

How are impacts on biodiversity analysed in EIA in Sweden?

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Introduction

According to the Convention on Biological Diversity (CBD) article 14, paragraph 1, each contracting party, shall as far as possible:

“Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures”.

About a century after Sweden's ratification (1993) the Swedish Biodiversity Centre got the government remit to investigate the implementation of CBD in Sweden. A part of the assignment regarded biodiversity in Environmental Impact Assessment (EIA). The Swedish Biodiversity Centre was asked to perform:

- an analysis on how biodiversity is currently described in Swedish EIA-documents,
- suggestions on how the consideration of biodiversity can be improved in EIA contexts,
- an evaluation of the need for basic data, analyse tools and prediction models for biodiversity in EIA-documents together with suggestions on how to meet the possible needs.

Method

In order to do this both qualitative and quantitative methods were used. 274 EIA-documents were analysed, all of which previously had been approved by the authorities. The sectors from which the documents were taken were energy, quarry, hydraulic operations, road construction, railway construction, industry and agriculture. The analysis was combined with a number of interviews held with consultants, reviewers and operators. Opinions and viewpoints were also taken into account during a seminar and a postgraduate training course for EIA professionals.

During the study the following questions were studied: What kind of data is EIA based on? How is data presented and referred to? How are species, habitats and landscapes described? How are consequences on biodiversity analysed? What kinds of prediction tools are used?

The results induced a report, which was handed over to the Swedish government. This paper is a brief summary of that report.

EIA the Swedish way

The Swedish EIA process differs to some extent from most other countries in that it does not have a screening process. Instead compulsory EIA is included in a number of Swedish laws. Hence, Sweden makes a large number of EIA-documents for projects that do not need an EIA elsewhere in the world. Instead of *when* to do an EIA, the Swedish screening process focuses on whether the activity might give significant impact or not. If the project might give significant impact a full EIA process is to be gone through, and if not there will be a shorter one.

Another difference is the Swedish evaluation system for impact, since environmental impact is described as effects and consequences. Effects are the changes that qualitatively and quantitatively can be described or measured in a practically objective way. The consequences are the valuation of the effects with respect to health and security of the people, environment and responsible management of resources.

Results

Natural environment

The results show that the natural environment is described in 73% of the all documents. A description of the natural environment is however not always motivated since the Swedish system produces many EIA-documents for small projects. This could be the case for a smaller extension in an industrial area. Therefore, it was estimated that a description was motivated in 225 of the analysed documents and that 199 (88%) of those had one.

A closer look at the 199 documents describing natural environment, reveals that the most frequently described aspect is habitats (82%) (Figure 1). Thereafter come species (66%) and landscapes (53%). However, species other than red-listed are seldom included and the landscapes are mostly described aesthetical and almost never analysed in ecological terms. Only 7% use the concept biodiversity when describing the environment. Overall the field data used in the process is often very poor. A fourth of the performers do their own inventories and about half of them use old and rough habitat inventories made by local authorities.

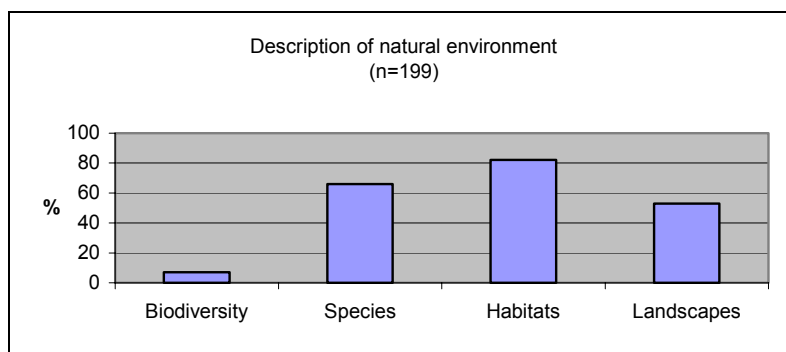


Figure 1. Description of natural environment.

Effects and consequences

Of the analysed documents that described natural environment (199), 80% included some discussion about the effects on the environment (Figure 2). However, the effects are mostly stated shortly as for example that a specific species or environment disappears and only 17%

discuss far-reaching consequences. Cumulative effects are never discussed at all. Most frequently described are the effects on habitats.

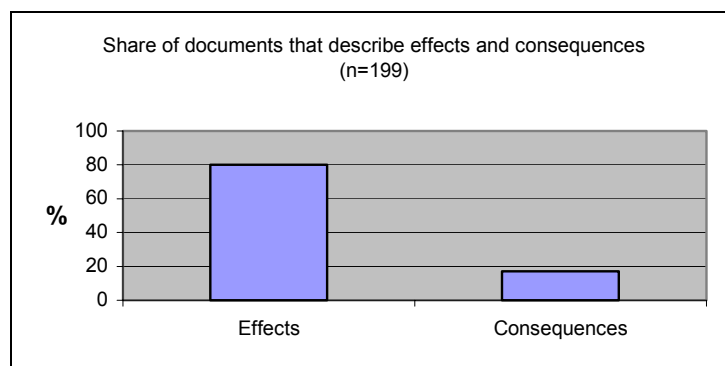


Figure 2. Share of documents that describe effects and consequences.

Mitigation, compensation and monitoring

Of all the analysed documents (274), 40% discuss mitigation (Figure 3). Monitoring is covered in 19% of the documents and compensation in only 8%.

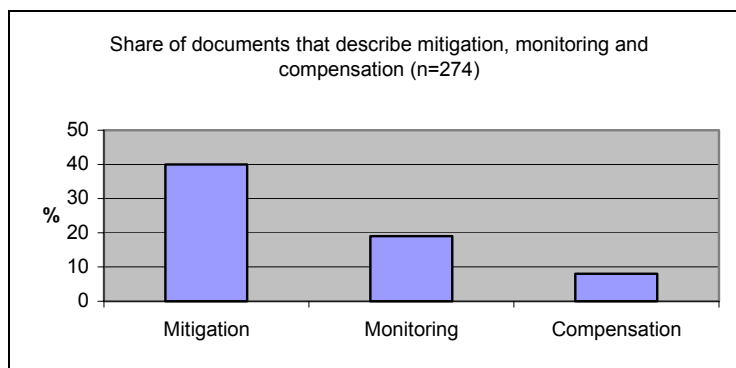


Figure 3. Share of documents that describe mitigation, monitoring and compensation.

Quality of documents

Even though there are examples of good EIA-documents, especially those made for big road and railway projects by a group of experts, the results show that there are several deficiencies in the Swedish EIA process. The main problem with most documents is that long-term impacts on biodiversity are not included. Prediction tools are not used and normally such methods are not even requested by the authorities. Statements are seldom referred to and many documents are clearly biased. Furthermore, uncertainties of raised assessments are rarely mentioned which makes the credibility even lower. From this one can conclude that the quality of EIA-documents concerning impacts on biodiversity is low and must be improved in order to fully implement CBD article 14 as well as the guidelines adopted by COP connected to the article.

There are also differences in quality depending on the size of the proposed project and if the EIA is carried out by the project proponent or by a consultant. Generally, the EIA-documents are of better quality for large projects causing adverse environmental impact and if performed by consultants.

How to move on

As mentioned earlier the results show that the quality of EIA-documents concerning impacts on biodiversity needs to be improved. However, many of the problems observed in the study are not only related to biodiversity but also to EIA in general. The most critical problems are:

- Low quality of EIA-documents
 - Incomplete illustration
 - Low credibility
 - Weak evidence
 - Poor structure
- Incomplete analyses
 - No consequences described
 - No cumulative effects described
 - No ecological landscape perspective
- Poor basic data for EIA
- Missing routines for monitoring and evaluation

In order to improve the situation a number of suggestions are discussed in the report. The most important ones are:

- National guidelines for EIA concerning projects causing significant impact
- New environmental quality objective for biodiversity and EIA
- New research program for scientific synthesis in cooperation with end-users
- National information centre for better cooperation between research and EIA-practitioners
- National data base for EIA-documents
- Certification system for consultants producing EIA
- Regulations in the environmental code for monitoring and evaluation of EIA

As one can see a lot of work needs to be done in order to improve EIA in Sweden. However, only one suggestion (the last item in the list) has to do with legislation. Hence the legislation for EIA is not the main problem in Sweden. Nor is the investment in research. In fact Sweden has, compared to many other countries, dedicated a lot of effort to attain good EIA practice. Still it is not working satisfactory, especially not when it comes to description and evaluation of consequences. One cannot help but wonder, *why?*

Two possible explanations would be:

- The level of ambition in CBD and others is set too high. It is simply too difficult and the methods for the analyses asked for is deficient.
- Scientists and practitioners are separated from one another; hence the conditions for evaluating consequences are not created.

This hypothesis is however dependent upon the situation in other countries, which leads to the question: Is the process of describing and evaluating consequences working satisfactory in other countries?