

Article

Implementation of Good Practices in Environmental Licensing Processes

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Abstract: One of the main command and control mechanisms for the environment is the environmental licensing process. However, the isolated adoption of this mechanism has not satisfactorily ensured the environmental quality of natural resources. On the other hand, an increasing number of organizations are voluntarily adhering to good environmental practices. As a result, approximating the relationship between command and control instruments (state regulation) and good practices becomes increasingly important for improving the environmental performance of organizations. Within this context, the present work proposes to evaluate how good environmental practices can strengthen and advance current environmental licensing models adopted in South America. This research consists of an exploratory case study, conducted with a qualitative approach. Several countries in South America were evaluated because of the great natural resources that the region has, as well as the European Economic Community, due to their adoption of the so-called “best available techniques” of environmental management since 1996. The results of the study indicated that voluntary adherence to international environmental management standards has evolved in the analyzed countries and that environmental agencies in South American countries could establish legal bases to consolidate the inclusion of good environmental practices in environmental licensing processes. It was also observed that some benefits could be given to organizations that implement good environmental practices, such as granting of licenses with extended terms; debureaucratization (with time gain) of administrative procedures; exemption or reduction of fees; and facilitation of financing. This study could thus support debates for the effective advancement of the current environmental licensing model. However, this hypothesis must be evaluated and consolidated through further research, carried out individually for each country analyzed.

Keywords: command and control; environmental licensing; good environmental practices; environmental management; sustainability assessment; ISO 14001



Citation: de Godoi, Emiliano Lobo, Thiago Augusto Mendes, and André C. S. Batalhão. 2022. Implementation of Good Practices in Environmental Licensing Processes. *Laws* 11: 77. <https://doi.org/10.3390/laws11050077>

Academic Editor: Aldo Muro, Jr.

Received: 28 May 2022

Accepted: 4 October 2022

Published: 12 October 2022

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1. Introduction

Command and control instruments are mandatory government regulations that impose rules for economic activities to ensure compliance with public policy. In the environmental area, these instruments aim to guarantee levels of environmental quality by setting pollutant emission standards, establishing rules for the use of natural resources, and characterizing products and their respective environmental impacts. They also establish monitoring systems and economic and/or criminal sanctions in cases of non-compliance with the rules (Sánchez and Deza 2015; Xie et al. 2017; Li and Ramanathan 2018; Taylor et al. 2019).

Despite the importance and great advances observed in command and control instruments at the global level, especially after the Stockholm Conference in 1972, several issues of significant environmental impact are still far from an adequate solution. This indicates that these command and control tools, when used in isolation, are not sufficient for the satisfactory preservation and conservation of natural resources. Evidence of this can be easily verified through current technologies that allow us to observe that, despite several international treaties and established norms, intense processes of environmental degradation at regional, national, and global levels continue to occur (Kalamandeen et al. 2001; Townshend et al. 2012; Hansen et al. 2013; Sexton et al. 2013; Kim et al. 2014; Santos Silva 2022).

In addition, it appears that the instruments of command and control are also susceptible to strong influences from diverse political and economic interests (Hanna et al. 2014; Sleman-Chams and Velásquez-Muñoz 2016; Bragagnolo et al. 2017).

One of the main command and control instruments adopted by environmental authorities are environmental licensing procedures, based on the specific rules and regulations for each country. The environmental licensing process has the main objective of establishing measures for the preservation and conservation of natural resources, thus seeking to reduce the impacts of pollution and/or degrading activities on the environment and human health, in addition to contributing to the improvement of environmental projects. Therefore, they are a legal form of state intervention in actions of public or private interest that can cause environmental degradation (Rodrigues 2010; Zhouri and Oliveira 2012; Silveira and Neto 2014; Bond et al. 2017; Monteiro and Silva 2018; Pereira et al. 2018).

According to Brazil's Resolution No. 237/97 of the National Council for the Environment (CONAMA), environmental licensing is the administrative procedure by which a competent environmental agency licenses the location, installation, expansion, and operation of enterprises and activities that use environmental resources, considered effectively or potentially polluting or those that may cause environmental degradation in any way, considering the legal and regulatory provisions and technical standards applicable to the case (CONAMA 1997).

However, several difficulties can occur during the course of environmental licensing processes, either due to structural aspects, such as work overload, technical limitations, and budget restrictions, the existence of complex or unnecessary bureaucratic rules, or even due to social pressures. Such questions can thus compromise the effectiveness of these procedures (Carro and Silva 2013; Pope et al. 2013; Fonseca et al. 2017; Monteiro and Silva 2018).

The path towards greater efficiency in environmental licensing processes is under permanent discussion. The debate on changes in laws and regulations related to public decision-making processes has been researched for several years in various parts of the world, such as Colombia (Toro et al. 2010), Canada (Gibson 2012), Australia, the United Kingdom, South Africa (Bond et al. 2014), Brazil (Duarte et al. 2017), Europe, and the United States of America (Santos Silva 2022).

On the other hand, a significant increase in the number of organizations that voluntarily adhere to environmental management standards has been observed in several countries around the world, a process also known as self-regulation. These standards define procedures for formulating policies, plans, organizational practices, and control mechanisms to be adopted by organizations, so that they can better manage their environmental impacts (Heras-Saizarbitoria et al. 2016).

Thus, understanding the relationship between command and control instruments (state regulation) and self-regulation is increasingly important for policymakers who wish to improve environmental performance with limited public resources (Demirel et al. 2018).

Considering that the evolution of environmental licensing processes is the constant goal of environmental agencies in all countries, the present work has questioned whether good environmental practices can be included in licensing processes, therefore encouraging enterprises not just to comply with legislation, but to seek improvement in their environmental performance. Thus, the objective of the present work was to evaluate how good

environmental practices can strengthen, stimulate, and produce advances in the current environmental licensing models adopted in South America as another path from economic and criminal sanctions.

2. Research Method

According to Koche (2011), scientific knowledge allows human beings to rationally understand and explain the events around them in a “systematic, methodical and critical” way. The present investigation is qualitative, that is, it consists of interpretive research, capable of showing the complexity of a specific context (Creswell 2014). In general, qualitative work involves the use of research questions to provide permeable limits to the theme (Koro-Ljungberg and Hayes 2010) or as tools to provide form and direction as part of an ongoing reflective process (Agee 2009).

Hence, the initial assumption established in this paper was that environmental management mechanisms work together, complementing and strengthening each other. With this, we intended to stimulate a movement of approximating (Figure 1) processes of environmental licensing (command and control mechanism) to processes of self-regulation (good environmental practices).

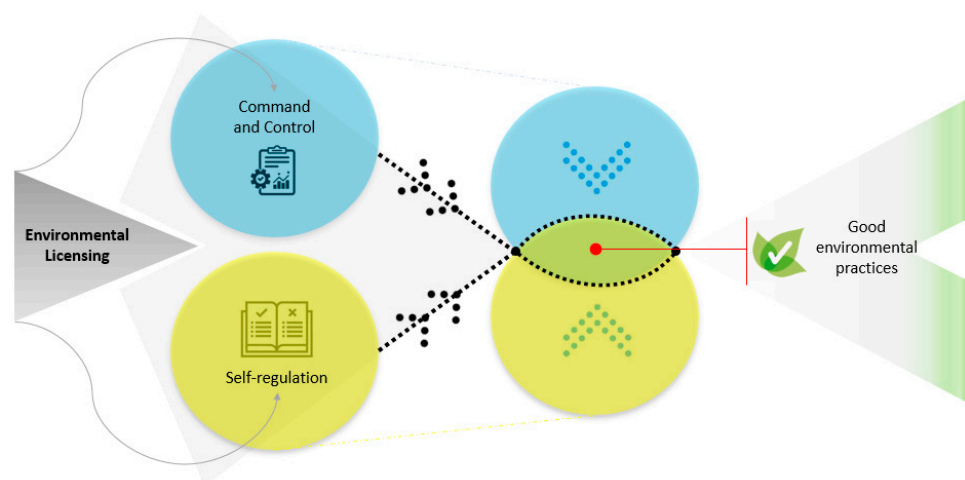


Figure 1. Moving target.

The central research question was: How do we establish differentials in environmental licensing processes in Brazil based on the recognition of good environmental practices?

It is worth noting that, according to Fonseca and Resende (2016), there is no consensus on the definition of the term “good practices”, and in some publications, the term used is “best practices”. In the present work, the term “good practices” was adopted because it is more widely accepted, as suggested by Bardach (2009).

To this end, we sought to understand how this process is implemented in countries in South America and Portugal. The results were obtained following a two-stage methodological structure:

Step I (Selection of countries): Environmental issues have a transboundary character, and in some cases, can affect the entire planet. Lorenzetti and Carrion (2012) emphasize that such issues challenge borders and the sovereignty of states. Therefore, they propose that the arrangements for this theme should be international. For this study, we selected the countries of South America because they possess approximately 30% of the total renewable water resources in the world and make up the region with the greatest biodiversity on the planet, with its large variety of ecosystems, species, and genotypes. Of the 17 megadiverse countries in the world, 5 are South American (CEPAL 2013). Despite the significant natural resources of the region, there is a lack of regional and global cooperation to resolve current conflicts and environmental damage (Oliveira 2010; Leite and Neves 2019).

On the other hand, European Economic Community countries were used as a reference for the implementation of good environmental practices in licensing processes. Since 1996, there have been guidelines to consider the so-called “best available techniques” of environmental management.

Step II (Literature review): Starting with a hypothetical-deductive principle, we sought original scientific articles and literature reviews that informed the premise that adding self-regulation instruments to command and control instruments would lead to an improvement the environmental licensing processes. Technical reports prepared by entities in the public, private, and financing sectors were also consulted.

According to the methodology proposed by [Tranfield et al. \(2003\)](#), all papers were subjected to an objective analysis to examine and dissect individual studies and explore how the components were related to each other. The database we used was Scopus, considering articles or reviews in the environmental sciences, using the following search terms: “Command and Control”; “environmental licensing”; “good environmental practices”; and “self-regulation”. Works published between 2010 (defined by the United Nations as the International Year of Biodiversity) and 2019 were selected. From there, content analysis was carried out to ensure that the selected articles addressed the central themes of research ([Figureiró and Raufflet 2015](#); [Li and Ramanathan 2018](#)). This step is illustrated in Figure 2:

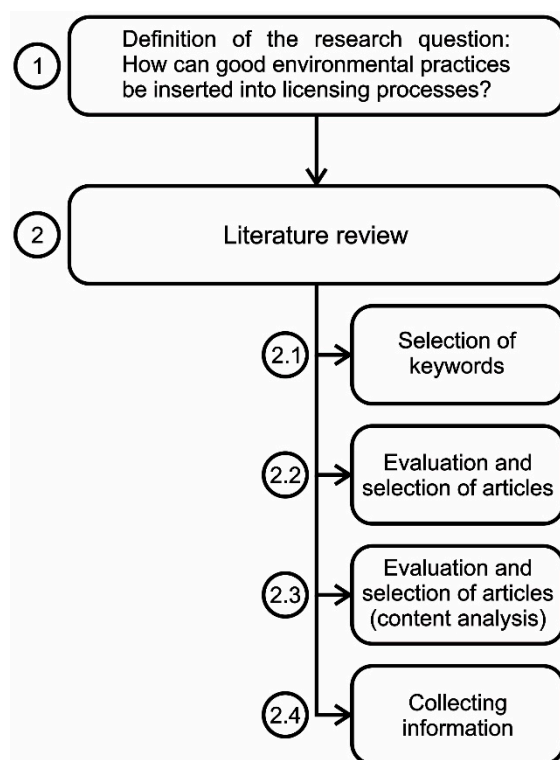


Figure 2. Second step of the methodology.

Step III (Application of surveys): In this stage, a qualitative approach was used, with intentional sampling, focusing on previously selected people and institutions. Semi-structured surveys (Appendix A) were sent to environmental agencies in 12 countries in South America, in addition to Portugal, whose environmental licensing practices are common to the entire European Economic Community (Table 1). It should be noted that French Guiana, located in South America, is an overseas territory and not a country.

Table 1. Countries and organizations surveyed and responding organizations.

Country	Environmental Agency	Survey Response	
		Yes	No
Argentina	Ministry of Environment and Sustainable Development		X
Bolivia	Ministry of Environment and Water		X
Brazil	Brazilian Institute for the Environment and Renewable Natural Resource (IBAMA)	X	
Chile	Ministry of Environment	X	
Colombia	National Authority for Environmental Licenses	X	
Ecuador	Ministry of the Environment		X
Guiana	Department of Environment		X
Paraguay	Ministry of the Environment and Sustainable Development		X
Peru	Agency for Environmental Assessment and Enforcement	X	
Suriname	Ministry of Natural Resources		X
Uruguay	Ministry of Housing, Territorial Planning and Environment	X	
Venezuela	Ministry of Popular Power for Ecosocialism		X
Portugal	Portuguese Environment Agency (APA)	X	

According to [Morgan et al. \(2012\)](#), raising the perception of professionals can highlight the most controversial issues, as well as areas of agreement, and can support legislation or regulation reform initiatives, thus signaling what needs more attention in public debates or what deserves the interest of researchers.

This step aimed to officially confirm the participation of the country in our research and whether it really adopted and applied actions considered good environmental practices.

2.1. Methodological Design and Data Collection

The methodological structure was that of an exploratory case study, using a flexible approach that could be adapted to different specificities and conditions. The degree of adaptation required was based on the characteristics of a given environmental organization, including its context and limitations of the data used. Exploratory studies helped to debate the value of different propositions, and to capture different perspectives, as highlighted by [Yin \(2015\)](#).

To apply the proposed approach, different public environmental organizations from South America and Portugal were used as exploratory cases. An initial analysis of public organizations was supported by a list of issues, which included an analysis of the scope of activity (processes, normative attributions, and mission of the organization) and the characterization of each country's environmental policies.

According to [Adams \(2015\)](#), semi-structured surveys allow for the independent thoughts of each individual in a group and can delve into totally unforeseen issues.

2.2. Study Limitation

There are limitations associated with the qualitative research structure and in its inherent flexibility and adaptability. [Bryman \(2012\)](#) argues that generalization, validity, and reliability are limitations of the qualitative approach, and these were considered in our qualitative evaluation and in the discussion of the results. As discussed by [Guba](#)

and Lincoln (1994), a qualitative study is still a major challenge. Notably, fundamental adjustments and refinement are still needed in the premises that guide qualitative research.

A potential limitation arises from the use of open-ended questions, in which the questions may not have incited complete answers with a satisfactory degree of in-depth analysis, as discussed by Saunders et al. (2012). However, this was not the case in this study, where respondents provided detailed and adequate responses for the intended diagnosis.

3. Findings

The findings obtained from the literature review, survey responses, and interviews are presented below, according to each respondent country.

3.1. Brazil

According to the survey carried out by the federal agency for environmental licensing and environmental inspection in Brazil, the Brazilian Institute for the Environment and Natural Resources (IBAMA), the country published Law No. 6938 that established the National Policy of the Environment on 08/31/81. On 6/1/83, the country established Decree No. 88.351, which regulated this Law and established the basis for environmental licensing procedures, with three types of environmental licenses: a preliminary license (PL), granted in the preliminary phase of the activity; installation license (IL), granted to authorize the start of a project's implementation; and operation license (OL), granted to authorize, after the necessary checks, the beginning of activities.

It was also reported that the environmental licensing process could and should be revised in all stages to make objectives more effective, without losing the main focus on natural resource conservation.

Brazil did not follow good practices for issuing environmental licenses, and there were no legal provisions for this. However, the responses obtained indicated that the approximation of command and control processes with good environmental practices could bring advances to the country's environmental policy.

Thus, according to the survey, the following suggestions were made for changes to licensing procedures for organizations that showed the implementation of good environmental practices:

- Concession of licenses with extended terms: longer terms for environmental licenses from companies that adopt good environmental practices would allow the entrepreneur to spend less on administrative processes and greater savings in financial resources;
- Reducing bureaucracy (with time gain) of administrative procedures: the excess of documents requested can, in many cases, bring difficulties for the environmental regularization of companies. Thus, it was suggested to review the list of documents required in the case of projects that have had demonstrably good environmental performance;
- Exemption or reduction of fees: the reduction or even withdrawal of fees charged by environmental licensing institutes could encourage entrepreneurs to adopt good environmental practices in their businesses;
- Periodic disclosure of a list of organizations that adopt good practices: considering that environmental practices is a great differential for consumers today, it is suggested that environmental institutes give recognition to companies that adopt good environmental practices.
- Facilitation of financing (applicable to financial institutions): financial agents can encourage the adoption of good environmental practices by establishing differentiated and more attractive values for projects that have proven good environmental performance.

3.2. Chile

In Chile, an environmental impact study is required according to the project's polluting potential. This study allows the licensing agency to assess the potential environmental impacts of projects, as well as the measures needed to control these impacts, and thus is a fundamental step in the licensing process.

Chile has a unified system of environmental approval and licensing, that is, the environmental feasibility, including the conception, location, installation, and operation of the enterprise or activity are jointly evaluated in a single step.

According to an applied survey, Law No. 19,300/94, which deals with the general environmental bases, recognizes in Article 2 the importance of the best available techniques, and establishes it as being the most efficient and advanced way to avoid and/or reduce emissions and negative impacts on the environment and people's health. This law also considers in Article 40 that the best available techniques can be used in environmental licensing processes as a criterion for determining the parameters for the emission of an effluent.

According to responses obtained through the survey sent to the environmental assessment service (<http://www.sea.gob.cl/> (accessed on 21 March 2022)), good practices are considered in the environmental licensing processes. During the environmental analysis process, there is a chapter associated with "voluntary environmental commitments", and the effectiveness of these measures is assessed by the licensing agency. Good practices are individually considered for each type of project, two of which are recommended for all projects: establishment of indicators and monitoring of environmental performance; conducting internal environmental audits. However, there is no differential or incentive in the environmental licensing processes for organizations that adopt these practices.

Also, according to the answers obtained through the questionnaires, the adoption of good practices could be stimulated by raising awareness of the need to maintain a good relationship with the environment and through good publicity in the press.

With the creation of the Agency for Sustainability and Climate Change on 30 December 2016, several manuals for guidance in the implementation of the best available techniques were prepared, considering the following activities: (1) agriculture, forestry, and aquaculture; (2) industries; (3) gastronomic service and accommodation; (4) construction; (5) mineral extraction activities; (6) wholesale; (7) teaching; (8) transport and storage of goods; and (9) others.

3.3. Colombia

The country's main environmental legislation is the National Environmental Policy-Law No. 99, of 22 December 1993. This law, implemented one year after the United Nations Conference on the Environment and Development (ECO-92), established a solid legal, financial, and institutional structure that allowed better management and adequate use of natural resources. Among its general principles, the Colombian National Environmental Policy provides for the creation of the National Environmental System, called SINA, which defines the action mechanisms of the State and civil society.

According to a survey carried out by the National Environmental Licensing Authority, an environmental license in Colombia was granted based on Decree 2820 of 08/05/10. As defined in Article 3, the environmental license is the authorization granted by the competent environmental authority for the execution of a project, work, or activity that, according to the law and regulations, can cause serious deterioration of renewable or natural environmental resources or introduce significant or notable changes to the landscape.

Also, according to the survey, good environmental practices are not established in laws, and therefore, not considered in environmental licensing processes; there is, at this moment, no forecast for this to occur.

3.4. Peru

Good environmental practices are part of the environmental licensing processes in Peru. The General Environmental Law, Law No. 28.611, defines good environmental

practices in Article 139, and Resolution No. 034/14, of the Environmental Assessment and Inspection Agency (OEFA), defines regulations for the registration of these actions. This registration makes it possible to strengthen the public image of companies in relation to environmental issues and creates economic incentives through the granting of credits.

Likewise, through Direct Resolution No. 060-2016-SENACE/J, performance indicators for environmental consultants provide adequate and objective information on the performance of consultants in the preparation of environmental studies. These professionals have a fundamental role in the elaboration of environmental guidelines for companies. In this way, the results published in the Institutional Portal of the Servicio Nacional de Certificación Ambiental para las Inversiones Sostenibles-Senace, facilitate the decision-making of organizations that will hire environmental consulting services. According to the responses obtained in our survey, there is ongoing discussion on creating other forms of benefits and differentiated treatments in environmental licensing processes for organizations that adopt good practices.

According to the responses obtained in the survey sent to the Organismo de Evaluación y Fiscalización Ambiental, good environmental practices are considered during environmental licensing processes. However, they are voluntary and do not bring any benefits to the organization, other than disclosing the names of these organizations to society.

Still, according to the answers obtained, it was observed that:

- The assessment of environmental performance of activities is carried out through compliance with the conditions established in the license;
- The inspections carried out by technicians of the licensing agency in the organizations consider the processes of control and maintenance of environmental records; the adoption of preventive and corrective measures; and awareness programs and employee training;
- The country's environmental agency has a positive view on including ways to encourage the adoption of good environmental practices in the stages of environmental licensing;
- They are evaluating possible incentives for organizations that have international environmental management certificates.

3.5. Portugal

According to a survey carried out by the Portuguese Environment Agency, Portugal (APA), environmental licensing procedures in Europe fall under a shared competence of the European Union with the Member States (EM), both of which can legislate and adopt binding legal acts. The European Council Directive 96/61/EC on integrated pollution prevention and control (24 September 1996) established the need for industrial activities to adopt good environmental practices, called "Best Available Techniques", to avoid or reduce emissions and negative environmental impacts of the activity. The best available techniques also serve to guide companies toward improving environmental performance.

Due to successive changes, this directive was amended on 15 January 2008 by Directive 2008/1/EC and subsequently replaced on 24 November 2010, by Directive 2010/75/EU of the European Parliament and of the Council.

Also, according to a survey carried out at APA, as one of the Member States (EM) of the European Union, Portugal recognized good environmental practices (Best Available Techniques; BATs) in its environmental licensing process. Portugal made implementation of these techniques mandatory, through Decree-Law No. 127, of 30 August 2013, which established the Industrial Emissions Regime. These documents also incorporated themes foreseen in the ISO 14001:15 as some of its evaluation criteria, which dealt with the implementation of Environmental Management Systems (SGA).

With the publication of this decree, it was defined that environmental licensing processes for polluting activities are based on BATs, which are periodically updated, without imposing the use of specific techniques or technologies.

For BATs that are not implemented, the organization must present a timetable for its adaptation, which is subsequently approved by the national environmental authority. The effectiveness of good environmental practices is assessed through an inspection by APA technicians.

As benefits for implementing good environmental practices, if organizations already have good techniques properly implemented, the country's environmental authorities can extend the term of validity of environmental licenses by up to a maximum of 10 years. Although there are no other expected benefits, the responses to the survey showed that this would be an advance in the country's environmental policy.

3.6. Uruguay

The Environmental Impact Assessment in Uruguay began on 19 January 1994 with the enactment of Law No. 16,466—Ley de Evaluación de Impacto Ambiental. This law was regulated by Decree No. 435/94, promulgated on 21 September 1994. This decree considers and conceptualizes only negative or harmful environmental impacts. It also defines responsibilities and determines the minimum content of the Environmental Impact Study and requirements of the Environmental Impact Report.

According to the answers obtained in our research, the environmental licensing procedures in the country are defined by Law No. 16.466/94, and by its regulation, Decree No. 349/005 of 2005. In Article 10 of the decree, there is no reference to the adoption of good environmental practices in its list of necessary documents; therefore, good environmental practices are not considered in the environmental licensing processes.

However, the same survey indicates that the environmental legislation in Uruguay is undergoing a modernization process. The National Environmental Plan for Sustainable Development, under preparation and public discussion, foresees the reduction of environmental impacts of industrial activities, mining, infrastructure, and services as one of its objectives, through the incorporation of the best practices and technologies available at the international level. With this, the Ministerio de Vivienda, Ordenamiento Territorial y Medio Ambiente, expresses a favorable position in considering these practices in the environmental licensing process.

4. Discussion

In recent decades, environmental issues have occupied an increasing space in international relations worldwide, considering its strategic and economic importance and finitude (Nogueira and Messari 2005). The environment must be treated multilaterally, especially in South America, due to its great natural resources and the design of large infrastructure projects that impact more than one country (Leite and Neves 2019).

Environmental licensing is among the most widespread environmental policy tools in the world (Athayde et al. 2022). Environmental regulations are divided into incentive and mandatory environmental regulations that can produce very different results (Xu and Xu 2022). The result of the present work indicates the possibility of reviewing some stages of the environmental licensing process in South American countries, consolidating the inclusion of good environmental practices. This research is consistent with some other studies on this topic. Borioni et al. (2017) compared good international practices with the procedures adopted in Brazil and indicated that failures in the scope defined for environmental impact assessments resulted in delays in the analysis phase of projects and did not avoid conflicts during public consultations. On the other hand, the general framework for market-based environmental policies, environmental innovation, and business performance remains unclear (Liao et al. 2022).

According to Fernandes et al. (2017), good practices indicate that studies should focus on stakeholder issues, and should be objective, interdisciplinary, and well-coordinated, with effective monitoring plans. Some improvements in environmental licensing processes can be corrected by implementing good practices, which include providing methodological information for the preparation of Environmental Impact Studies and accreditation of

consultants (Pereira et al. 2018). In this context, and based on experiences in Chile, Peru, and Portugal, elaboration of good practice manuals by licensing bodies and disseminating the names of organizations that show good environmental performance could stimulate improvements in the environmental performance of organizations.

This disclosure can bring some benefits to organizations. According to the work of Kasilingam (2020), there is a growing interest from consumers in relation to environmental issues and the conduct of organizations in this matter. The same author also highlights that this disclosure can favor access to new markets and that most employees feel proud and responsible when working for an environmentally responsible company.

In addition, official communication from environmental agencies could reduce so-called greenwashing, defined by Testa et al. (2018) as the external projection of a positive image of a company that is not reflected in its internal behavior in relation to environmental issues. Using market-oriented environmental policies to achieve a win-win situation for the economy and the environment has become the focus in many countries, and environmental innovation is an important way for companies to realize dual benefits (Liao et al. 2022).

On the other hand, Hofmann (2017) highlights that the management of environmental licensing processes needs substantial improvements to experience real migration from the bureaucratic model to the managerial view, considering it urgent to place greater emphasis on the effectiveness of the instrument than on its procedural process. Similarly, Fonseca and Resende (2016) warn of the need to improve transparency, computerization, and social communication practices on the websites of licensing bodies.

The experience of the European Economic Community sheds light on this issue. In this community, Directive 2010/75/EU of the European Parliament and of the Council establishes that licensing conditions must be defined based on the Best Available Techniques (BATs), which consider evaluation criteria provided in the ISO 14001:15, such as: adoption of an environmental policy; preparation of environmental planning and procedures; structuring teams and defining environmental responsibilities; awareness and training of employees; control and maintenance of all records; monitoring of environmental performance; adoption of preventive and corrective measures; internal environmental audits; and continuous process improvement.

It should be noted that according to a survey carried out by the Portuguese Environment Agency, environmental certification within the scope of the Best Available Techniques (BATs) is not a requirement; however, this voluntary step can give greater credibility to a company's Environmental Management System (EMS).

In countries of the European Economic Community, a benefit directly associated with the environmental license is granted, which is the possibility of extending the validity period. This benefit, according to an interview, can favor the reduction of costs incurred by the organization, in addition to reducing the bureaucracy of environmental licensing processes. Costs were highlighted in work done by the World Bank (2012), which stated that no less than 15 to 20% of hydroelectric project budgets in Brazil were accounted for by environmental licensing costs. This demonstrates that all the countries evaluated can improve on this issue.

As suggested by our survey results, in addition to the extension of license terms, the other benefits proposed for these cases could reduce processing time, reduce costs, reduce bureaucracy, and give visibility to organizations that show good environmental conduct.

With these changes, environmental licensing processes could advance further, becoming not only punitive for non-compliance, but an instrument that encourages organizations to implement good environmental behavior. In this context, the use of the criteria proposed in the ISO 14.001:15 and already adopted in the European Economic Community could help the environmental agencies of South America, not only in the elaboration of their manuals of good practices, but also in the granting of possible benefits to organizations.

5. Conclusions and Further Reflections

Based on the objective of this study, which was to evaluate how good environmental practices can strengthen and advance current environmental licensing models adopted in South America, we highlight some reflections and guidelines.

The punitive character of command and control instruments, although fundamental and essential, has not been sufficient for the adequate and necessary conservation of natural resources. On the other hand, voluntary adherence to international environmental management standards has evolved in the countries analyzed in this research. Thus, bringing these two instruments together seems to be a natural and necessary way for the environmental licensing processes to point, not only to what is not allowed to be done, but also to what could be done.

The examples we observed indicate that the environmental agencies in the countries of South America could establish legal bases that consolidate the insertion of good environmental practices in environmental licensing processes, prepare manuals of good environmental practices based on international standards of environmental certification, and give greater visibility to organizations showing good environmental performance.

In Chile, Peru, and Portugal, good practices were established by rules and laws; however, only Portugal granted any direct benefits for positive environmental activity (extension of the license period). Thus, there are still many possibilities for improving the system. In Uruguay, there was no specific legislation for good environmental practices. However, they will be considered in a future review of environmental licensing procedures.

In Colombia and Brazil, good environmental practices were not considered in environmental licensing processes. In Colombia, it was not foreseen to occur soon. However, the environmental agency in Brazil showed acceptance of this proposal, indicating some possibility of implementing benefits for organizations with good environmental performance. In this context, ISO 14001 could be a possible reference for defining guidelines, given that this is the most internationally accepted standard.

Based on the applied surveys, it was observed that the following benefits could be granted to organizations that implement good environmental practices: granting licenses with extended terms; debureaucratization (with time gain) of administrative procedures; exemption or reduction of fees; financing facilitation (applicable to financial institutions); and increasing visibility. Such actions would make it possible to strengthen environmental licensing processes as an instrument inducing the adoption of good practices. However, this hypothesis must be evaluated and consolidated through new research, carried out individually in each country.

Author Contributions: Conceptualization, E.L.d.G. and A.C.S.B.; methodology, E.L.d.G. and T.A.M.; A.C.S.B.; formal analysis, E.L.d.G. and A.C.S.B.; investigation, E.L.d.G. and A.C.S.B.; resources, E.L.d.G. and A.C.S.B.; data curation, E.L.d.G., T.A.M., and A.C.S.B.; writing—original draft preparation, E.L.d.G., T.A.M., and A.C.S.B.; writing—review and editing, E.L.d.G. and T.A.M.; visualization, E.L.d.G. and T.A.M.; supervision, E.L.d.G. and A.C.S.B.; project administration, E.L.d.G. and A.C.S.B.; funding acquisition, T.A.M. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Acknowledgments: The authors thank Célia Maria Peres of the Portuguese Environment Agency, Tatiana Raquel Alves Vilaça of the ICMBio, and Maria Rosário Partidário of the Instituto Superior Técnico de Lisboa.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

* 1. Name of institution/ Country

* 2. Are Good Environmental Practices evaluated in the analysis of environmental licensing processes?

- Yes
 Sometimes
 No (In this option, please go to question 10)

* 3. If the answer to question 2 is affirmative, in which stage of the licensing process are the Good Environmental Practices evaluated?

* 4. How is the evaluation of the effectiveness of Good Environmental Practices made?

* 5. Which Good Environmental Practices are recognized in these processes?

- Environmental Policy of the Company
 Structuring of teams and definition of environmental responsibilities
 Control and maintenance of all environmental records
 Adoption of preventive and corrective measures
 Development of programs for continuous improvement of processes
 Environmental Planning and Procedures
 Awareness programs and training of employees
 Establishment of indicators and monitoring of environmental performance
 Conduction of internal environmental audits
 Others.Which ones?

* 6. What is the legal instrument that allows the adoption of Good Environmental Practices within the environmental licensing processes (Laws, Decrees, Regulations, others)?

7. Is the adoption of Good Environmental Practices by companies voluntary or mandatory?

- voluntary
 mandatory

* 8. How can Good Environmental Practices be stimulated in companies?

* 9. What are the benefits to companies that present Good Environmental Practices?

- Increase the validity period of the Environmental License
 Reduction of fees
 Waiver of documents
 Others.Which ones?

* 10. Is there a possibility and / or on-going discussion on the creation of other forms of benefits for companies that have Good Environmental Practices? Which ones?

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