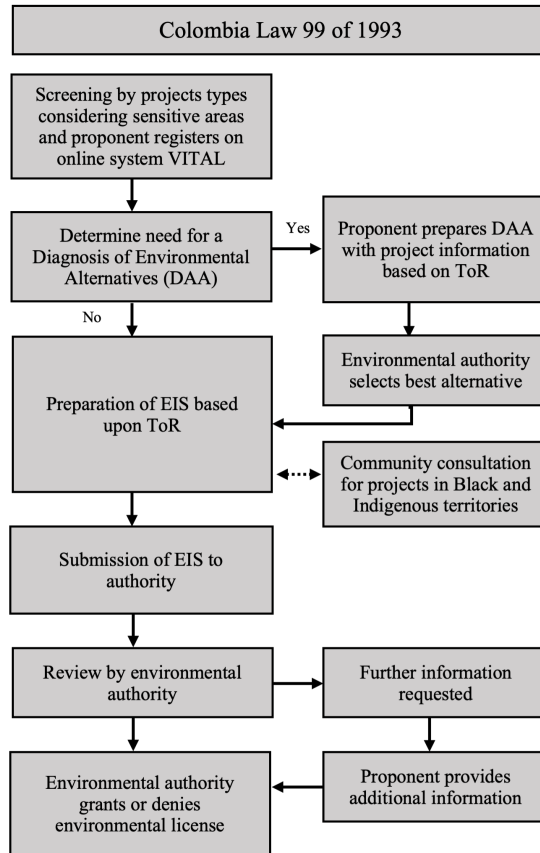


Figure 3 EIA process in Colombia

There are guidelines specific to project type as well as more general guidelines about EIA process and content, the latter being the focus of this study (table 3). It should be noted that it is not possible to access several of the guidelines listed on their website and the dates of others is not evident.

Table 3 Additional EIA guidance documents in Colombia

Document	Guidance Aspects
2002 - Environmental Studies Evaluation Manual - Criteria and Procedure	Establishes and defines technical criteria and procedures for the evaluation of environmental studies
Instructions for preliminary verification of documents for environmental licensing (unclear on year of publication)	Guidelines to carry out the preliminary evaluation procedure for environmental license applications.
2018 Citizen participation guide for environmental licensing (unclear on year of publication)	Guidelines for the information and participation of potentially affected communities in the area of influence.
2020 General Methodology for the Elaboration and	Methodological instructions to facilitate the process of

Presentation of Environmental Studies	preparation and presentation of environmental studies with reference to methodologies.
2020 Technical instructions for the identification of environmental aspects and impacts	Provides definitions and procedures for the general EIA process.
2020 Instructions for the user of the SIGANLA application	Explains how a project proponent can begin the environmental licensing process in the online SIGANLA application of ANLA.
2021 Manual criteria to establish the frequency of delivery of Environmental Compliance Reports (ICA)	Establishes technical criteria for defining the periodicity of delivery ICA.
2021 Monitoring of environmental licensing: Instructions for guided tour and field monitoring	Establishes the general guidelines for the preparation and implementation of monitoring and environmental control, establishing the strategies and instruments to be used.
2021 Environmental Studies Evaluation Manual - Criteria and Procedures	Provides orientation, guidelines and reference frameworks for decision-making and the application of criteria during the monitoring process of licensed projects.

ToRs of EIA in Colombia have been criticized, and subsequent guidance concerning methodologies has been developed in 2020, but it is not clear from the literature of its impact on practice. Regarding the existing associations, there is the Colombian Association of Asociación Colombiana de Environmental Managers and the Environment and Society Association. The first consists of a company that promotes courses and provides advisory services. The second consists of a Non-Governmental Organization (NGO) that works on access to information for civil society, with a view to positive change in political and environmental decision-making.

3.4. Comparative Analysis

Evidence for the impact of these guidance documents as confidence building measures were reviewed when discussed in the literature. The focus has been on the EIA steps for implementation, while recognizing that some principles are transversal across all steps, such as promoting sustainable development, cost-effectiveness, public participation, and learning.

The development of guidance documents in addition to statutes and regulations has progressed in each of these case studies. In Brazil, there is a strong desire for further standardization of EIA processes to be regulated by the government as a means of reducing discretionary decisions, clarifying responsibilities among stakeholders, and accelerating the review process, all of which can contribute to greater confidence in the EIA process. Federal agencies have been issuing procedural and methodological guidance on specific sectors, but there is a lack of guidance on meaningful public participation and follow-up activities. While Chile has developed a robust and transparent online platform for interagency coordination and document management, the EIA process remains seen as a technical process that ignores

legitimate stakeholder concerns over differences about more strategic concerns such as regional development goals. In Colombia, while development of guidance on standardization of EISs, some attempts at methodologies, and even post-decision activities, the practice continues to lag behind best practices. Across all three cases there is no meaningful public participation (Chile and Colombia) and even when it is mandated, there is a lack of guidance to encourage good practices that incentivize active rather than passive participation. These findings are summarized in table 4.

Table 4 Status of Guidance for EIA Implementation in Brazil, Chile, and Colombia

EIA step	International Best practices for EIA implementation	Brazil	Chile	Colombia
Screening	<ul style="list-style-type: none"> ● Well-defined checklist of project types and magnitudes requiring EIA ● Sensitive area criteria ● Preliminary EAs 	<ul style="list-style-type: none"> ● No additional guidance on screening beyond project type regulations 	<ul style="list-style-type: none"> ● No additional guidance on screening beyond project type regulations 	<ul style="list-style-type: none"> ● No additional guidance on screening beyond project type regulations that includes sensitive area criteria ●
Scoping	<ul style="list-style-type: none"> ● Define initial project information, socio-environmental context, and legal requirements ● Broad identification and significance of key impacts ● Involve and define stakeholder involvement ● Facilitate process management, sharing of information, and preparation of subsequent guidance documents 	<ul style="list-style-type: none"> ● Adhoc consultation between proponent and environmental agency based upon project type ToR ● Lack of public participation 	<ul style="list-style-type: none"> ● No specific scoping process established. 	<ul style="list-style-type: none"> ● No additional guidance on scoping beyond ToRs

EIA studies	<ul style="list-style-type: none"> ● Consideration of alternatives including null alternative ● Provide integrated information about biophysical, social, economic, and institutional context and the likely consequences of proposed actions ● Conducted in an collaborative manner with all stakeholders ● Application of mitigation hierarchy ● Cumulative effects ● Use of sustainability-based criteria for evaluation of trade offs 	<ul style="list-style-type: none"> ● Attempts to standardize terminology and methods selection ● Guidelines for causal-relationship mental model (activity-aspect-impact) with mitigation hierarchy ● Adequacy of methodological choices and impact evaluation left to environmental authorities' discretions 	<ul style="list-style-type: none"> ● Additional guidance on project description (does not mention consideration of alternatives) ● Additional Sectoral Environmental Permits (PAS) may provide guidance on interagency collaboration. ● Additional guidance documents on impact evaluation for specific projects 	<ul style="list-style-type: none"> ● An environmental analysis of alternatives (EAA) may be required beforehand; ● Quantitative and qualitative evaluation criteria are considered;
Composition of EIA Report	<ul style="list-style-type: none"> ● Establish a regular report structure based upon scoping ● Standard terminology ● Executive summary ● Declaration of data gaps and uncertainties 	<ul style="list-style-type: none"> ● Guidelines on EIA Report Executive Summary with the aims of standardizing report structure, simplifying language, establishing report evaluation criteria, optimizing technical analysis before publication 	<ul style="list-style-type: none"> ● EAS has established requirements for EIA/EID to have specific and structured reports submitted via an electronic, open to public, platform. 	<ul style="list-style-type: none"> ● Guidelines for a general structure and content of EIA report

Decision-making and public participation	<ul style="list-style-type: none"> ● Promote transparency, dialogue, and public participation ● Promote precautionary principle ● Based upon EIA report with review criteria and reviewers identified 	<ul style="list-style-type: none"> ● Lack of guidance beyond regulations for determining decision-making criteria 	<ul style="list-style-type: none"> ● Guidelines for early public participation provided, but generally offer passive public participation methods 	<ul style="list-style-type: none"> ● General guidelines with evaluation criteria established ● Additional guidelines for public information and participation of communities within the area of influence.
Follow-up (monitoring, evaluation, management, and communication)	<ul style="list-style-type: none"> ● State objective, responsibility, performance criteria, and enforcement provisions of each follow-up activity ● Tailored to project ● Begin early in process and implemented throughout project life cycle ● Transparent and accessible to all stakeholders ● Promote continuous learning ● Consider cumulative effects 	<ul style="list-style-type: none"> ● Guidelines outlining procedures and timelines, but no substantive details on responsibilities 	<ul style="list-style-type: none"> ● No additional guidelines beyond the regulations in the final report (RCA) that establishes a monitoring plan 	<ul style="list-style-type: none"> ● Monitoring is mandated and there are additional guidelines for content of environmental management programs.

(IAIA 2009; Macintosh 2010; Morrison-Saunders et al. 2021)

4. Conclusion

This study aimed to trace the evolution of the EIA systems in Brazil, Chile, and Colombia with a focus on the foundational criteria of guidance documents and professional associations. Given the inherent links between procedural effectiveness and other dimensions of effectiveness in EIA, clear guidance and capacity among stakeholders is necessary to ensure a more effective EIA process that can build confidence. For now, the three countries studied are mostly focused on guidance that addresses sectoral problems and occasionally more general implementation guidance that aims at the ‘low hanging fruit’ of EIS structure and terminology, but more difficult issues of sustainability criteria, integrated and meaningful public participation along the EIA process are not being addressed.

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