Diagnosis of Landscape Assessment in the Chilean EIA

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Abstract

In Chile, environmental regulations stipulate that the landscape must be assessed as an environmental component likely to be affected by projects. In this study we reviewed different EIS to describe: a) legal reason for entry in EIA System in relation to effects on the landscape; b) The baseline and the methodological procedures used in it, and c) the environmental impact assessment as such and its proposed management plan and monitoring. From the information gathered, we categorized the environmental impact studies into three groups according to the quality of the information presented criteria. Specifically for environmental component Landscape we could verify how there is a dissociation between the information obtained in the baseline and subsequent stages in the EIA Procedure. In addition, we could detect differences between economic sectors and responsible for the realization of studies.

1. Introduction

In Chile, according to the legislation, projects must consider possible effects on the landscape, but especially with respect to the characterization of its visibility, fragility and quality, information that allows assessment of the impacts on the "Landscape Value".

This paper presents a summary of the analysis of the practice of environmental impact assessment (EIA) has been done in Chile, specifically considering an assessment of the landscape. This summary is based on the PhD Thesis made by the author, entitled "EL PAISAJE COMO SÍNTESIS DE LÍNEAS DE BASE PARA LA EVALUACIÓN DE IMPACTO AMBIENTAL EN CHILE" (SYNTHESIS OF THE LANDSCAPE AS BASELINES FOR ENVIRONMENTAL IMPACT ASSESSMENT IN CHILE) presented in 2010 at the Universitat de Barcelona.

The need to review the environmental impact studies (EIS) and verify the functionality and applicability of the baselines, demonstrates that the best way to perform the task is to use of "Review Sheets", which presents/indicates an overview of project characteristics and the potential landscape impacts, and hence allow efficient comparison between different projects.

The collection of projects for this analysis required a significant effort to search for information from EIS, which are scattered in SEA[2] reports. As such, depending on the availability of information, the essential material for the application of the data corresponded to the 93% of the total EIS filed in the period

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between 01/01/2002 - 31 / 12/2005 (115 of 124), through their complete records and incomplete records.

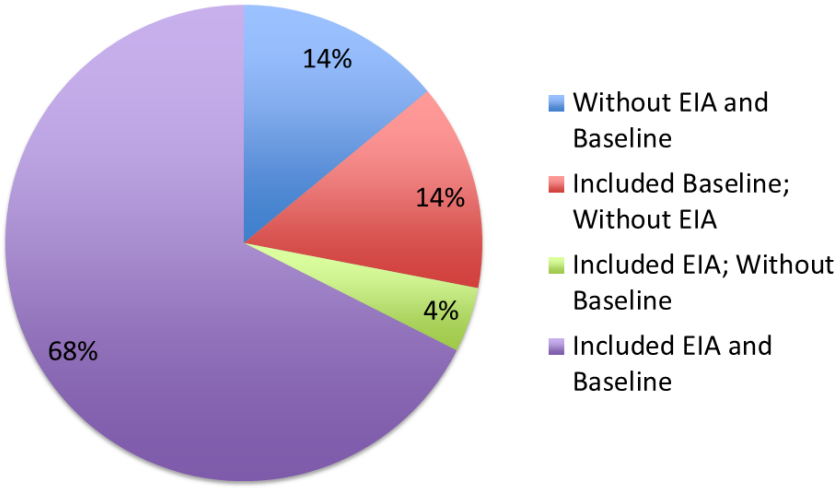
2. Projects environmental assessed related to landscape

In Chile (Art. 11 Law 19,300), those projects that generate "*e) Significant disturbance in terms of magnitude or duration, of the landscape value or tourist area."* must enter as EIS in relation to landscape.

In total, 10.7% of reviewed projects reported the generation of such effects. Mostly corresponded to projects related to Power Transmission Lines and Mining.

It is noted that in 86% of the cases, information on potential impacts on landscape value was incorporated into the design of a baseline or EIA on the subject was incorporated, regardless of whether the landscape impact actually occur or not, which indicates the importance for the assessment of the component. In Figure 1 it is observed the percentage of EIS in relation to EIA on the landscape component, also incorporating information relating to baseline of the same subject.

Figure 1: Percentage of EIS that included baseline and EIA about landscape component.



Source: Bergamini, Kay (2010).

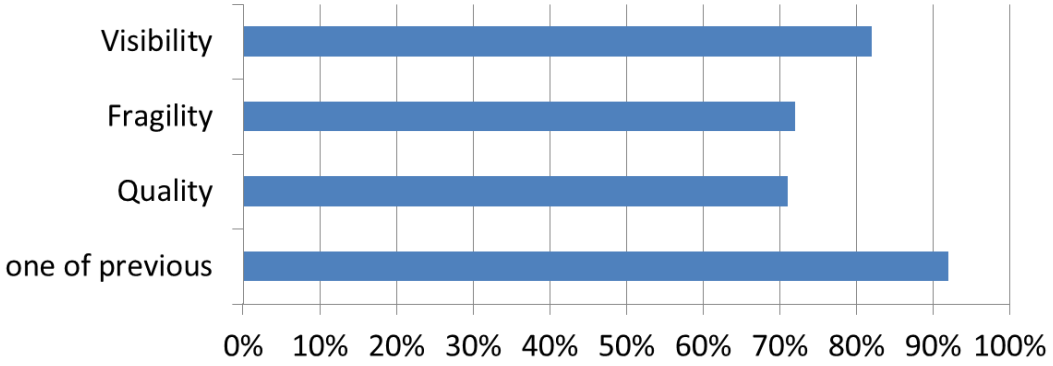
3. Procedures and Methodologies for Landscape Baseline

According to Article 12 of Regulation of environmental impact evaluation system (SEIA), in f.7 letter notes that the baseline shall include the folloiwng:

> *f.7. Landscape, which include, among others, the characterisation of its visibility, fragility and quality*

It defines landscape as a visual expression (visibility), which shows the properties of the existent elements (fragility and quality). In this case, although the legislation is orienting as to include the elements that correspond, it is implied that the inclusion of the landscape requires the analysis of these three aspects. Figure 2 shows that 92% of all the projects included baseline with information on any of the elements of landscape as specified in Article 12 .

Figure 2: Landscape elements including according to Article 12 of Regulation of SEIA.



Source: Bergamini, Kay (2010).

The most recurrent techniques used in the case of the Landscape Units are the definition of homogeneous units (82.8%), in visibility the determination of viewpoints and visual basins (59%) while both the quality and fragility are estimated through indirect approaches (68.0% and 70.5% respectively).

It is noted that there is a significant proportion (approximately two thirds) in which the documents have diverse methodological approaches, both included as variable or combination of various elements. This confirms that an important part of the weaknesses comes from the confusion by those who made the documents, due to the lack of guidelines on the subject or excessive permissiveness about the requirement of the elements described in the regulations. It is also observed that this reflects the difficulties the authority has to encounter as it faces heterogeneity for most of the time and often is not able to compare the baseline or even the definition of standard criteria for evaluation.

4. Environmental Impact Assessment, Measurement and Monitoring for Landscape

These results show that EIA techniques generally establishes three categories of impact levels, these being classified at high, medium or low, concept that represent the level of change generated by the activity or work in the environmental systems and it is always dependent on criteria or variables used, within which they is found the environmental assessment made. In addition, depending on the characteristics of the activity or work, the impact can be classified as positive if it represents an improvement in their capacity for environment, or negative, if it corresponds to deterioration. On this basis, the results obtained are shown below in Table 1.

Table 1 Impact qualification for Landscape component in EIS.

Impact Qualification				Cases
High	**Middle**	**Low**	**Neutral**	**%**
		(-)		48,8%
	(-)			8,5%
		(-) y (+)		7,3%
	(-)	(-)		7,3%
(-)				6,1%
	(+)			4,9%
(+)		(-)		4,9%
(+)				2,4%
(-)	(-)			2,4%
			(0)	1,2%
		(+)		1,2%
	(-) y (+)			1,2%
	(+)	(-)		1,2%
(-)		(-) y (+)		1,2%
(-)		(+)		1,2%
Total				**100,0%**

Source: Bergamini, Kay (2010).

According to the observations, it is possible to note that the most recurrent classification of impacts on the landscape corresponds to the negative low, with 48.8% of cases, or about one in two. All other combinations have similar distributions from mid-level negative (8.5%), followed by negative and positive ratings of low (7.3%) and negative ratings of middle and low (7.3%). In total 90.2% of the EIS had negative impact ratings, 25.6% positive and 1.2% neutral, independent of the level of classification.

Table 2 Types of measures proposed in the EIS in relation to the landscape component.

Measures			Cases
Mitigation	**Repair**	**Compensation**	**Percentage**
			66,2%
			18,3%
			7,0%
			4,2%
			2,8%
			1,4%
Total			**100,0%**

Source: Bergamini, Kay (2010).

Related to environmental mitigation/management measures, 61.7% of the projects included mitigation, repair or compensation, while 38.3% did not. Table 2 presents a summary of all types of measures presented in each EIS in relation to the landscape.

According to the table, the presentation of only mitigation measures (66.2%) is the most common fact in the EIS, followed by cases of mitigation and repair (18.3%).

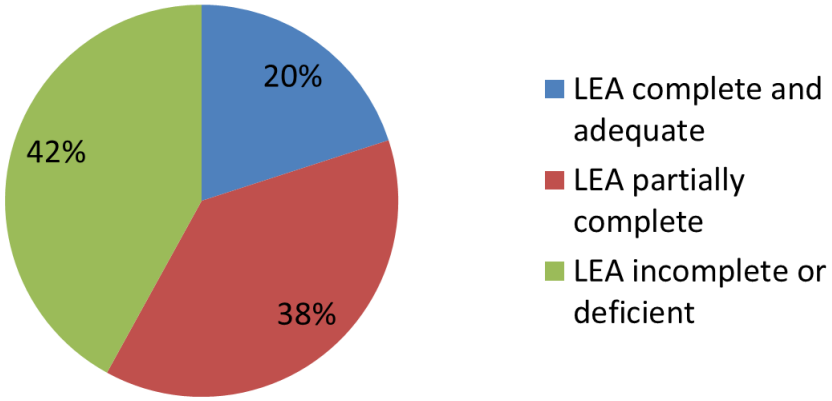
In relation to the monitoring, only 5.6% sets out this type of action to the landscape component. Although this rate may be considered low, it is noteworthy that often the projects are environmentally audited in compliance with their commitments, which verifies the implementation of the measures.

5. Conclusion

The evaluation of the environmental assessment procedure for Landscape component was performed in a qualitative and descriptive way, from the observation of its main features, missing and its relevance to the project, also including verification of consultations by the authority in the project area. According to the description given, it could establish three groups of projects: a) Landscape Environmental Assessment (LEA) complete and adequate; b) LEA partially complete; and c) LEA incomplete or deficient. All of such categories considered are based on regulatory compliance, baseline quality and right procedure for landscape assessment.

The most representative group was made up by LEA incomplete or deficient, and then that LEA partially complete, as shown in Figure 3.

Figure 3 Percentage of EIS grouped by characteristics of the Landscape Environmental Assessment.



Source: Bergamini, Kay (2010).

In general, groups that can be considered LEA partially complete and LEA incomplete or deficient, account for a vast majority with 80% of cases, that is, only 1 out of 5 EIS are considering the Landscape component properly. This accounts of the disconnect between the performance of the baselines, the subsequent EIA and finally, the definition of measures, which lead to discuss the real importance of this work, if finally there is a strong discretion in delivery, and lack of rigor in reviews by the authority.

Associated with economic sectors with more than one case study, the results show how energy projects are those with a higher Percentage of EIS (45.5%) with LEA complete and adequate.

6. References

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