Department of Physics, Chemistry and Biology

Master Thesis

Environmental Impact Assessments in Detailed Development Plan Processes:

An Adequacy Analysis

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LiTH-IFM- Ex--12/2712--SE

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Department of Physics, Chemistry and Biology

Datum/Date
2014-01-27

Språk/Language

Engelska/English

Rapporttyp
Report category

Examensarbete
D-uppsats

ISBN
LITH-IFM-A-EX—12/2712—SE

ISRN

Serietitel och serienummer **ISSN**
Title of series, numbering

URL för elektronisk version
http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-103756

Handledare/Supervisor: Veronica Brodén,Karin Tonderski.

Ort/Location: Linköping

Titel/Title:
Environmental Impact Assessments in Detailed Development Plan Processes:
An Adequacy Analysis.

Författare/Author:
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Sammanfattning/Abstract:
A detailed development plan (DDP) is a legally binding plan that regulates the municipalities land use on a detailed level. The purpose with the DDP is to evaluate the suitability for development on land access, in order for municipalities to manage spatial planning and minimize environmental harm. If a DDP would likely cause a significant impact on the environment, an Environmental Impact Assessment (EIA) has to be produced. The aim of this thesis was to investigate how DDP and EIA processes are working on a local level in Sweden, and how the quality is reflected in the processes. More specifically, I investigated the role of EIA actors involved in the DDP process, as well as whether these processes are inadequate from an environmental conservation perspective. To investigate these issues, a document study was conducted as well as an interview study. The results from the study presents several shortcomings in both processes; examples of shortcomings were the lacking knowledge among the DDP and EIA actors in how to conduct the process, as well as interpreting and understanding the law. Other observed shortcomings were the different levels of engagement among the plan administrators, the EIA performers and the County Administrative Board reviewers. Three important factors were recognized for achieving good processes. Firstly, the people involved need to have broad knowledge and good qualifications. Secondly, the actors must be able to communicate in a good and clear manner. Lastly, the third factor is a good process leader who brings together the DDP and EIA process.

Nyckelord/Keyword:
Environmental Impact Assessment, Detailed Development Plan process, Environmental Code, Swedish Planning and Building Act, EIA actors, Environment, Decision making.

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1 Abstract

A detailed development plan (DDP) is a legally binding plan that regulates the municipalities land use on a detailed level. The purpose with the DDP is to evaluate the suitability for development on land access, in order for municipalities to manage spatial planning and minimize environmental harm. If a DDP would likely cause a significant impact on the environment, an Environmental Impact Assessment (EIA) has to be produced.

The aim of this thesis was to investigate how DDP and EIA processes are working on a local level in Sweden, and how the quality is reflected in the processes. More specifically, I investigated the role of EIA actors involved in the DDP process, as well as whether these processes are inadequate from an environmental conservation perspective. To investigate these issues, a document study was conducted as well as an interview study.

The results from the study presents several shortcomings in both processes; examples of shortcomings were the lacking knowledge among the DDP and EIA actors in how to conduct the process, as well as interpreting and understanding the law. Other observed shortcomings were the different levels of engagement among the plan administrators, the EIA performers and the County Administrative Board reviewers. Three important factors were recognized for achieving good processes. Firstly, the people involved need to have broad knowledge and good qualifications. Secondly, the actors must be able to communicate in a good and clear manner. Lastly, the third factor is a good process leader who brings together the DDP and EIA process.

Keywords: Environmental Impact Assessment, Detailed Development Plan process, Environmental Code, Swedish Planning and Building Act, EIA actors, Environment, Decision making.

2 Wordlist

The National Environmental Objectives – Nationella miljömålen

County Administrative Boards (CABs) - Länsstyrelsen

Environmental Impact Assessment (EIA) - Miljökonsekvens bedömning MKB

The Swedish Environmental Code - Miljöbalken

Detailed Development Plans DDP- Detaljplan

Swedish Planning and Building Act – Plan- och Bygglagen

The Swedish Generation Goal – Generations målen

Implementation Assessment documents - (genomförandbedömning),

Plan Description documents (planbeskrivning)

Environmental Services Committee - Miljökontoret

3 Introduction

There is an unseen risk of danger in our everyday life, hazardous activities that follows a modern society. According to Becks (2000) theory of the risk society, the society can work to prevent the environmental effects on a manageable, local level. A detailed development plan (DDP) and especially an environmental impact assessment (EIA) (which is often a part of a DDP) can be seen as such an action from the society to prevent or lower the environmental effects. To what extent they fulfill this purpose, could be a matter of debate.

3.1 Environmental Impact Assessments in Sweden

In the Environmental code § 6, the purpose of the Environmental Impact Assessment (EIA's) is described (TSEC, 2000). The purpose with the EIA is to identify and describe the direct and indirect effects from a plan, activity or action, which can affect people, animals, water, air, climate, landscape and culture environments. It is also of importance that effects on the management of land, water, and the physical environment in general, and on management of materials, raw materials and energy are described (SEPA, 2012.) There are two different areas in which EIAs are needed, for projects and for plans the Swedish Environmental Code (chapter 6 §§ 3 & 11). From this purpose, specified in the environmental code, it could be expected that all EIA's should have an equal quality and procedure all over Sweden. However, previous studies have shown that several EIA's are lacking in quality, function and purpose (Hedlund & Johansson, 2008). In Hedlund & Johansson study (2008) they examined the actor's role (in permit applications) in the Swedish EIA processes for these shortcomings. The study showed that the relationship between the different actors is of great importance, although the study lacks evidence that one actor has greater power than others in the EIA process and how one actor of great power could affect the quality of an EIA. According to Asplund and Skantze (2005) the problem with lacking quality of EIA's is the process of changing policy and planning into a more sustainable way. One of the aims of this thesis is to further investigate the underlying causes for the sometimes lacking quality in the DDP and EIA processes.

The purpose with the EIA-system is to use the same procedures in all EIA-processes, and thereby achieving an even level of quality. One possible problem with using the same procedure in all EIA-processes may be that the processes are specified in too general terms, leaving the EIA-actors with too much influence over the processes. Isaksson & Storbjörk, (2012) wrote in their paper that:

> There are often different, or even contradictory, ambitions and understandings of the goal of an EIA. Various actors may have different understandings of what it is to take environmental consequences into account and whether the goal of the EIA is mainly about finding ways to mitigate impact or, in contrast, about substantially changing the policy or plan in question (Isaksson & Storbjörk, 2012. P. 1).

If important processes, such as EIA or DDP processes don't follow the statutory decision of the EIA-system, this could lead to a different view and quality of the environmental conservation perspective in the DDP documents. Cashmore et al (2004) as well as Owens and

Cowell (2002) show that there is a clash between the rationalistic theoretical roots of an EIA and the challenges involved in complex real-world situations.

3.2 Possible Shortcomings with Environmental Impact Assessment in Detailed Development Plan Processes

The general objective with an EIA is mainly to identify the expected environmental consequences from a project or a plan and to make sure that these consequences are taken into account in the project or plan.

In this thesis the objective is to further investigate the quality of the Swedish EIA processes, although with a different focus than in previous study. Hedlund and Johansson (2008) focused on the process of EIA for projects according to the EC directive 85/337, implemented in the Swedish environmental code in 1999. This thesis focus on the quality of EIA's in detailed development plans instead of the process of the EIA for projects. In the previous study, they left out the environmental assessments of plans. One reason for this was that the legislation on environmental assessment of plans and programs only had existed for four years when the study was done, as the requirement of EIA for plans was established 2004. Today eight years have passed since the legislation was introduced, and a study of the quality of EIA's in DDP processes is both interesting and necessary, since the research on the topic is sparse.

In the DDP process it's important that the expected environmental aspects gets integrated, together with environmental knowledge into the planning and decision making, contributing to a sustainable development (Isaksson & Storbjörk, 2012). In the EIA of the DDP process, it's much harder to see what consequences the plan will have on the Swedish Environmental Objectives, compared to an EIA in a project process, where it is required to assess several alternatives to ensure the lowest environmental impact. The purpose with the Swedish Environmental Objectives is to achieve environmentally sustainable development. The problem with the DDP process is that there are several possible sources of errors in the process that might cause problems from an environmental perspective. For example in the first step of the DDP process, the DDP has to undergo a screening process (see page 4-5). The possible problem at this stage is that the screening process might be incorrectly evaluated due to e.g. the difficulties in interpreting the law, or lack of experience and resources in the municipality (Hedlund & Johansson, 2008). The effect of this could be that significant environmental impacts are overlooked, which means that the environmental perspective will not be considered in the development of those DDPs (Sandström & Hedlund. 2008). Other types of errors could be that some environmental considerations are not taken into account in the plan process. It is important that all relevant Environmental Objectives are described in the plan, and also the way in which they will be taken into consideration (Boverket, 2007). In the second step of the DDP process, when a DDP is assessed as likely to cause significant impact on the environment, the DDP goes through a "scoping stage" and an EIA is produced. The possible problems at this stage are numerous and the deficiencies are mainly due the Swedish EIA-system. One example is that the legislation is complex and difficult to understand, even for authorities and other EIA professionals (Hedlund & Johansson, 2008). Results from Hedlund and Johansson (2008) study show that one third of the EIA actors (developers, EIA consultants, reviewers and decision makers) believed that the complexity of the Swedish legislation is of great importance for quality deficiencies.

Another EIA actor that could influence the quality of the EIA and DDP processes is the county administrative board (CAB) which has both a regulating as well as a reviewing roll in the DDP and EIA processes.

3.3 Aim & research questions

The aim of this thesis was to investigate how the process of EIA and DDP is working on a local level in Sweden, and how the quality of the process is reflected. *Quality* in this study has referred to how well the examined EIA fulfilled the demands in the Swedish Environmental Code and how well the examined DDP fulfilled the demands in the Planning and Building Act. This thesis also investigated how the EIA actors involved in the DDP process and their roll in integrating the environmental aspects in the process. The study aimed at examining whether the DDP and EIA processes were inadequate from an environmental perspective or not, and if the EIA-actors perceived possibilities to improve the quality of DDP's. To answer these questions I have used following research questions.

Briefly the research questions for the study were as follows.

- How well are the National Environmental Objectives integrated in the EIA and DDP process and is this reflected in the quality of the DDP process?
- Which factors do EIA actors consider important in achieving a good DDP process?
- What role do the County Administrative Boards (CABs) have in the DDP process?

In order to be able to investigate these issues, I have both conducted a document study and interviewed the corresponding EIA authors from three Swedish municipalities.

This thesis also investigated how the process of integrating the national Environmental Objectives is working on a local level in Sweden, in three counties. It was of interest to investigate if the quality of the EIA and DDP is affected by which subset of the national Environmental Objectives the plan is touching. For example, do plans with a significant environmental impact on people have a higher quality within the DDP process than plans with significant environmental impact on a rich flora and fauna (Sandström 2007)? One could think that health is considered more important than the natural environment and through that have a more thorough process than plans affecting flora and fauna (first research question).

3.4 Thesis Disposition

Chapter four presents how Detailed Developments Plans (DDP) and Environmental Impact Assessments (EIA) are used in Sweden as well as the Swedish Environmental Policy and legislation. Chapter five describes the theory behind the thesis and chapter six presents the research methods and how the thesis was conducted. Chapter seven presents the results from the study and chapter eight summarizes the thesis in a discussion.

4 Background

4.1 Detailed Development Plans in the Swedish Environmental Policy

Sweden is divided into 21 counties, which are governed by a County Administrative Board, whose task is to coordinate the administration of the national political goals for the county. Each county is further divided into municipalities. Each municipality has a large influence on the physical planning of the land, due to the planning monopoly, which means that all land in the municipality has to be evaluated so the purpose best suited for the land is used. The planning of the land use is regulated by the Planning and Building Act and the legislation also includes regulations regarding the municipalities' responsibility to provide a general plan (Boverket, 2006). A general plan is a governing document that shows the overall long term strategy for how the municipality intends to use the land and water in the future. The general plan is not legally binding, but it gives guidance for subsequent decisions, such as detailed development plans. Although the plan is general, it affects the economic, ecological and social development of the municipality (Sandström & Hedlund. 2008). A detailed development plan (DDP) is a legally binding plan that regulates the municipalities land use on a detailed level. The purpose with the DDP is to evaluate the suitability for development on land access, this is an important procedure for municipalities to manage spatial planning and minimize environmental harm (Hedlund & Johansson. 2008) (Boverket. 2007).

In the Swedish legislation, the Planning and Building Act requires that the municipalities do a detailed plan when developments might have a large influence on the environment or the land (Boverket 2007). All DDPs have to undergo a screening process to decide whether their implementation might cause a significant environmental impact or not, which is stated by the Swedish legislation in the Environmental Code § 6(figure 1). If a DDP would likely cause a significant impact on the environment, it has to go through a scoping stage and the municipality has to produce an EIA (Hedlund & Johansson, 2008). During the scoping stage and the EIA process there are consultations with both the public and the especially concerned groups. There are also consultations with organizations, municipalities and government agencies, so that all relevant aspects will be considered in the EIA. The county administration board (CAB) has the important task to regulate and delimitate the EIA. The purpose of the delimitation is to focus the work with the EIA on the environmental issues that are most relevant for the current plan, but also to define the EIA content regarding the extent and degree of detail. Through delimitation the EIA will become more accessible and help to avoid unnecessary work (SEPA, 2010). The county administrative board (CAB) also has the role of reviewing and assessing whether the DDP should be adopted, i.e. making the DDP enforceable or not. If the DDP is adopted, the planning process is then completed and the implementation phase begins. Changes were made in the Swedish legislation of the Planning and Building Act in 2004, since then plans whose implementations are likely to lead to significant environmental effects, must go through a scoping stage and an EIA must be produced. To achieve a more integrated process, and to make it possible to achieve the Swedish Environmental Objectives, the established EIA in the DDP process should show how the Environmental Objectives are taken into account in the proposed plan. (Boverket, 2007) In this study the word EIA is used for both the document and the process.

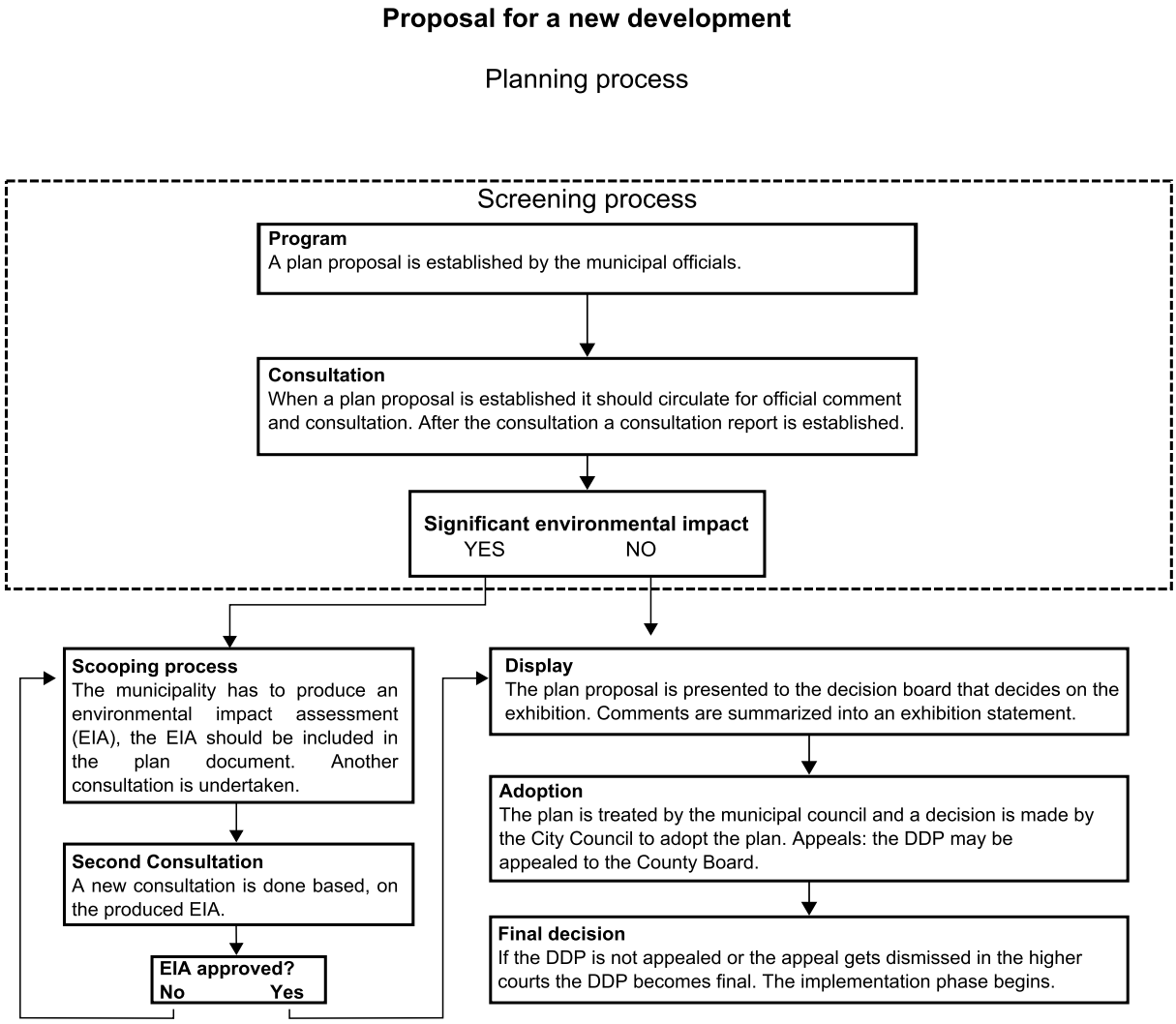

Figure 1. The procedures in the Swedish Detailed Development Plan Process.

4.2 The purpose of the Swedish legislation relating to planning processes

The purpose of the Environmental Code in Sweden is to promote a sustainable development which will assure a healthy and sound environment for present and future generations. (SEPA, 2012.) To achieve the purpose of the code, the code shall be applied so that:

- Human health and the environment are protected against damage and detriment, whether caused by pollutants or other impacts.
- Valuable natural and cultural environments are protected and preserved
- Biological diversity is preserved
- The use of land, water and the physical environment in general is such as to secure long term good management in ecological, social, cultural and economic terms

- Reuse and recycling, as well as other management of materials, raw materials and energy are encouraged so that natural cycles are established and maintained. (SEPA, 2012.)

According to the Swedish Environmental Code (chapter 6 § 3) the purpose of an EIA is to establish and describe the direct and indirect impact of an activity on people, animals, plants, land, water, air, the climate, etc. Another purpose with an EIA is to enable an overall assessment of the activity and its impact on human health and the environment.

One of the aims with the Swedish legislation in the Planning and Building Act is to provide a good and sustainable environment for the people of today's society and for future generations (LTPABA, 2004). To make this among other commitments possible, the Swedish parliament and government have decided upon a generational goal, divided into 16 national Environmental Objectives, treating different aspects of the generational goal, (Table 1). These 16 Environmental Objectives will be achieved through various measures, such as physical planning, which are a good framework for promoting sustainable development in the use of land and water, which also is part of the prerequisite for achieving Environmental Objectives. The physical planning is likely contributing to most of the 16 Environmental Objectives. (Boverket, 2007).

Table 1. The Swedish Environmental Objectives

1. Reduced Climate Impact
2. Clean Air
3. Natural Acidification Only
4. A Non-Toxic Environment
5. A Protective Ozone Layer
6. A Safe Radiation Environment
7. Zero Eutrophication
8. Flourishing Lakes and Streams
9. Good-Quality Groundwater
10. A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos
11. Thriving Wetlands
12. Sustainable Forests
13. A Varied Agricultural Landscape
14. A Magnificent Mountain Landscape
15. A Good Built Environment
16. A Rich Diversity of Plant and Animal Life

4.3 The Swedish Generation Goal

The aim of the Generation Goal is to guide the environmental activities at all levels of society. The overall environmental issues, which were previously stated in the environmental system, are now covered by generation goal. The purpose of the generational goal is to hand over a society to the next generation in which all the major environmental problems in Sweden have been solved, without causing increased environmental and health problems outside of Sweden. The generational goal is defined as the direction of the changes in society that need to occur within one generation if the country's environmental quality objectives are to be achieved. This means that the generation goal works as a guideline for environmental work throughout all levels of society (SEPA, 2012b).

The Generation Goal means that the resources to solve the environmental problems must be met within a generation and that the environmental policy should be aimed at, to mention some (SEPA, 2012b):

Table 2. Selected Generation Goals

1. Recovered ecosystems, or be about to recover, and the ability to generate long-term services as an ecosystem have been secured
2. Preserved, promoted and used biodiversity and natural and cultural environment in a sustainable way.
3. Prevent that human health should be exposed to negative environmental impact while positive environmental impact on human health will be promoted.
4. Good management is done with the natural resources.

The generation goal could be achieved through various measures, such as the DDP and especially EIA processes which are good frameworks for promoting sustainable development in the use of land and water, which also is part of the prerequisite for achieving the generation goal (SEPA, 2012b).

5 Theory

The reason for investigating how the process of DDP's works on a local level in Sweden, is due to the interest of finding out how legislated processes work in practice, and if the processes are done in a correct way. Another reason for the investigation it to see what purpose the DDP and EIA processes have on the environment and what effects can be seen from a neglected process.

According to Berg (2009) a theory could be defined as a general and more or less comprehensive set of statements or propositions that describe different aspects of the same problem. In other words – ideas about how things work. In this thesis I have been using Becks theory, "The Risk Society" (Beck, 2000), on a general level to frame the problem and to put it into a context.

Beck addresses one of the biggest problems of our modern society, the human effect on the environment and our planet. Never before has it been possible to impact the earth as much as now, one accident at a nuclear plant could affect larger parts of the earth. There is an unseen risk of danger in our everyday life that follows a modern society, one unseen danger for example could be odorless and tasteless chemicals that by themselves could be harmless but in nature it is possible that chemicals form new chemical bonds whose effects are unknown for humans. Beck (2000) describes that society can work to prevent the environmental effects on a manageable, local level. A DDP and especially an EIA can be seen as actions from society to prevent or lower the environmental effects. Some actors are trying to prevent environmental damage while other actors choose to ignore the problem (Beck, 2000).

During the 20th century the industrial and modern society emerged, and with it arose new 'invisible' dangers to humanity. Modern society was transformed into a risk society, which went from being simple to being a reflexive modernity, where the risks were created by humans. (Beck, 2000). The reflexive modernity is characterized by the unawareness in humans, which according to Beck can assume in two different shapes (Hanlon, 2009, p 2) :

1. An unawareness where we don’t know what should be prioritized, but we can choose to deal with the problem.
2. An unawareness, where our shortcomings allow us to continue our destructive behavior.

The DDP process, one could say is part of the first unawareness shape. Society is trying to prevent the environmental effects on a manageable, local level, by following the DDP process. An EIA can be used as a legal tool to promote sustainable development and to restore the necessary balance between humans and the environment, as well as maintaining the conditions of human existence.

This problem is partly due to people's skewed attitude towards nature, which has contributed to an unsustainable approach to the nature and the environment. During the later parts of the 20th century the environmental issues have come to engage both the public and the decision makers throughout all levels in the society. The knowledge of environmental reactions and limitations has been improved as well as the public awareness and impact on the politics (Lindgren, C.H, 2005).

There is an increased awareness of the value of preventing environmental problems and also to repair the problems that have arisen, not least to satisfy people's desire for a clean and healthy environment.

6 Material and Methods

6.1 Research approach

To answer the research question, a qualitative approach was used for the collection of data. Two main methods were used, a document analysis and interviews. The reason for using a qualitative collection method was to get both a deeper understanding of the issues, but also to make it possible to describe a larger part of the context. The focus of the thesis was to investigate a complex problem in depth and not to draw any general conclusions from the DDP processes in Swedish municipalities.

Several methods have been used in this qualitative study and one of them was *triangulation.* Triangulation is used to collect information through various sources; the collection of information was partly collected from documents but also from interviews and observations (Berg, 2009). By using the Triangulation method and combining a variety of methods, it was possible to broaden the perspective on the study and to validate the data. By using various sources, such as different people in the interviews or different regions to explore, I was able to examine the same questions but with different methods (Op, cit.). This made it possible to study the same phenomenon but in different contexts in order to interpret the variation (Patel & Davidson, 2003).

To make the connection between theory and the empirical data, there are three methods to use, deduction, induction and abduction (Patel & Davidson, 2003). Induction is a method where the conclusions derive from empirical experience; the theory is shaped from the data. Deduction on the other hand is a method where the conclusions are derived from given premises. This study used an abduction method, which is a combination of the methods induction and deduction. This means that for each specific case a hypothetical pattern is

formulated to explain the case or trial. At first the thesis was performed inductively, which meant that the examined data were studied without a specific predefined hypothesis formulation, this was done to avoid limiting the examination. In the second step, the hypothesis or theory is usually reconsidered; the original hypothesis or theory may have to be developed or revised in order to anchor it into reality (Patel & Davidson, 2003).

6.2 Selected cases

The delimitations of this study were to investigate detailed development plans that have been classified to cause a significant environmental impact and therefore had to undergo an EIA. All investigated plans were valid detailed plans for land that was previously partially undeveloped and is now developed. Other delimitations of this study were that the processes of the detailed development plans had to be made after summer 2004, since that is when the rules on environmental assessment of plans and programs took effect. The thesis also had a geographic delimitation; three municipalities of similar size were investigated. To make the comparison as fair as possible, I chose three municipalities of similar size (more than 100 000 inhabitants and fewer than 150 000 inhabitants) located in the south of Sweden. The experience among the EIA actors and the DDP actors, as well as the resources within the municipalities should then be quite similar.

These DDPs processes were from a regional level. This thesis has the restriction that no comparisons have been made on an international level.

In summary, the criteria for the selection of cases were:

- Placed in the south of Sweden and a population size of (100 000- 150 000)
- DDP's that were produced after 2004
- Only investigate DDP that had been classified to cause a significant environmental impact and therefore had to undergo an EIA
- DDP's for land that previously was partially undeveloped and now is developed

6.2.1 Review of the DDP's

A short review of the three documents that were examined is provided below. The investigated DDP documents are kept anonymous in this thesis to ensure the interviewees integrity.

Municipality number 1 has a population of 137 121 people (SCB, 2012). The purpose with the DDP was to create an attractive neighborhood with a mix of terraced houses and apartments, i.e. a mixed development and moderate exploitation, close to water and a nearby nature reserve. The land that would be exploited consisted of forest and natural areas in the zone between town and countryside. The land had a large risk for subsidence (i.e. land slides) and the area was also within a flooding risk area. The soil was partly highly polluted by Polycyclic Aromatic Hydrocarbons (PAHs) and metals, clean-up efforts would be needed, the area is located near an industrial area and wastewater treatment plant and therefore there was a risk for noise and smell disturbance.

Municipality number 2 has a population of 138 709 people (SCB, 2012). The purpose with the DDP was to investigate the possibility to construct a new housing area with piece-built houses, collectively built houses, townhouses and small apartment buildings, a total of 130 -

150 dwellings. The goal was to create a garden city with a mixed development and moderate exploitation. The exploit land consisted of mainly arable land that is sloping gently towards an open ditch that divides the area. The northern part of the land is coniferous forest and the eastern part deciduous forest. From a technical point of view, the land is not well suited for development due to the risk of lowering ground water levels in the area and risk of subsidence.

Municipality number 3 has a population of 147 334 people (scb.2012). The purpose with the DDP was to enable the construction of new residential buildings on a site where a store previously existed. An old building would mainly be preserved but converted into housing. The exploited land was partly developed with houses and stores. Environmental consequences would primarily be caused by the increased level of noise. From a technical point of view, the land is not well suited for development due to the risk of subsidence.

6.3 Document Analysis

A document analysis was used to examine documents from the three DDP processes from three municipalities. The documents studied where public documents in Sweden, which were collected at the municipality or at their webpage's. Each DDP process contains of three documents with an average of 60 pages/DDP process; in total nine documents have been studied. They were three Implementation Assessment documents (genomförandbedömning), three Plan Description documents (planbeskrivning) and three EIAs.

The goal with my analysis of the DDP documents was to reach a theoretical explanation for the quality of the processes and how the quality may differ. I also wanted to see how well the Environmental Objectives are integrated in the process. One way to analyze the documents was by using a formalist theory (Holme & Slvang, 1997). This theory is used for studying a text without taking into account any outside influence. In order to increase the level of credibility of the thesis, reflections of what a text is in this context have been done. Various methods have been used in this thesis; the most important task with the different methods has been to create a systematic and strategic work (Holme & Slvang, 1997).

I started with reading reports from the Swedish EPA, the Swedish National Board of Housing, Building and Planning, which is a central government agency, to understand how EIAs and DDP process are supposed to work in Sweden. I also read the legislation of the Swedish Environmental Code and the Swedish Planning and Building Act to get a perspective on what to look for while I was reviewing the DDP processes.

The processing and analysis of the collected data was done stepwise. All DDP document were in Swedish, and the reference material used from the nine documents in the study has been translated into English. I used two different checklists to organize and sort the data to facilitate the analysis (Appendix 2 and Appendix 3). The Swedish Environmental Code has been used; in chapter 6 § 12 in the Environmental Code there is a check lists of points that an EIA should contain and this list has been used in this study (Appendix 3). Checklist no two (Appendix 2) was influenced by The Swedish legislation of the Planning and Building Act, which has certain points that a DDP process should take into consideration. During the investigation, the points from the two checklists were used as a template. For example, all DDPs should define the purpose of the plan and how the plan will be implemented. The two checklists have not just been used only to judge a yes or a no, but more as a basis to determine what is missing or present. For example, all query points have been followed up to determine

what really has been described, to exclude that the points that have just been addressed ‘in passing’.

During the analytical process of the DDP documents I was searching for certain patterns, such as:

- Problems caused by way the process was executed or the way the EIA actors might affect the quality of the process.
- Discrepancies or themes that could be linked to the research questions, and the existence or lack of important points, such as the occurring themes (see page 24).
- Supportive information or contradictory information for the aim of the thesis.
- The documents should also declare the environmental impacts from the plan and the land-use and execution time.
- It’s also essential to report how land and water should be used and delimited in the plan, as well as accounting for protective measure and investigation of the suitability of the soil for the plan.
- Soil contamination must always be adjusted before permission may be given.

To be able to ensure that the data, as well as the analysis, would not be biased towards my own perception in this study, I have gone through the data set several times to get a fair-minded view of the content and to make sure to remain as neutral as possible, until all data has been processed. I have done the same for the analysis part. (Berg, 2009)

6.4 Interview analysis

The other research method used to collect empirical material for this thesis was qualitative interviews with the EIA actors connected to the DDPs. All inspected EIA reports have been part of the DDP documents and the interviews have been done with the performers of each EIA. When the research interviews were performed, the interviewer was its own research instrument. The purpose of an interview is to capture the interviewee's perception of the documents and the whole process based on the situation he or she is in. The researcher's purpose is for example to understand the meaning of the key themes that the interviewee is experiencing, and to describe them (Olsson & Sörensen, 2007, p 81). However this is not always the purpose, the interviewer might be focusing on other aspects beside the themes.

My view of the informants has been to see them not as a vessel of objective knowledge that I can empty, but as an opportunity to discuss and gain an insight into their view on my research questions and the aim of the thesis (Kvale & Brinkman. 2009).

Since the interviewer is well informed and probably has a well-defined opinion about the subject, he/she must be careful not to ask leading questions. Another source of error in interviews is the truthfulness of the respondent’s answers, since the interviewer must rely on the respondent to tell the truth. Furthermore it must be clear that the group of interviewees might correspond to a small part of the people involved in the subject (Kvale & Brinkman. 2009).

Each interviewed EIA actor has been responsible for the corresponding EIA process in the examined documents. The interview has been performed as semistandardized interviews, which is a more or less structured interview form (Berg, 2009, p 105). The questions were as open as possible, allowing the interviewee to speak openly. The interview questions were

divided into different parts, such as questions to warm up the interviewee, such as education, work experience and age. The majority of the questions were reflective questions that were the core of the interview, followed by some sum up questions. The sum up question could be: "Is there something I should ask about, or that you think is important, that I have not asked about?"

The reason for using a semistandardized interview in this thesis was the possibility to retain flexibility in the interviews (Lantz 1993). One example was the opportunity to ask follow-up questions or to spend additional time on the topics that the interviewee felt were important. I felt that this might lead to the emergence of new relevant questions during the interview.

6.4.1 Interviewees

I found the contact details of each EIA performer in the EIA's and I started by contacting them through email and later by phone to set appointments for the interviews. Each interview took between 1-1½ hour and I used an interview guide (Appendix 1.) According to Polit & Beck (2008, p 399) it is appropriated to conduct the interviews in secluded places where the interview could be performed undisturbed, so all interviews where held on respective EIA actors office. The informants were:

> Interviewee no 1 works as consultants for a bigger company in municipality 1. He describes his role as a project manager; he has the final responsibility to get the DDP and especially the EIA process as good as possible. Since he works for a big company there is economic resources to bring in experts from different fields to make the EIA as good as possible. He works with several EIAs yearly and has long experience from both plan and project processes. In the thesis he is referred to as Interviewee 1 (2012).
>
> Interviewee no 2 works as a consultant in her own company in municipality 2. She describes her role as sometimes a consultant and sometimes as a project manager in the DDP and EIA process. She works with several EIAs yearly and has long experience from both processes. In the thesis she is referred to as Interviewee 2 (2012).
>
> Interviewee no 3 works as an administrator in municipality 3 and sometimes works with DDP's and EIAs. He describes his role as supervising the process and making sure that the work of the consultants is within the municipality's guidelines. Sometimes he also is responsible for partly writing EIAs. In the thesis he is referred to as Interviewee 3 (2012).

6.4.2 Transcription and analysis

All interviews were recorded and fully transcribed. The interviews were held in Swedish, but the transcribed material I used has been translated into English. I have used the same interview guide in all interviews. The structuring and analysis of the transcribed material was implemented as a *Content analysis* Berg (2009, p 338.) describes content analysis as 'careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases and meanings'. Content analysis is viewed as a process that for the most part uses a coding operation and data interpreting process. Often selection criteria are used; the demands are that the criteria must be sufficiently exhaustive to cover the entire message, but also to make the study reproducible (Berg, 2009, p 342). The

content analysis method is based on the interaction between two processes; specification of the content and the definition of how to identify and analyze the content. An important aspect of the method is categorization; the process of categorization must depend on the data (inductive). In this thesis both open ended questions (interviews) and official documents were used as empirical data (Berg, 2009, p 350). The process of content analysis can be used for both types of empirical data, since the interviews and documents represents different kinds of information and are produced in different ways.

When constructing the categories, usually three types of processes were considered; common classes (age, sex, etc.), special classes related to the field of study and theoretical classes derived from the empirical data. The process that mostly has been used throughout the study the theoretical classes (Op. cit, p 351).

Open coding is also a part of content analysis, during which the contents are coded in order to reflect the central message of the content. The coding procedure consists of going through the data assigning code-words to elements of the data. The code-words are then categorized in order to receive the essential themes and patterns of the data. During the open coding phase it is important to remain as neutral as possible, until all data has been processed (Op. cit, p 353).

Selection criteria used in the interviews

- Information that supported or contradicted my aim and my research questions (see 2.3 Aim & research questions)
- Information that shows the problems caused by how the execution of the process was performed and how the EIA and CAB performer affects the quality of the process.

7 Results and Analysis

7.1 Document Study

The outline for the results of the document study is as follows: First a comparison was made between the reviewed documents (the implementation Assessment documents (genomförandbedömning), the Plan Description Documents (planbeskrivning) and the EIAs) in terms of how well they fulfilled the demands in the Swedish Planning and Building Act. Thereafter the Environmental Impact Assessments where more thoroughly investigated with the help of the Swedish Environmental Code; the checklist was described in the Method section.

7.1.2 How Well Do the Examined DDP Processes Fulfill the Demands in Swedish Planning and Building Act

All of the examined documents had their merits and demerits when it comes to fulfilling the demands in the Swedish Planning and Building Act and the Swedish Environmental Code.

All examined documents have in general a good description of the purpose and aim of the plan. However, not all of the documents account for the relevant environmental issues in a good way. Municipality no 1 only accounted for a few of the relevant environmental issues in the Plan Description Document, but after the consultation meeting additional environmental issues were added as the CAB felt they were relevant. The gravity of failing to include relevant environmental issues in the plan is that it could jeopardize the whole purpose of the

EIA. Still it should be mentioned that the other two municipalities represented the relevant environmental issues in a good way. Other indications that municipality 1 did not fulfill the demands in the Swedish legislation are the signs of conflicts within the plan process that can be detected in the documents. However, those conflicts are not explicitly accounted for in the document, which they should have been. Furthermore, the description of the current status of the area was also inadequate, since the current status of the surrounding environment is not described in a clear way as there is no section devoted to this. It is still possible to deduce the current status of the surrounding environment from the document, but it's not easy and hands-on, which could obstruct the reviewing of the document and complicate the reviewing process. In summary, those aspects make the DDP documents from municipality 1 appear unfinished and unclear. The DDP's from the other municipalities do not have this problem and they also describe the likely development of the area if the plan is not implemented, which municipality no 1 does not.

All the documents addressed and described the plan areas properties, but the areas that would have indirect impacts, if the plan gets implemented were not addressed in any of the plans, which they should be according to the Swedish law (Boverket, 2006). It is important to also include such areas to be able to insert preventative measures in time. All DDPs account for the baseline alternative and the plan alternative; however no alternative locations were described. Reasons shall be given why alternatives were selected or not, but in the analyzed documents no clear explanations were given.

Evaluation of expected significant environmental impacts is another demand that the DDP performers has to account for in the documents, as well as if the plan area will meet the conditions for achieving the Environmental Objectives (in this case a Good Built Environment). The results differ between the municipalities; the plan in municipality no1 does not meet the conditions for a Good Built Environment, which the reports from the consultation meeting support. The plan description documents from municipalities 2 and 3, on the other hand, show that the conditions are good for achieving the Environmental Objective a Good Built Environment.

In the documents from both municipality 1 and 3 one can read about health risks associated with the plans due to high noise levels and contaminated soil. In contrast, Municipality no2 does not declare any health risks related to the plan. Environmental consequences in all cases were primarily caused by changes in the use of land and the risk for subsidence, both in short and long term perspectives. Secondary, cumulative and synergetic consequences, positive as well as negative, were not taken into consideration in any of the DDP's. Both positive and negative effects of the environmental impacts should be reported in the DDP documents, but no real comparison of the environmental impact has been done in any of the examined cases.

All DDPs should have delimitations to make it easier to concentrate the work on the environmental issues that are most relevant for the plan. The purpose with delimitating the scope is to make the report more accessible and to avoid unnecessary work. The focus of the DDP reports should be on significant positive and adverse environmental effects that the implementation of the plan might have (chapter 6, sections 12–13 Environmental Code;

European Commission 2004, pages 26–27; Government Bill 2003/04:116, page 26). All of the examined documents were limited in a good way both time and location. All relevant aspects were treated in the DDP documents and all the treated aspects are expected to have a significant environmental impact, due to the implementation of the plans. It can be difficult to decide what may be considered to entail significant environmental effects or not at an early stage. Some uncertainty can be removed by obtaining more information, if uncertainty remains a reason for including an issue in the EIA (SEPA, 2010. P.79). All the reviewed documents lack descriptions of uncertainties and assumptions; most also lack information about technical problems and other difficulties in the process. However, municipality no1 has addressed the problem of soil contamination, and produced a geotechnical investigation in response to the request by the County Administration.

One aim with the DDP process is to integrate the environmental aspects into the plan to promote sustainable development. To do this, it is important to choose alternatives that prevent the implementation to give rise to any significant negative environmental effects (SEPA, 2010. P, 99). It is also important to account for compensation measures to prevent, reduce, or as far as possible offset any of the environmental impacts that the plan may result in. In the documents from municipality 1 the measures described appear a bit unfinished. For example, no concrete proposals are listed or possible problems that may arise from the plan and no description of actions to perform if possible problems arise. All municipalities have proposals for prevention measures but no compensation measures or safety measures has been evaluated, except minor safety measures in the DDP from municipality no1.

Key issues from the DDP and the EIA documents were brought up by the CAB and the E8nvironmental Services Committee in the consultation report in the Plan Description documents *planbeskrivning*. Table 3 shows that there were weaknesses in the process and the function of the consultations, since a large amount of the important issues never get treated after the consultation. It can be seen in the table how issues have been raised during the consultation process and how these issues have been addressed. The text in italic describes how the key issues have been accounted for in the examined documents. Obvious flaws were detected, which affects the quality of the processes.

Table 3. Key issues from the consultation reports in the Plan Description documents, which emerged from the consultations with the County administration boards and the Environmental Service committees. The text in italic are excerpts from the examined DDP and EIA documents that describe how the key issues have been accounted for in the examined DDP and EIA documents.

Case	County Administration Board	Environmental Services Committee
1	Comments on **Natura 2000**; the EIA needs to identify habitats and species in the Natura 2000 site and how they are affected by the plan. *No identifications have been done.*	Comments on • **Noise pollution**; The noise impact from the industrial area needs to be investigated and reported in the plan. *No reporting of the industry noise is reported*. • **Air**; the impact in terms of odor from the wastewater treatment plant needs to be further investigated. Emissions from the industrial area should also be investigated. *Nothing about the odor or how the investigation has been done is mentioned in the document. The emissions are not reported and there is nothing about how the noise has been measured.* • **Soil pollution;** thorough investigation action is required, *supplemented soil engineering survey is available.* • **Ground conditions;** additional alternatives are desired, *no further alternatives are listed*.
2	No comments on the proposed plan	The Environmental Services Committee is not in the consultation protocol.
3	Comments on **Noise pollution**; preventive measures for noise reduction, especially in the design of the inner courtyards. *Is reported in the plan.)*	Comments on • **Noise pollution**. (Traffic noise levels exceed current limits. It is therefore important with adequate noise protection measures that limit the potential for interference. *Noise control measures have been taken in the plan.(In the DDP it says that the balconies need to be glazed to protect against the noise pollution, but after the building was done no such actions had been performed).*

7.2 How Well Do the Examined EIA's fulfill the Demands in the Swedish Legislation?

In this section the different municipalities are treated separately rather than being compared to each other.

7.2.1 Municipality 1

The quality of the EIA is rather poor; several aspects are missing, for example the comparison of different environmental aspects, the impacts from the plan and the accounting of the use of resources are all missing. One of the biggest problems is that the soil fails at several points to be suitable as residential soil; even the Environment Agency of municipality 1 declines the implementation due to the bad position for residential area. The Environmental Committee says in the consultation "that the best location has not been selected and that the need for new

housing can be met in other more appropriate locations.” Further, the Environmental Committee made the following assessment in the consultation "the plan proposal is not considered appropriate, the soil conditions in the area are very poor and could as a consequence of the plan cause subsidence which makes the soil not suitable for residential development. The plan area is in the risk of flooding and the land is also partly highly polluted and clean-up work will be extensive and costly. The plan area is also near an industrial area and a sewage treatment plant, which can cause noise and smell disturbance” (Municipality 1. Plan Description document *planbeskrivning*, p 39).

The EIA and the implementation plan does not appear as one interconnected process, the documents appear as if the EIA was not a part from the beginning but rather a report that has been conducted further into the process. For example, in the implementation plan no former alternative has been addressed, even though previous alternatives exist, however they have been removed from the implementation plan. The previous alternatives do still appear in the EIA and make the reader confused when these previous alternatives do not exist in the implementation plan. Other aspects that make the documents appear unprofessional are that the documents are poorly cohesive and that larger parts of text are just copied to other parts of the document. The environmental consideration is low and inadequate. The EIA highlights environmental effect due to the implementation of the plan, but this environmental effect is not clarified, or what the decision is based upon. Environmental considerations are not addressed in time which probably has affected the cost of the process, compared to if the environmental considerations would have been included earlier in the process. Additional shortcomings are, for example, the calculations of noise pollution; the calculations can be found in the EIA but they are too poorly done to present any information from the calculations. This issue is also addressed in the consultation, such as the Environmental service committee notes that "The noise impact from the industrial area needs to be investigated and reported in the plan," (Municipality 1. Plan Description document *planbeskrivning* p,40) this is, however, still not investigated in the final document, (Table 3.) The DDP actor’s responds: ”The plan has limitations in terms of noise," (Municipality 1. Plan Description document *planbeskrivning* p,42) no further information emerges about these limitations. Also the CAB believes that the reporting of "noise is vague and lacks clear conclusions of the reported noise calculations.” (Municipality 1. Plan Description document *planbeskrivning* p,44.)The process actors do not specify at which time noise has been calculated and why the municipality chose these particular points. The County Administrative Board therefore “…wishes a clear and comprehensive assessment of how the proposed area will be affected by noise from the industry" (op cit). One positive contribution is the soil survey; however this survey was supplemented one year after the consultation.

One of the purposes of the environmental assessment is to integrate environmental considerations into the planning, and that there will be descriptions about how relevant Environmental Objectives are accounted for in the plan. The description of the relevant Environmental Objectives addresses; A Non-Toxic Environment, A Good Built Environment, Flourishing Lakes and Streams and Sustainable Forests. The Environmental Objectives are only described in the EIA and are absent in the other documents, I would say that this is a failure of the project manager. Because if the EIA performer wouldn’t have mentioned the Environmental Objectives in the EIA, they would have been left out and no Environmental Objectives would have been described, even though the Swedish Environmental Code states that they should.

The impression given by the EIA is that it is not well done, it is a little short and it is difficult to follow and interpret the information. No references or sources are listed in the documents, even though previous investigations have been made in the documents, but these investigations are not possible to get hold of. This shortcoming is also not mentioned in the consultation. The municipality reports no effectiveness analysis, i.e. an assessment of how the plan affects the ability to achieve the Environmental Objectives, or which objectives that will get promoted or discouraged. The municipality however does report a follow-up plan to the negative environmental impacts of the plan; the follow-up plan is unfortunately unclear and very short.

7.2.2 Municipality 2

This EIA is easier to read and follow than the EIAs of the other examined municipalities. Municipality 1: s EIA is better thought through, however it gets a bit tricky to follow the information flow when suddenly a road is included in the description. The EIA addresses the possibility to construct new housing to create a garden city with a mixed development and moderate exploitation, however simultaneously there is an ongoing DDP for a road in the same plan area as the examined EIA, and the plan had to adapt to two different road alternatives since the road option is not fixed. The EIA is a good and well thought through EIA that focuses on relevant environmental aspects which in this case is land, water and the landscape scene. The document is easy to view, with the available images and tables to make the information clear.

The information from the EIA and the other document indicates a good DDP process, where the EIA has been a part of the process from the beginning; from the consultation one can see that the collaboration between the EIA consultants and the municipality has gone in a correct way. For example the County Administrative Board has no objections to the proposed plan. But want to emphasize the importance of new walking and bicycle lane (Municipality 2. Consultation protocol, p,2). The EIA appears good and carefully conducted. For example a conservation assessment has been done to assess the forest value of the plan area, even though the amount of forest that will be affected by the plan is low, there are also preventive measures to maintain the trees.

This is a good EIA that presents the management of land, water and other resources well and clearly in a table (Municipality 2. EIA, p, 13). The references are reported in the EIA, which suggests that the EIA examiner easily can check the sources. The municipality reports an effectiveness analysis and a clear follow-up plan for the negative environmental impacts of the plan. The EIA provides clear conclusions of the problems and the consequences; another positive feature of the EIA is that it is clear that the EIA has been revised.

7.2.3 Municipality 3

The quality of the EIA could be better and clearer, the description of the baseline alternative and the potential environmental effects is not well described. The EIA is also missing a description of the overall environmental impact, which should be addressed under assessment, according to the Swedish law. Further shortcomings are that it is not clear how the environmental considerations should be integrated in the process; the problem is that the environmental consideration, noise, is included in the Environmental Objective A Good Built Environment. This could lead to the actor missing something important regarding noise when is not addressed in its own paragraph. The environmental quality standards are not included in

the EIA however they are included in the implementation plan. This may be due to the fact that it was the same person who made both the EIA and the implementation plan and merged both documents together as a single document. This could cause that certain issues are not addressed under the EIA document but under the implementation part of the merged document.

No effectiveness analysis is reported in the EIA, and the accounting for the negative environmental impacts is poor. However noise pollution is accounted for under the negative environmental impacts, but this is for all over town and not only in the plan area. Both the CAB and the Environmental committee says that a good sound environment as possible should be strived for (Municipality 3.Consultation protocol, p, 1-2). Another negative aspect with the DDP and EIA process is the failure of the prevention measures against noise pollution, this was the most important preventive measure of the project and was planned in the documents to prevent noise in the apartments by glazing in balconies, however this never happened other than to the residents who paid for it.

7.3 Analysis of the Occurring Themes

To investigate the roll of the EIA actors involved in the examined DDP process and their role in integrating the environmental aspects in the process, I used a checklist to determine the quality of the documents (Appendix 3). To connect the two separated parts of the study, the document study and the interview study together, I used the following seven points as themes to relate them to each other.

1. Environmental Objectives
2. Environmental Quality Standard
3. Defining the Scope
4. Description of the Current Status
5. Alternatives
6. Total Environmental Impact
7. Protective Measures

7.3.1 Environmental Objectives

Environmental Objectives should be the foundation of municipal development to ensure a sustainable development for a long-term project. Following points should be included and accounted for in a EIA.

1. It should be clear how national, regional and local Environmental Objectives are taken into account in the EIA.
2. Environmental Objectives should also constitute criteria for evaluating the environmental impacts of the plan.
3. Make it possible to interpret the achievement of the Environmental Objectives in the assessment of various alternatives' environmental impact.

The national Environmental Objectives are taken into account in all the examined EIAs. However, they are often accounted for in the Description Plane document and not as clearly in the EIA.

The EIA for municipality 1 does not account for the regional and local Environmental Objectives; however there is one part, *effects and consequences*, which compares different aspects that will get affected by the plan, but the environmental impacts are not assessed in a clear way. It would be easier to assimilate the information in a table. The Environmental Objectives should assess the criteria for evaluating the environmental impacts, no accounting of this occurs in the EIA of municipality 1. Neither is it possible to interpret the achievement of the Environmental Objectives in the assessment of the various alternatives' environmental impact. The EIA addresses what is likely to happen if the plan is not introduced, but not the direct consequences on the environment regarding the alternatives. The EIA actor's response to the national Environmental Objectives was that the Environmental Objectives are hard to follow and to relate to individual projects. His opinion is that the Environmental Objectives are more useful as reconciliation, since it is very difficult to link an action to an Environmental Objective. He also says that the Environmental Objectives take up a lot of time without giving much back, which could be one of the reasons for why this part of the EIA is a bit scarce (Municipality 1. EIA, p,16).

The EIA for municipality 2 does not either account for the regional and local Environmental Objectives. The EIA do however assess the Environmental Objectives criteria for evaluating the environmental impacts; municipality 2 has a table with comparisons of what respects in which the plan alternative is considered to be better, worse or equal, from an environmental point, in comparison to the baseline alternative. The plan area is expected to have good conditions for achieving the Environmental Objective a Good Building Environment which was the target primarily being considered for the plan. The availability of open spaces and nature is good, and the area is planned to become one of the first low-energy residential areas with district heating in Sweden (Municipality 2. EIA, p, 13).

The EIA for municipality 3 differs from the other EIAs and accounts for the regional and local Environmental Objectives. Municipality 3 has a table with the current environmental impacts connected to the plan. The environmental impact is noise, but it is not well accounted for in the EIA. The plan area is expected to have good conditions for achieving the Environmental Objective a Good Building Environment. The EIA actor for municipality 3 does also feel that it is hard to follow and interpret the Environmental Objectives, which could be reason for the quality of this part of the EIA.

7.3.2 Environmental Quality Standard

According to the Swedish Environmental Code, the environmental quality standards must not be exceeded, if there is a risk, it should be specified and an investigation should be done. The fulfillment of the environmental quality standards should be possible to deduce in the various alternatives' environmental impact. However none of the environmental quality standards is expected to be exceeded in municipality 2 & 3, but in municipality 1 it is a possibility. Interviewee number 2 finds that greater weight should be put on the environmental quality standard, since she thinks that the environmental quality standard helps to focus the plan. Meanwhile interviewee no2 feels that the environmental quality standards are hard to relate to individual DDPs

7.3.3 Defining the Scope

The EIA should define the most important boundaries made during the process, e.g. during which time the environmental impact is expected to occur, and the geographical areas that

have been examined should be reported. Available investigations related to the matter must be reported.

The EIA of Municipality 1 defines the scope, and also recognizes when the estimated environmental impact is believed to occur and the geographical areas that will suffer. The geographical areas, which have been investigated, are presented. However the EIA says nothing about previous investigations, even though some previous estimates have been made. This is indicated in the report, for example one can read, the water has not changed since previous estimates. The EIA of Municipality 2 defines the scope, and also recognizes when the estimated environmental impact is believed to occur and the geographical areas that will suffer. The geographical areas, which have been investigated, are presented. No previous investigation has been done. The EIA of municipality 3 however does not have any definition of the scope. Every EIA actor that I interviewed felt that defining the scope is important to focus the important questions of the project and to work with these questions to achieve a stable outcome.

7.3.4 Description of the Current Status

The description of the current status should give a good idea of the values of today's site, and how these values are related to each other. The description should contain a comprehensive coverage of ambient environmental situation along with detailed descriptions.

Municipality 1 has a general description of the current status in the plan area; nevertheless is not a clear description and the values are not related to the values of today's site. Municipality 2 presented everything in a good and clear way, while municipality 3 does not have a clear status report presented. This part is very reflexive to what the EIA actors brought up during the interviews. Interviewee no1 said that the description of the current status is important to find out how the land actually looks like today and from that decide if the knowledge of the land is too poor or not. If so, experts in the current area have to be brought in to the project. EIA actor 2's response was that the description of the current situation description is obvious. However if there is a lot of material, it can take too much time and room in the EIA. The EIA actor for municipality 3 does not think that the description of the current situation is that important, which is reflected in the EIA.

7.3.5 Alternatives

An EIA should have a description of alternative locations if it is possible as well as alternative designs, together with the reasons why a particular alternative was selected and a description of the consequences that could arise if the activity or action is not implemented.

No alternative sites are reported in any of the examined plans. There are also no explanations of why the alternatives were selected. In the EIA of municipality 1 however there were several alternatives from the start, but that these have been removed in favor of today's plan alternative. The EIA actor for municipality 1 says that usually it's just the baseline alternative and the plan alternative in the document, since the DDP actors usually has problems with thinking outside the box and creating further alternatives. The EIA actor for municipality 2 wants to see the same process for producing alternatives for EIAs for plans, as it is for EIA projects, "… are there reasons for further alternatives there should be further alternatives in the process. However you should not as an EIA actor find out alternatives just to include them in the EIA" (Municipality 2. Interview p, 4).

7.3.6 Total Environmental Impact

The EIA shall include a summary of the various alternatives' (including the baseline alternative) overall environmental impact. None of the examined EIAs has such a summary. The environmental consequences from the alternatives shall easily be compared with each other and presented in a table or in the text. No good and clear comparisons have been done by municipality 1 and 3.

In the overall assessment one should be able to deduce the alternatives' achievement of the Environmental Objectives and the environmental quality standards. No assessments are indicated in municipality 1 and 3, only that no environmental quality standards will exceed. Municipality 2 provides a good assessment. Why the selected alternative was chosen over the other alternatives must be disclosed in the summary. Still, none of the investigated EIAs display why the plan alternatives was selected instead of other alternatives, municipalities 1 and 3 does not even include the alternatives in the summary. This could be due to that none of the EIA actors that I interviewed really know what the benefits are of including the total environmental impact in the EIA. Interviewee no1 sighed on this point and said "it is very difficult to say what the different effects will result in and therefore you rarely say anything about it." (Municipality 1. Interview p,4).

7.3.7 Protective Measures

A description of the measures envisaged to make harmful effects be avoided, reduced or mitigated, e.g. how to avoid that the activity or measure exceed an environmental quality standard, should be described in the EIA. Municipality 1 and 2 describe such measures, and municipality 3 does not. None of the municipalities take up protective or compensatory measures.

The EIA actors generally prefer to plan so that no protective measures are needed, but sometimes it is not possible and then protective measures are important to include in the EIA. Interviewee no2 says "the protective measures are important, since one part of the EIA is that you should make as few interventions as possible and affect as little as possible. But it is still important to try to think about actions before you start building" (Municipality 2. Interview p,5).

7.4 Interview Study

Direct quotes from the interview study are used extensively to avoid distortion of the results as far as possible.

The outline for this part of the result is as follows: First the interviewees describe their role in the EIA process, followed by the results from the interview questions connected to the research questions of this study.

7.4.1 The role of the EIA actor

Interviewee no1 describes his role as teaching, due to the lack of knowledge among the municipalities; he often feels that he has to help the municipality throughout the entire process. More precisely he feels that he has to set up specific guidelines for the municipality to help them create a process. Interviewee no2 describes her role as a project leader; she also conducts training courses for various CAB's for training their staff regarding the reviews of

EIA's. It's a problem for the CAB to know which type of EIA they are reviewing, which makes it hard for the reviewer to know which part of the Environmental Code they should be working in and what type of demands they should have on the EIA. Interviewee no3 describes his role as supervising the process and making sure that the work of the consultants is within the municipality's guidelines and he is also sometimes partly responsible for the writing the EIA.

7.4.2 How well are the Environmental Objectives integrated in the process and does that have any effect on the quality of the DDP process?

The broad opinion of the interviewees was that it's hard to work with the Environmental Objectives as well as integrating them in the DDP process. The problem is related to the vague definitions of the objectives, but the interviewees also find it problematic that the Environmental Objectives are so numerous. The interviewees find it hard to relate a single DDP to the Environmental Objectives, especially as the projects often are small. Interviewee no3 said:

> "It is difficult to see the overall effect that a DDP could have on the Environmental Objectives. The municipalities need a system that captures all the DDP's produced each year and based from that makes it possible to anticipate the total effects from the DDP's. When you can consider these consequences you can relate the total consequences to the Environmental Objectives." (Municipality 3. Interview p,3).

The interviewees agree that when it comes to achieving a good quality in the DDP process, the Environmental Objectives are not a deciding factor. The Environmental Objectives take up a lot of time and focus, which could be spent on more important parts of both the EIA- and DDP process, for example the part of the report that defined the scope. Interviewee no2 said that "[…] the Environmental Objectives from the beginning were supposed to be used for guidance purpose, but now the Environmental Objectives are included in the Environmental Code which causes the Environmental Objectives to take up a lot of the focus in the EIA process, without giving much back in quality." (Municipality 2. Interview p,4). Standard formulations are commonly used to describe the effects of the plan on the Environmental Objectives, for example in line with or in the direction with the Environmental Objective.

Interviewee no1 said that he usually uses the section about the Environmental Objectives to write about issues that didn't fit into any of the other sections of the EIA. He means that it's always possible to dress the issues in Environmental Objective words to fit them under that heading. As the main part for him is to achieve a general environmental awareness and environmental knowledge in the process, he includes other important issues under the Environmental Objective part. The main factor why the interviewees did not think the Environmental Objectives are a deciding factor for good quality in the DDP process, is the fact that the Environmental Objectives don't promote the process or help significantly to shape the project. However, the interviewees thought that the Environmental Objectives could be used as a template for various plan designs. The Environmental Objectives are important but are more useful as guidance.

This study shows that the Environmental Objectives in general are not well integrated in the DDP process, with the exception of the Environmental Objective, *A Good Built Environment.*

Interviewee no3 said, “When the municipality works with DDP, the main focus is on the Environmental Objective *A Good Built Environment*, although it would be unreasonable for each plan to meet the requirements for that Environmental Objective. […] However, the municipality always aims in the direction of *A Good Built Environment* and all new plans should in its part contribute to that Environmental Objective being achieved” (Municipality 3. Interview p, 5). He means that the difficulties with the integration of the Environmental Objectives in the DDP process are due to that the DDP’s often are so small and the effects from them are hard to evaluate. He thinks it would be easier to integrate the Environmental Objectives during the general plan (the strategic governing document that shows an overall level on how the municipality intends to use the land and water in the future), since the general plan covers a larger area, the impact of the cumulative effect is both easier to see and calculate as well as relate to the Environmental Objectives. The other interviewees agree that the Environmental Objective *A Good Built Environment* is best integrated in the DDP processes, mainly because many performers have good knowledge about this certain Environmental Objective whereas the knowledge about other Environmental Objectives is lower. Interviewee no2 said the knowledge about the other Environmental Objectives fluctuates depending on how "in fashion" certain Environmental Objectives are” (Municipality 2. Interview p,6). By “in fashion” she means what the general public believes is important. She described “the climate discussion as being currently in fashion”.

The interviewees agreed that there are differences in the quality of the DDP processes, depending on which Environmental Objectives suffer negative consequences. For example, interviewee no3 pointed out that when a DDP affects a Natura 2000 area or other important area that needs a different authority’s approval, there is an increase in the quality. “Is there anyone else who is to decide on, or have views on the process, then I think we on the municipality take a greater responsibility, resulting in a higher quality” (Municipality 3 interview, p,5). Another interviewee pointed out that the EIA performer's own knowledge of various Environmental Objectives matters for the quality. In general the Environmental Objectives that affect people are treated more thoroughly. For example interviewee no2 said that, in general, the Environmental Objective *A Rich Diversity of Plant and Animal Life* is given less value/consideration compared to the other Environmental Objectives (Municipality 2. Interview, p, 6). This might be due to the fact that people find it harder to understand this particular Environmental Objective, because it is difficult to determine the benefits from it.

7.4.3 What do EIA actors consider important to achieve a good DDP process?

In order to achieve a DDP process with a good quality the general opinion of the interviewees was that the people involved need to have a broad knowledge, good qualifications and knowledge on how to find the data needed for the process. Another important quality among EIA performers is the ability to see the knowledge gaps in time, and to assess whether the existing data are sufficient. Interviewee no1 said that it’s easy that the procedure becomes narrow. If the knowledge is good in a certain part it is usually well represented in the process, while the parts where the knowledge is poor often are left out of the process. Another important factor in achieving a good DDP process is the ability among EIA performers to make themselves understood in a good and clear manner. Interviewee no 2 means that “If the

EIA report is poorly done or difficult to read, no one bothers to read it, and no one will embrace the facts. Then the purpose of the EIA is lost" (Municipality 2. Interview, p,5).

It's also important that the people producing and working with the DDP and EIA process are aware of when experts are needed in order to achieve a good quality. For example, interviewee no 3 confirmed "[…] the problem with the municipalities producing an EIA without experts is that the EIA tends to be a bit minimal" (Municipality 3. Interview, p,2).

One general impression from the interviewees is that the problem with the DDP process is the actual process itself. Interviewee no 3 said "It's hard to find an appropriate level of requirements for when a detailed development plan should undergo an EIA. I would say that a few percent of the detailed plans that are judged to cause no significant environmental impacts should have been judged to cause significant environmental impacts and should have undergone an EIA." (Municipality 3. Interview, p, 1). He means that because the process is so vague, there is a risk that an EIA is not done due to the work load involved in the process.

Other problems related to achieving a good DDP process is the system of consultants procurement. The process takes a very long time and it is possible to appeal the decision. Interviewee no 2 said "I think the municipalities may be reluctant to start the system of procurement of an EIA-contract because the procedure is expensive and takes a long time. Many needed plan assessments can probably slip away because it's too hard." (Municipality 2. Interview, p, 5). There are also major differences in the quality and ambition between different EIA's. Interviewee no 3 thought this is because the process is a bit vague and abstract. He said that it is hard to know what to do, even with handbooks. "I think that is a reason why sometimes EIA's are not done." (Municipality 3. Interview, p,4).

Interviewee no 1 thought that a large problem in achieving a good DDP process is the lack of knowledge about how an EIA process should be implemented. "The municipalities only know that an EIA should be produced, but not how it is done. The fact that the municipalities are not even aware of the steps involved in making an EIA is frightening" (Municipality 1. Interview, p, 3). The largest deficiencies are within the municipalities; he means that the *"municipalities themselves has drained their competence."* This could be a reason why the DDP as well as the EIA processes are not functioning as intended. Interviewee no 1 said that as an EIA performer you always have to try to put together the various components of the process, and that it seems difficult for the municipality to follow the intended process. It would be helpful if the municipality had a document on how the process should be performed. Interviewee no 3 agreed that there is a problem with the knowledge about the process, and that there are no real guidelines for the municipality to follow. Hence, it is up to each municipality to determine when an environmental assessment should be done. A result from this is that the quality of different processes varies between municipalities. Interviewee no 1: "Hopefully the quality of the DDP process becomes better when the municipalities understand that EIA is a process and not just a piece of paper that should be produced in 2-3 weeks' time, as it is today." ." (Municipality 1. Interview, p, 5). Interviewee no 2 felt that the municipalities hire EIA consultants to produce an EIA document rather than to perform the actual process. She felt that the municipality expects the consultants to perform tasks that should be under the

responsibility of the municipality, thus decreasing the available time for the actual tasks and thereby lowering the quality of the process.

A further problem with the process according to interviewee no 2 is the lack of collaboration between the various partners throughout the entire process. The consultant often enters in a late stage of the process to perform an EIA report with respect to the current plan status. If changes are made to the DDP after the consultant's work is done, there is a lack of feedback from the new changes in the DDP, making the EIA outdated and the quality low.

Another perspective on how to increase the quality of the DDP process is that in an early state emphasize the environmental issues. This would prevent the issues from slowing down the process later on, and this would benefit the process both time-wise and financially. To achieve a good EIA process it is important to find a proper level of the work and not spend valuable time on "unnecessary" parts of the EIA. One example is the problem with generating alternatives, all interviewees agreed that the process of creating alternatives in addition to the baseline alternative and the plan-alternative, when it's not necessary, is a waste of time and could decreases the quality of the process.

A proper level of work is of great importance especially when working with DDP's, since all DDP's are legally binding. Interviewee no 1 said: "You want to be certain that the assessments are correctly done and that all parameters are considered" (Municipality 1. Interview, p,3). Interviewee no 2 brought up the problem of determining the reason for the varying quality of different DDP's. She said that some DDP's are well executed, while others are not. So it's hard to say that it's the system that is the root of the varying quality of the DDP and EIA processes.

A different matter that emerged from the interviews is the fact that the quality of the processes is affected by the EIA Performer. Interviewee no 3 meant that the consultants in some cases are told to neglect certain issues. The plan administrator is so involved in the project that it becomes frustrating when the consultants "criticize" the project. It's important for the quality of the DDP process that the EIA performers stand up for themselves and deal with the criticism to conflate the processes.

What all of the interviewees felt was of importance for a successful DDP process is a good process leader who brings together the DDP and EIA process.

7.4.4 What role do the County Administrative Boards (CABs) have in the DDP process?

The CAB's role in the detailed development plans is to participate in the consultation meeting and the exhibition. When the municipality has adopted a DDP it remains for the CAB to control that certain issues have been dealt with in the plan.

It emerges from the interviews that there are deficiencies related to the CAB, both regarding the consultation as well as the statement for the DDP's. Interviewee no 1 said that the CAB is unsure of what to do in the process, "[…] which is a bit strange since it was eight years since

the rules on environmental assessment of plans and programs where changed […]"(Municipality 1. Interview, p,5).

Also, the DDP reviews from the CAB have a negative effect on the quality, due to the prolonged process of achieving a statement. The statements are hard to understand since the CAB don't make a final statement but rather a collection of comments from different persons at CAB, leaving the consultants in charge of making an interpretation of what the final statement should be; a task that should be performed by the CAB. The interviewees also feel that the CAB has an uneven level in their statements.
Under the consultation part the CAB should make sure that the DDP considers and coordinate the interests of the Swedish State. Although interviewee no 2 points out that the CAB involvement is very different, "[…] some are very involved in the project, while others not at all, I feel that is rather strange that it's such a big difference between CAB's." (Municipality 2. Interview, p,6).

7.4.5 The results from the interview questions touching the overall aim

The DDP process seems to have many flaws both in function, but also from an environmental perspective. Interviewee no 2 brings up an aspect that she thinks is missing in the DDP process. The aspect is the ecosystem services which have completely been lost in the EIA and DDP process. She says "The management of resources is included in the DDP and EIA process, but not the methods to equalize the local climate or use the plan area as a treatment of storm water. Nether evaluating what areas are needed for preparing the ability to produce locally cultivated food. The services that the nature and vegetation provides are very little carried about in the EIA process. I think these aspects should be included in the EIA's for it is something that municipalities would benefit from e.g. the size of the hinterland needed for a city to provide various services. I wish there would be a more holistic perspective in the process" (Municipality 2. Interview, p,3). Interviewee no 3 says "Other weaknesses of the process are that once the process has started, it is hard to stop. One way of preventing that "bad" process starts is to have an early investigation, which coast money. Many municipalities believe that it may be unreasonable to put money on investigations before the process has even started." (Municipality 3. Interview, p, 5).

8 Discussion

The examined documents have their pros and cons regarding to fulfilling a good DDP and EIA process. However there are shortcomings in both the DDP and the EIA process, is partly due to the actual performing of the processes.

The quality of the DDP process for municipality 1 is rather poor; several aspects are missing, for example the comparison of different environmental aspects, the impacts from the plan and the accounting of the use of resources are all missing. The impression you get from reading the EIA is that, the EIA is produced as a report and not as a process, which is the point of an EIA; this makes the quality poor and the processes inadequate from an environmental perspective. Since the EIA is produced in the end of the process some parts are lacking, such as a description of how the Environmental Objectives should be observed or the environmental impact from the plan. Another reason why the EIA is poorly made is that the CAB had to come in and help the process; which indicates a lack of knowledge or low prioritized research, since the EIA fails to cover all the environmental impacts. This is a possible source of ineffectiveness in the DDP process; Isaksson & Storbjörk, (2012. p.1)

identified mechanisms that produced ineffectiveness by limiting the role of environmental knowledge throughout the plan process. A large focus of the EIA is on the residential design and the land, and very little on the environmental aspect. This proportion appears unfitting, and one interpretation could be that the municipality tries to prevent the reader from understanding the actual consequences that might occur from the plan and thereby trying to change the readers focus to how the residential design will look, should the plan go through. The impression given from the investigation is that the plan should have been stopped a long time ago. One of the biggest problems with the plan is that the soil fails at several points to be suitable as residential soil; also the Environment Agency declines the implementation due to the bad position for residential area. The reasons why the plan has come as far as it has, in my opinion, is either because the municipality lacks the knowledge of how to conduct an DDP and EIA process, or do not see the shortcomings in time to stop the process, this might also be because of a direct pressure from politicians (which emerged from the interview). Previous studies indicate that there are problems with transforming policy and planning in a more sustainable direction (Asplund & Skantze, 2005). Isaksson & Storbjörk, say that in order to increase effectiveness among DDPs and EIAs a fundamental transformation of the norms, frameworks and routines is required. The Environmental Committee says in the consultation "that the best location has not been selected and that the need for new housing can be met in other more appropriate locations."(Municipality 1. Plan Description document, p, 40). What makes this EIA hard to examine from a reviewer's point of view, is that there is no clear comparison between the alternatives and the consequences; no tables that helps the reviewer to understand the information. The cause may be that the consultations have taken place too late in the process or too few times, since the plan was revised radically after the exhibition. The overall environmental impact is not stated in the EIA, which can seem strange, I believe that this DDP will be the DDP with the most comprehensive environmental impact of all the examined processes. My opinion is that the DDP and EIA coordinators try to ignore the problem, which is one of the two unawareness shapes in the theory from Beck.

Municipality 2 gives an example of a well performed process. The information from the EIA and the other document indicates a good DDP process, where the EIA has been a part of the process from the beginning; from the consultation one can see that the collaboration between the EIA consultants and the municipality has been performed in a correct way. Another positive feature of the EIA is that it is clear that the EIA has been revised. The EIA actor brought up in the interview that the person in charge of the DDP process is very careful and thorough with the process, which can be seen in the documents.

The quality of municipality 3 DDP process could be better and clearer. The shortcomings may be due to the fact that it is the same person who produced all of the DDP documents, i.e. the Implementation Assessment document, the Plan Description document and the EIA. The impression I get is that this could be a source of error, when the same person is responsible for all documents, for example the documents and the information can get affected by the author's views, which he also brings up during the interview "depending on one's own professional background and interests, it can affect which parts of the EIA that gets prioritized." (Municipality 3. Interview, p,2). He also mentions that sometimes the quality is lacking when the municipality itself makes the EIA, partly due to that the creation of an EIA is done infrequently and that the performer is relatively unfamiliar with the process. Since it is the same person who conducts all the documents, the risk of that person effecting the process is larger than if several people are involved in the process, also the municipality can influence the information and design to its advantage compared to if an environmental company produces the EIA. Another negative aspect with the DDP and EIA process is the failure of the

prevention measures against noise pollution, this was the most important preventive measure of the project and was planned in the documents to prevent noise in the apartments by glazing in balconies, however this never happened other than to the residents who paid for it. I can understand if it would not have been profitable to hire a consultant this case, since large parts of the plan area already was developed. However for the quality in the process, it would have been good, especially considering the failure with the preventive measure. It is strange that the measures are not followed up and no control is made that they are implemented. My opinion is that the EIA is lacking in quality when certain items are not included even though they should be addressed in the EIA according to the Environmental Code.

Other possible causes identified to cause an inadequate process are problem with understanding and interpreting the law the Environmental Objectives and the lack of alternatives. Today there are two legislations that governs the DDP and the EIA process, both legislations are quite comprehensive and the interviewees feel that there is a lot of room for personal interpretations. Further it is the opinion of the interviewees that the competence among the EIA and DDP actors, in general is to low when it comes to legal knowledge, and the interviewees opinion is that the DDP and EIA process could be made easier and more hands-on to improve the quality of the processes. Interviewee no 3 would like to have more helping manuals that compiles good examples of what significant environmental impact is. It is EIA actor no 1 opinion that the two legislations should be used even if they are hard to grab," I usually try to simplify the legislations to make them more specific and applicable" (Municipality 1. Interview, p,7). This could be an additional source of uneven quality in the EIA, when an EIA actor decides to simplify the law and reflect the simplified version to the plan. Previous studies indicate that there is a clash between the rationalistic theoretical roots of EIA and the challenges involved in complex real-world situations (Cashmore et al, 2007; Owens and Cowell, 2002).

When considering the Environmental Objectives, the broad opinion of the interviewees is that it's hard to work with the Environmental Objectives as well as integrating them in the DDP process, since they are vaguely defined, and so many. The interviewees also feel that the difficulty lies in relating solitary DDPs to the Environmental Objectives, especially when the projects often are small. The difficulty is to see the overall effect that a DDP could have on the Environmental Objectives. The main factor to why the interviewees don't think the Environmental Objectives are a deciding factor for good quality in the DDP process, is due to the fact that the Environmental Objectives don't promote the process or help significantly to shape the project and that the Environmental Objectives is that they take up a lot of time, without giving much back to the process.

Another shortcoming are alternatives, alternatives are presented in all DDP reports examined, as well as the reasons why these alternatives were chosen. All DDPs account for the baseline alternative; however no other alternative places are described except for the plan-alternative. The reason is probably due to that there was only the baseline option and the plan-alternative, which usually is the case in plan processes. It appears that the EIA actors don't want to put a lot of time into producing additional alternatives when there is no reason, when time could be spent on more important parts of the report. The explanation might be that either there are no further alternatives, i.e. the plan process would not be implemented in another place, so there is no reason for further alternatives; or the responsible plan coordinator in the municipality do not feel motivated or qualified enough to produce further alternatives. Perhaps the lack of motivation is based on a skewed picture of nature which can contribute to an unsustainable approach to the nature and the environment. The purpose of an EIA as a legal tool to promote sustainable development can then be jeopardized.

Another possible cause identified to cause an inadequate process is the lacking competence among the responsible plan coordinator in the municipality as well as the different levels of engagement and diligence among the plan administrator. In order to achieve a DDP process with a good quality the general opinion of the interviewees, is that the people involved need to have a broad knowledge and good qualifications. The interviewees explained that it is important to see the knowledge gaps in time and to assess whether the existing data are sufficient; otherwise there is a risk that the procedure becomes narrow. If the knowledge is good in certain part it is usually well represented in the EIA process, meanwhile the parts of the process where the knowledge is poor often gets left out of the EIA process. Another important factor that the interviewee's brought up is the ability to make you understood in a good and clear manner. Because if the produced EIA report is poorly done or difficult to read, no one bothers to read the EIA report, and no one will embrace the facts. Then the idea of the purpose of the EIA is lost. What seems to be of importance for a successful DDP process is a good process leader who brings together the DDP and EIA process. The interviewees expressed the opinion that the EIA actors have too much responsibility to perform the process adequately. The EIA actors feel they have to do others actors work in the DDP process and that their own work suffers from the lack of knowledge among the people involved. It is the EIA actors task to decide whether the information supply is enough or if experts are needed to increase the quality of the process. Interviewee no 1 said … "it is often our responsibility to teach the other actors about the importance of EIAs and the environmental aspects." (Municipality 1. Interview, p,1).

The varying competence among the CAB reviewers is an additional problem identified from this thesis. It emerges from the study that there are problems related to the CAB, both regarding the consultation and the statement of the decision for the DDP's. One of the interviewees says that the CAB is uncertain of what to do in the process, which can have a huge negative effect on the quality of the process. The interviewees also find that the CAB has a negative effect on the quality, due to the prolonged process of achieving a statement and the uneven level in their statements. The plan coordinators and above all the CAB need to have a more consistent level in their statements to achieve a process with good quality. The problem is when different actors involved have different or even contradictory ambitions and understandings of the goal of an EIA (Isaksson & Storbjörk, 2012).

The general impression from the interviewees is that the EIA actors feel that it is up to each of the EIA performers to make the processes as good as possible. Since this thesis is a qualitative study I can only speak for the three DDPs that I have investigated. The three DDP processes that I have investigated are quiet uneven when it comes to quality and how well the process have been performed. All examined documents have their pros and cons regarding to fulfilling the demands of the Swedish legislation of the Planning and Building Act and the Swedish Environmental Code.

9 Acknowledgements

I would like to warmly thank all who help me during the thesis, especially my supervisors Veronica Brodén and Karin Tonderski, for their help and guidance. Also big thanks to all the interviewees for their time and information. Finally I want to thank Arwid and my family, and all other of my friends who have supported and helped me to complete this thesis.

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[http://www.naturvardsverket.se/Start/Sveriges-miljomal/Generationsmal/]

Appendix 1

Interview Guide

The Actors/Consultants Background and Role

1. Describe how you come in contact with EIA processes. What is your role?
2. Describe your experience with EIA processes. (have you been working with this for a long time?)
    a. Did your approach change over time (EIA)?
    b. Do you use some kind of checklist for your work, where did you get it and have you made any modifications to it?
    c. Do you think your professional background affects which parts of the EIA you prioritize?
3. What is, in your view, the purpose of an EIA?
    a. What abilities of an EIA performer do you feel are important in achieving a good quality EIA?
4. What type of challenges do you normally face as an EIA-performer/consultant in regard to detailed development plans?
5. Do you have any specific thoughts regarding the work of performing an EIA in relation to a detailed development plan.

Importance of Environmental Directive in the EIA process

What importance do you think these bullets have for the EIA process and how do you think the bullets contribute to the quality of the EIA process.

- Environmental Objectives
- Environmental Quality Standard
- Defining the Scope
- Description of the Current Status
- Alternatives
- Total Environmental Impact
- Protective Measures

Deficiencies and Causes of Deficiencies

1. Do you feel that there are any problems or deficiencies with the EIA process?
    a. Do you have any idea about what the possible causes for this might be?
    b. Do you have any suggestions for improvements?
2. Do you feel that there are any weaknesses with the detailed development process? If so, what are the weaknesses and during which part of the process?
3. How well do you feel that the Environmental Objectives are integrated in the DDP-process and do you think it has any effect on the quality of the EIA?
4. Do you think there are differences in quality among detailed development plans depending on which Environmental Objectives areas that are negatively impacted?
    a. Does this, in your view, differ between municipalities?
5. Several instances are involved in an EIA; do you feel that there is some instance which is lacking in terms of achieving a good quality in the process?
    a. How well is the county administrative board's review process working and how does the role and standpoint of the commissioning body affect the process?
6. What are your feelings regarding the legislation; would it be easier to follow the directives in the environmental code if these were clearer? Would it be possible for the quality to improve by adding more directives?
    a. Do you use any special handbooks or have you received some education to increase the quality of the process? Why?
7. Is there something you would like to add?

Appendix 2

Following points shall be accounted for in the document of the EIA:

1. A summary of the plan or program content, i.e. its main purpose and relationship to other relevant plans and programs;
2. A description of the environmental conditions and the likely environmental development if the plan or program is not implemented;
3. A description of the environmental conditions in the areas likely to be significantly affected;
4. A description of how the relevant Environmental Objectives and other environmental concerns are taken into account in the plan or program;
5. A description of the significant environmental impacts that are likely to arise in respect to biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, landscape, buildings, archaeological and cultural monuments and other heritage and the interrelationship the relationship between these aspects;
6. A description of the measures envisaged to prevent, hinder or prevent significant environmental effects;
7. A summary of how the assessment were made, the reasons behind the selections of different options and possible problems associated with the process shall be compiled;
8. A description of the measures planned for follow-up and monitoring of the significant environmental effects that can arise from the implementation of the plan or program;
9. A non-technical summary.

Appendix 3

The Swedish legislation of the planning and building act has certain points that a DDP process should take into consideration. During the investigation, these points have been used as a template during the investigation.

The following points shall be accounted for in the document:

- The purpose of the plan.
- The requirements for the plan process.
- How the plan will be implemented.
- The environmental impacts from the plan.
- The suitability of the soil for the plan.
- Land-use and execution time.
- Reporting on how land and water should be used and delimited in the plan.
- Requirements for the design and placement shall be presented.
- Protective measure.
- Soil contamination must be adjusted before permission may be given.
- The map that shows the plan-area should describe how the area should be divided and what rules apply.

Aim and purpose

Shall account for:

- The DDP's aim and purpose is clear.
- Relevant environmental issues, especially the international and European environmental targets considered in the formulation of the plan's purpose and objectives.
- Conflicts between different objectives appears in the document
- Requirements for the design and placement shall be presented.
- Execution time.

Description of the area in present time

Shall account for:

- Address the current status of the surrounding environment, as well as the likely evolution of the area if the plan is not implemented.
- Address and describes the areas properties, as well as the areas that will get a secondary effect from the plan.
- Specify whether there are any inaccuracies, in the information or in the methods.

Alternative

Shall account for:

- Realistic alternatives and reasons why they were chosen.
- The baseline option and alternative places except for the plan-alternative.
- The positive and negative effects of the environmental impact.
- Conflicts between the alternatives and other relevant plans shall be described.
- Reasons shall be given for why alternatives were selected or not.

Delimitations

Shall account for:

- Relevant aspects shall be treated and limited.
- A description of uncertainties and assumptions.
- A description of discrepancies if it occurs.

Evaluation of expected significant environmental impacts

Shall account for:

- Identified aspects such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage and landscape) and other aspects where relevant.
- Secondary, cumulative and synergetic consequences, positive as well as negative, and their life spans should be taken into consideration.
- The methods used in the evaluation should be described.
- Soil contamination should be corrected prior permission may be granted.
- The land shall be assessed for the suitability of the plan.
- The land use
- Environmental consequences

Compensation measures

Shall account for:

- The measures envisaged to prevent, reduce, or as far as possible offset any environmental impact resulting from the plan.
- Proposal for prevention measures.

Monitoring and follow up

Shall account for:

- Follow up the significant environmental impacts that can arise from the plan.

- These monitoring’s are relevant for the goal with the plan and are described in the EIA.