One For All, All For One

Actor analysis research in practice

Master Thesis Report

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Grontmij Nederland B.V.
Houten, September 29, 2010
Preface:

This report is the result of a graduation assignment for the master study Engineering & Policy Analysis at the Technical University of Delft in the Netherlands. It included a five-month research period at the consultancy company Grontmij, in which actor analysis for practical use is studied.

It’s a strange but also a satisfying feeling to be writing the final part of my research. I remember myself searching for an assignment in the beginning, not really knowing what I wanted to research. Thankfully by talking to lots of people and by narrowing my focus, I eventually got the opportunity to begin this graduation assignment.

But before we rush into the interesting content of this graduation report, I would like to thank some people who made it possible for me to perform this assignment. First of all I would like to thank all of my supervisors for their support during my research. I would like to thank Leon Hermans (1st supervisor) for his time and effort he put into reading all of my reports and providing comments on those. I really believe that this helped my report to the next level. I would like to say the same to Erwin de Bruin (supervisor Grontmij), as he also provided me with lots of feedback, and gave me the opportunity of getting to know the company Grontmij. I would like to thank Sybe Schaap (professor) for also providing me with feedback and sharing his experience in the water sector with me. Also I would like to thank my 2nd supervisor Bertien Broekhans for her feedback. Finally I would like to thank Tineke Ruijgh-Van der Ploeg for supporting me in the beginning when searching for a graduation assignment.

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Of course I would also like to thank my family and friends. My parents who made it possible for me to continue my studying career and always supporting me in my work. I would like to thank the rest of the family, brother, sisters, uncles, aunts, grandmothers and grandfather for their support during my graduation assignment. I would like to thank my good friends from Hilly for their support, interest and patience during my graduation assignment. I would also like to thank her parents for their support.

Tom de Booij
Rotterdam, September 2010
Summary:

This report consists of the Master Thesis research for actor analysis in practice research. This research consists of a theoretical review of actor analysis and how the use of an actor analysis in practice can be improved.

The central research question of the study is: **How can the use of an actor analysis method in practice be improved, and what is the added value of an actor analysis for of a company like Grontmij?**

The research consists of the following sub-questions which contribute in answering the main research question:

1) What is an actor analysis and which methods are available?
2) What are the current problems with the use of an actor analysis in practice and how to deal with these?
3) What experience does Grontmij have with actor analysis, and what is its purpose and conditions for using an actor analysis method?
4) Can an actor analysis framework be designed that combines theoretical insights with practical needs?
5) How does the actor analysis framework function in practice?
   a. Can the framework usefully be applied to investigate the actor network for the Floods Directive in the Netherlands for Grontmij?
   b. Can the framework usefully be applied to investigate the actor network for the weak link case “Kop van Noord-Holland” for the Spatial Restrictions project Grontmij is involved in?

Now a days the incentive towards including relevant parties into a decision making process has increased. Decision makers and organizations find it important to involve relevant parties in their problem/process, as this will lead to better outcomes of the process. Relevant parties are called actors, which are defined as “those parties that have certain interest in the system and/or that have some ability to influence that system, either directly or indirectly”. Ways to identify actors involved in the project/process are called actor analysis methods. Actor analysis methods are “methods that provides insights into the characteristics and perspectives of one or multiple actors involved in a decision making process”.

Three different problems are identified with the use of actor analysis methods. First the actor analysis methods are complex, which makes them less attractive to use in practice. Second there are many different actor analysis methods available (around 18). This makes it difficult for a company to select an appropriate actor analysis method. Third there are no follow-up actions identified after an actor analysis is performed.

The first and second problems with actor analysis are concerned with the practical use of actor analysis. For these problems research is performed into how to solve these problems. For the problem of no follow-up actions a literature study is performed, which needs to be further investigated to fully develop these follow-up actions. Because so many different actor analysis methods are available, a selection of analysis methods is made during this research. This selection is based on the repeated use of the methods in analytical research and the personal experience of the researcher with these methods. The following actor analysis methods are selected for this research: Stakeholder analysis, (TUDelft) Public Stakeholder analysis, Social Network Analysis, Metagames, Dynamic Actor Network Analysis (DANA), Q-Methodology and Transactional Analysis.

The selected actor analysis methods are analysed and discussed in this report. The possible steps to perform the actor analysis methods have been determined and examples of the use of the methods are provided. In this way more understanding about the actor analysis methods is created, which may reduce the complexity of the actor analysis method. In this research not much more can be done about the complexity of an actor analysis method. A method becomes complex by means of its analytical method. Some methods use checklist-only models, while other actor analysis methods use mathematical or statistical models. By providing insights into the actor analysis methods the complexity of the method may be reduced by creating understanding about the method.
An actor analysis framework is developed which provides an overview of the different criteria and factors that have influence on the selection of an actor analysis method. The goal of this actor analysis framework is to support an analyst in identifying the most appropriate actor analysis method for his project case. The framework consists of two steps: in the first step the analyst has to get familiar with the project environment, and in the second step the actor analysis method is selected. By means of this framework the complexity of selecting an appropriate actor analysis method is limited. It allows analyst to be able to select an actor analysis method within a few steps. In this way the complexity of the large amount of actor analysis methods is reduced, but it also provides analysts with a validation of choosing their actor analysis method. The framework has proven its use in practice, as it successfully selected suitable actor analysis methods for project cases and has been positively evaluated.

Also by providing Grontmij with a collection of different actor analysis methods the scope of their analysis possibility increases. The scope of a Stakeholder analysis is limited (for example it cannot analyse large groups of actors) for which different actor analysis methods are needed. The different actor analysis methods are developed to analyse specific characteristics of the actor network (like relations or perceptions). Therefore these methods should provide the analyst with more in-depth insights into these characteristics than the Stakeholder analysis.

The fact remains that the actor analysis methods presented in the framework are complex methods (except stakeholder analysis). Because of the complexity the barrier to use these methods is high. From a practical point of view these actor analysis methods really need to posses an added value before using them instead of Stakeholder analysis. Analytical quality is still not that important in practice.

The added value of some actor analysis methods is tested by means of two project cases (Floods Directive and Spatial Restrictions). In the first case the (TUDelft) Public Stakeholder Analysis is used. This method consists of an extended stakeholder analysis, in which the analytical quality of the analysis is higher than the stakeholder analysis. The reactions on the (TUDelft) Public Stakeholder analysis were very positive, mainly because of its clear steps and tables, and the provided insights into the actor network. This method therefore proved its added value to use in practice.

For the second project case DANA was used. DANA makes use of a modelling approach (causal relation diagrams) in which the perceptions of actors and the relations between actors are analysed. Although the DANA analysis didn't provide new insights into the actor network for Grontmij, the method did provide some added value. The possibility to determine ideal strategies and actors perceptions on those strategies could have an added value for the analysis. Also the presentation of the perception diagrams and figures may be useful when communicating to the client. Therefore DANA could also have an added value, but still the problem exists of being a complex and time intensive method.

The conclusion of the research is that the actor analysis has an added value for companies like Grontmij. The added value of an actor analysis is that these methods provide a high quality and in-depth analysis in an actor network. In practice this results often in a time consuming and therefore costly analysis, but in some cases this in needed. As some actor analysis methods proved its usefulness in practice, it is up to the analyst to determine to use an actor analysis or the stakeholder analysis. To improve the practical use of an actor analysis a selection framework is developed. This framework supports an analyst in selecting an actor analysis. Also the actor analysis methods presented in the selection framework are analysed and insights are provided in the usability of these methods. This creates more understanding about the actor analysis methods, which may lower the barrier to use the actor analysis method.
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1. Introduction:

The famous line in the title “One for All, All for One” comes from the story of the three Musketeers. They use it as their cheer when going into battle and means that they will all take care of each other. In some sense you can compare this with the basic idea of actor analysis. Nowadays the importance of involving parties or groups (all for one) in the decision making process (battle) has increased a lot. Especially in the Netherlands which are famous for their “Poldermodel” (model of negotiations). It is argued that due to better understanding and involving parties with interest, the outcome of the process will be better (Grimble et al, 1996).

Different methods have been developed to structure, select and analyze involved parties in a process. These parties have been called “actors” or “stakeholders”. Although these terms are well used, there are still some misunderstandings about the differences between the two. An actor is defined as “persons, groups, organizations...that are capable of making decisions and acting in a more or less coordinated way” (Burns et al., 1985; Hermans, 2005). In other words, they are “action-units” (Klijn and Teisman, 1992, p. 8; Hermans, 2005). A stakeholder is defined as “any group or individual who can affect or is affected by the achievement of the organization’s objectives” (Freeman, 1984, p. 46; Hermans, 2005). Here the emphasis lies more on the “stake” or interests of the parties in the process (Hermans, 2005). Actor analysis methods have been developed for identifying important actors in a project.

The actor analysis is mainly used for theoretical research or by knowledge institutes (like universities). In practice the actor analysis methods are not often used for multiple reasons. It therefore seems that more is possible in theory with an actor analysis than what is actually used in practice. This research will identify the problems with the actor analysis in practice and how to deal with them.

This Master Thesis Report consists of developing an actor analysis framework for the company Grontmij. The framework should serve as a guideline when performing an actor analysis in practice. An actor analysis is performed on two cases for Grontmij. The first is the Floods Directive case and the second is the Spatial Restriction case in the Northern Province of the Netherlands.

The main research objective of the research project is to explore:

*How can the use of an actor analysis method in practice be improved, and what is the added value of an actor analysis for of a company like Grontmij?*

The added value of the research will be that it creates more insights into the problems of an actor analysis in practice and how to deal with these problems. It further provides some insights into cooperation strategies and possible next steps after an actor analysis.

The structure of this Master Thesis Report consists of first discussing the research approach and methodology. After that the literature study on actor analysis is discussed, followed by the chapter about the company Grontmij and their perspectives on actor analysis. After that the actor analysis framework is discussed, followed by two case studies of the actor analysis in practice. After that the framework and cases are evaluated and finally the conclusion of the research is discussed.
2. Research Method:

This chapter provides an overview of the research method. First an overview of the research sub question are given, which is followed by the discussion of the research framework. The research framework provides an overview of the activities to perform during the thesis research. After that the research approach will be discussed.

2.1 Research Questions

In this section the sub-questions of the research are stated. The main research question for this research is:
How can the practical use of an actor analysis method be improved, and in what way can the analysis be performed by a company like Grontmij?

The research consists of the following sub-questions which contribute in answering the main research question:

1) What is an actor analysis and which methods are available?
2) What are the current problems with the use of an actor analysis in practice and how to deal with these?
3) What experience does Grontmij have with actor analysis, and what is its purpose and conditions for using an actor analysis method?
4) Can an actor analysis framework be designed that combines theoretical insights with practical needs?
5) How does the actor analysis framework function in practice?
   a. Can the framework usefully be applied to investigate the actor network for the Floods Directive in the Netherlands for Grontmij?
   b. Can the framework usefully be applied to investigate the actor network for the weak link case “Kop van Noord-Holland” for the Spatial Restrictions project Grontmij is involved in?

2.2 Research Framework

The research framework consists of a sequence of steps that is performed in the research project. These steps are presented in figure 1.

The first step in the research project is to gain knowledge about actor analysis and Grontmij. With this knowledge some criteria for actor analysis can be determined. These criteria consist of requirements for the use of an actor analysis gathered from theory and Grontmij.

Once the criteria are determined the actor analysis framework is developed. The framework consists of some steps to determine an actor analysis method to performing in practice. Because there are so many different types of actor analysis, it will be difficult to determine the best analysis method for Grontmij. But it is possible to determine some guidelines of performing an actor analysis. This is also depending on the needs of Grontmij, which are determined by interviewing Grontmij personnel.

The third step in the research consists of using the developed actor analysis framework in practice on two selected cases. These cases are the Floods Directive and the Spatial Restrictions project in the North of the Netherlands. The first purpose of the cases it to serve as practical tests for the actor analysis framework. The second purpose of these cases is to gain more insight into the actor network which is beneficial for Grontmij.
The last step consists of an evaluation process. In this process the actor analysis framework is evaluated and the practical use is discussed. It is evaluated if the framework meets the required criteria. Suggestions and problems will be discussed and a general conclusion about the use of an actor analysis can be made.

Figure 1: Research Framework, overview of steps in research
2.3 Research Approach:

In this section the approach of the research is discussed. The different research methods are discussed and related to the sub-questions these methods will help answering.

The first step in the research is a desk research\textsuperscript{1}. A desk research includes a literature study on actor analysis methods. Different scientific articles and books are analyzed and reviewed to create the theoretical framework for actor analysis. These scientific articles and books are gathered from the TUDelft library and internet sites like Google Scholar, Scopus, ScienceDirect and Elsevier. Also a literature study is performed to identify cooperation strategies and a next step for actor analysis. By performing the desk research method the following sub-questions are answered: 1, 2, and 4.

Interviews are held during the research with Grontmij personnel to gain more insights into the perspective of Grontmij on actor analysis. This helps in determining criteria for the actor analysis framework. The persons selected for these interviews are Grontmij personnel with some experience performing an actor analysis. This is done to get an overview of the use of an actor analysis by Grontmij. Also interviews will be held with important actors in both research cases. With these interviews more insights into the perspectives of actors for both cases are gained. When it is not possible to perform an interview with an actor, the perspectives are determined from related literature about the actor. By performing interviews the following sub-questions are answered: 3, 4, 5a and 5b.

A second research method used is a case study to define if the actor analysis framework works well in practice. Two case studies are selected. The case studies are the Floods Directive and the Spatial Restrictions project (case weak link “Kop van Noord-Holland”) in the North of the Netherlands. The case studies serve as projects to determine the practical use of the actor analysis framework. By performing the case study method the following sub-questions are answered: 5, 5a and 5b.

In the end the actor analysis framework is validated and evaluated. The results from cases, staff experience and expert experience will determine the usability of the actor analysis framework. This will answer sub-question: 5

\textsuperscript{1} Verschuren, P. and H. Doorewaard (2005). \textit{Designing a Research Project}. Utrecht, LEMMA.
3. Actor analysis

The identification and involvement of parties in a decision making process or project is considered to be of great importance for the success of processes/projects. It is argued that due to better understanding and involvement of parties with interest, the outcome of the process will be better (Grimble et al, 1996). Over the years the amount of interests groups has increased which makes the decision making process more complex. Inadequate management of the concerns of these involved parties often leads to conflicts and controversies (Olander and Landin, 2005). This can result into time delays and costs increases which are unwanted. Therefore it is important to understand each others viewpoints to help build relationships (Olander and Landin, 2005).

Grontmij is active in infrastructure projects. Planning of infrastructures typically involves many organizations with conflicting interests and diverging control over crucial issues, such as technological and social safety, economic potential, and environmental concerns (Timmermans and Beroggi, 2000). The increasing interaction of urban and rural infrastructure systems requires more intense coordination between planning organizations with quite diverse objectives (Timmermans and Beroggi, 2000). This makes it for Grontmij important to identify the relevant parties in a project and involve them in the decision making process.

This chapter consists of a literature study of actor analysis. First the theory of actor analysis is explained and second the use of an actor analysis is discussed; followed by some requirements determined for an actor analysis. Next the current problems of an actor analysis are discussed, followed by the discussion of some actor analysis methods. This provides some insights into the different actor analysis methods available from theory. The chapter ends with a general conclusion in which sub-questions 1 and 2 are answered.

1. What is an actor analysis and which methods are available?
2. What are the current problems with the use of an actor analysis in practice and how to deal with these?

3.1 What is an actor analysis?

Different methods have been developed to structure, select and analyze all the involved parties in a decision making process. These parties have been called “actors” or “stakeholders”. Although these are familiar terms, there is still some misunderstanding about the use of these terms. An actor is defined as "persons, groups, organizations...that is capable of making decisions and act in a more or less coordinated way" (Burns et al., 1985; Hermans, 2005). In other words: actors are those parties that have certain interest in the system and/or that have some ability to influence that system, either directly or indirectly (Enserink et al, 2010). A stakeholder is defined as “any group or individual who can effect or is affected by the achievement of the organization's objectives (Freeman, 1984, p. 46; Hermans, 2005). Here the emphasis lies more on the “stake” or interests of the parties in the process (Hermans, 2005). In practice these terms are often used interchangeably. In this research the term actor is adapted and used as earlier defined. A stakeholder is used to refer to those groups that have an interest, or stake, in decision making processes, but that have relatively little means to influence decision making or the system (Enserink et al, 2010).

But what is actually an actor analysis method? According to Lei (2009) an actor analysis method is defined as “a method that allows for the study of some or one characteristic of multiple actors” (Lei, 2009:26). In this research an actor analysis method is defined as “a method that provides insights into the characteristics and perspectives of one or multiple actors involved in a decision making process”. When analyzing an actor it is important to find out the characteristics of an actor in general, but also its perspectives on the problem. This provides a better understanding of an actor involved.
3.2 The Multi-actor perspective concept:

Actor analysis is an often used analysis in the field of policy analysis and policymaking. Policy analysis is aimed at facilitating the policymaking process by producing policy-relevant information that can be utilized to resolve problems in specific political settings. Finding solutions to problems is thus the core of policy analysis (Dunn, 1981, p. 2, 62, and 84 in Van de Riet, 2003 p.1).

There are different perspectives identified to look at policy making problems. A first perspective is the single-actor perspective. From a single-actor perspective policy making is seen as a rational process, going through certain stages (agenda setting, policy formulation and legitimation, implementations and evaluation (Sabatier, 1999, p. 6; Ripley, 1985 in Hermans, 2005p. 10)), to end up with a rational choice for the “best” policy to address a certain problem (Hermans, 2005). It only looks from the perspective of one or two central actors. The stages approach provides a chronological framework for looking at policy processes that has a logical appeal, but: “reality as it emerges in any case may vary significantly from what the stage-based model says ‘should’ happen in a specific order”(Ripley, 1985, p. 162: in Hermans, 2005 p.10).

Policymaking is not or is no longer characterized by ‘the choice’ of ‘the policymaker’ (Rosenhead, 1989; Bennet et al., 1989; Geurts and Joldersma, 2001 in Van de Riet, 2003 p.1). Instead, there are the divergent interests of multiple actors, each of which has some resources (Van de Riet, 2003). This brings us to the second perspective on policy making, the multi-actor perspective. In a multi-actor environment, public policies are not explained by the intentions of one or two central actors, but are generated within actor networks in which multiple actors are interrelated in a more or less systematic way (Kenis and Schneider, 1991: in Hermans, 2005 p.11).

The multi-actor perspective fits better with the reality of policy making in a multi-actor environment. A multi-actor policy setting is characterized by multi-actor complexity (Van de Riet, 2003). This complexity arises from the diversity in problem perceptions among actors involved (Bernett et al., 1989; Rosenhead, 1989 in Van de Riet, 2003 p.23). This diversity stems form the divergent interests among actors on one hand and actors divergent perceptions of reality on the other hand (Van de Riet, 2003). Public problems and infrastructure problems are situated in a multi-actor environment. Lots of different actors are involved that have different problem perspectives and values. Because Grontmij is active in consulting and construction in society, they also face the multi-actor complexity. An actor analysis can help structure the multi-actor environment.

3.3 Use of actor analysis:

In this chapter the use of an actor analysis is discussed. In the literature different purposes for actor analysis are determined. The use depends on the problem situation, and the insights a decision maker wants to receive from the analysis (purpose). It is therefore important for an analyst to clarify which insights are needed when performing an actor analysis. Examples of purposes can be to gain information about the actor network to identify perspectives of actors, or strategically position you within the actor network.

Policy analysis is a broad and versatile field of applied policy research and advice, where a multitude of perspectives and methods have developed (Mayer et al, 2004). Actor analysis is one of those methods. In the work of Mayer et al (2004) a hexagon is presented which provides an overview of different policy analysis activities. The model serves three purposes: understanding of policy analysis as a discipline, contribution to the design of new policy analysis methods and projects, and guidance for evaluating such methods and projects (Mayer et al, 2004). In figure 2 the hexagon is presented. In the work of Enserink et al (2010) this hexagon model is used to formulate different uses for an actor analysis in the different policy activities. The different uses of an actor analysis are provided in table 1.

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2 Networks are “more or less stable patterns of social relations between interdependent actors, which take shape around policy problems and/or policy programmes” (Klijn, 1997:30 in Enserink et al, 2010).
Actor analysis can help to...  

<table>
<thead>
<tr>
<th>Policy analysis activity</th>
</tr>
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</table>
| Research and analyze | Mobilize knowledge and information from a broad actor base, which is likely to improve the quality of the problem analysis.  
| Design and recommend | Create ideas for alternative strategies and tactics, by mapping options and interests of different actors. This helps to identify common ground and shared fundamental values, to identify ways in which different actors can contribute to these values, and to identify needs and possibilities for compensation or mitigating measures to satisfy particular actors.  
| Advice strategically | Assess the feasibility and implement ability of policy options, by mapping the positions, interests, resources, and relations of actors, providing insight into the opportunities and threats that actors offer for problem solving.  
| Mediation | Map conflicts, identify (potential) coalitions of actors, and propose a road map for a negotiation process, including agenda items and participant in various stages of discussion.  
| Democratise | Ensure that all the important actors are included in the policy process, and/or that their views and concerns are incorporated in the problem analysis. This supports a, from a normative point of view, more legitimate problem analysis.  
| Clarify values and arguments | Include the full range of values and arguments in a policy analysis, which aids a problem analysis that is recognized and accepted by different parties, offering a better basis for agreement and cooperation concerning policy options.  

Table 1: Use of actor analysis for different policy styles

In the research of Lei (2009) an overview of the qualification of problems to which actor analysis methods are applied to by authors are given. The problems have been characterized in three categories:

- **Deadlock situation**: in this problem situation actors find themselves locked in a situation that is no longer progressing. The actors are now looking for a way out (e.g. Timmermans and Beroggi 2000; Noakes et al. 2003 in Lei, 2009). An actor analysis might provide information that can be used to help the debate progress (Timmermans and Beroggi 2000 in Lei, 2009) or explain a situation like it is (Noakes et al. 2003 in Lei, 2009).
- **Conflict situation**: in this problem situation the actors are opposed to each other and want to win the fight instead of coming to a shared solution (e.g. Bennett and Dando 1979; Klein 2000 in Lei, 2009). The purpose of an actor analysis method application is then to provide strategic

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Note that this classification is not exclusive; for example, a conflict situation might also be in a deadlock. In these situations we have focused on the predominant situational characteristics as stated by the authors of the papers or as interpreted from the text (Lei, 2009:41)
advice to the parties (Klein 2000 in Lei, 2009) or provide an explanation for the situation (Bennett and Dando 1979 in Lei, 2009).

- **Actors willing to negotiate**: in this problem situation the actors involved are aware of the situation and willing to negotiate. The purpose of using an actor analysis method is to get actors to reach some kind of resolution (e.g. Bryant 2002 in Lei, 2009) or insight into possible outcomes (Hermans and Bots 2002 in Lei, 2009).

In this research the focus lies on the practical use of an actor analysis for Grontmij to use it in their projects. As indicated above an actor analysis can be used for multiple purposes. It is therefore important for Grontmij to identify the purpose an actor analysis is used for. This can be different per project. More about the perspectives of Grontmij on the use of an actor analysis is discussed in chapter 4.

### 3.4 Characterisation actor analysis methods:

As stated earlier there are different purposes for which an actor analysis can be used. For these different purposes, different actor analysis methods have been developed. Each actor analysis method provides different insights and is used in different problem situations. Therefore it is useful to create a classification of the different actor analysis methods to get a clear overview of the use of actor analysis methods. In this subchapter different classifications from theory are discussed. The final actor analysis classification of this research is discussed in chapter 5.2.

There are different kinds of classifications in actor analysis methods defined. According to Lei (2009) a distinction is made into two different kinds of actor analysis methods:

- **Actor analysis methods that allow an analyst to model decision-making** (choices or resolutions actors will or can take), which are called methods of multi-actor decision-making (Lei, 2009).
- **Actor analysis methods that study the relationships or associations between actors**, this method is called structural actor analysis methods (Lei, 2009).

The distinction of actor analysis methods according to Lei (2009) focuses on what is modelled by the methods. Figure 3 provides the complete overview of types of actor analysis methods. Methods of multi-actor decision-making are subdivided into top-down or bottom-up methods. A bottom-up method is chosen when multiple individual decisions lead to a collective system outcome. The collective outcome is the result of individual decision makers assumed to be acting in pursuit of their own goals (Lei, 2009 p.30). Top-down methods model the collective decision process (Lei, 2009 p.32). The structural actor analysis methods are subdivided into methods that focus on the actors, and into methods that focus on the relation **between** actors.
A different characterisation of actor analysis methods is provided in the research of Hermans & Thissen (2008). In this research an overview of the different actor analysis methods is given with a classification of the characteristics of the methods. Hermans & Thissen (2008) characterizes an actor analysis method along four dimensions, namely networks, perceptions, values and resources. In their research the characterization of actor analysis methods is based on a classification focus (dimensions) and an assessment of analytical richness (figure 4). The focus of their characterisation lies on the analytical characteristics of actor analysis methods, summarizing specificity, logical interconnectedness and scope (Hermans & Thissen, 2008). A graphical overview of this characterisation is provided in figure 4.
It is important to create a classification of actor analysis methods to provide clear insights into the different methods, but it is also helpful for the selection of an actor analysis method. The two classifications of actor analysis methods have different focuses on the use of the analysis method. For this research the focus lies on the practical use of actor analysis methods. Therefore the proposed characterisation of Hermans & Thissen (2008) is most appropriate as a starting point for this research. This classification also provides insights into the use and quality of the analysis methods.

It is also helpful for a company to have an overview of the purpose of an actor analysis. This distinction is given in the overview of Lei (2009). Therefore this classification will also be helpful for this research. The classification that this research will provide will consist of the practical insights of the use of an actor analysis and the purpose of the analysis method. The final classification of actor analysis methods will be discussed in chapter 5.2.

3.5 Requirements actor analysis from theory:

An actor analysis method focuses on the analysis of multiple actors (Lei, 2009). According to Hermans & Thissen (2008) actor analysis can provide insights into four basic dimensions:

- Networks; how the network of actors is structured.
- Perceptions of actors; the image that actors have of the world around them.
- Values of actors; provide the directions in which actors would like to move (internal motivations of actors like norms, interests and purposes)
- Resources; the practical means or instruments that actors “normally” have to realize their objectives. The things over which the actors have control and interest (Coleman, 1990, 28 in Hermans & Thissen, 2008).

Actor analysis should focus on the actors and their interactions in public policy processes (Hermans, 2005). In the research of Hermans & Thissen (2008) they defined that “the analysis should be analytically sound and produce trustworthy and valid insights, and is intended as a tool to support experts in their ongoing policy analysis activities”. They defined five requirements which an actor analysis should meet:

1. Provide (comparative) insight into the characteristics of multiple actors involved;
2. Focus on one or more dimensions of multi-actor policy processes (networks, values, perceptions, resources);
3. Describe specific analysis activities, meaning that methods or past applications are described in sufficient detail to allow one to reconstruct their use;
4. Have proven use in practice for analyzing the role of actors in real world policy making;
5. Have been subjected to scientific scrutiny, illustrated by scientific peer reviewed publications of methods development and/or use.

Because of the focus on the practical use of an actor analysis in this research, requirements 1, 2 and 4 are important. An actor analysis should provide insights into the characteristics of multiple actors involved, but should also have proven its use in practice. Some other requirements on the practical use of an actor analysis could be that the analysis should not be too complicated and time consuming. These requirements are determined by interviews with Grontmij personnel, and are discussed in chapter 4.
3.6 Problems actor analysis:

Although an actor analysis can provide in-depth insights into actors involved in the decision making process the methods are not often used in practice. This is due to the fact that there are some problems concerning actor analysis. These problems involve the complexity of an actor analysis, the availability of many different actor analysis methods and the lack of general follow-up actions after an actor analysis, which will be discussed in more detail.

3.6.1 Actor analysis complexity:

One of the most important problems with an actor analysis is discussed in a research of Jepsen & Eskerod (2009). In this research four project managers performed an actor analysis. Concluding findings of this research are that the project managers discovered that it is very difficult to perform the steps of an actor analysis in practice (Jepsen & Eskerod, 2009). They didn't have the expertise to identify all the relevant actors and to characterize these (Jepsen & Eskerod, 2009). The guidelines of steps lack clarity regarding (a) how to identify stakeholders and determine their importance and (b) how to reveal stakeholders (Jepsen & Eskerod, 2009 p.1). Therefore one of the most important challenges of an actor analysis is to make it more practical and easier to use.

Another problem is that there isn’t much literature available which deals with the practical use of an actor analysis. Many literatures consist of different actor analysis methods or stakeholder analysis methods and how to perform this analysis in steps. The literature mainly consists of theoretical concepts, but the link with how an organization can perform an actor analysis isn’t made. Therefore this research consists of trying to close the gap between theory and practice for an actor analysis.

3.6.2 Amount of actor analysis methods:

As earlier stated there are lots of different actor analysis methods available. All these different actor analysis methods provide different insights into actors. This makes it difficult for organizations to select the correct actor analysis method for their problem. It is especially the case when an organization doesn’t have the right expertise to perform an actor analysis.

The different actor analysis methods come from different research domains like Game Theory, Social Network Analysis, Policy Analysis and Conflict Analysis (Lei, 2009). Each of these domains are involved with actors and therefore created an analysis method to map all the relevant actors.

The problem is that there are many different actor analysis methods (like stakeholder analysis, hyper games, Q-method, Drama theory, argumentative analysis etc (Hermans & Thissen, 2008) available which makes it difficult to select the right actor analysis method for the problem situation. The selection process for the right actor analysis method is time consuming for an organization, because they first have to dig into actor analysis theory. Also the methods are limited in their use, there is not one general actor analysis method available for all problems. The different methods give different insights into an actor’s characteristics, which makes it difficult for an organization to select the right analysis method.

3.6.3 Next Step after actor analysis:

Another problem of an actor analysis is that there are no general follow-up actions defined after performing an actor analysis. For the stakeholder analysis this has been worked out some more, but this hasn’t been the case for actor analysis. Like the stakeholder analysis it should be helpful to state some next possible steps of action to use the knowledge gained by an actor analysis.

Hermans (2005) also states in his research that the output of an actor analysis isn’t used that much in practice. In his research an actor analysis is performed for use of water experts. The findings of the analysis where not straightforward and required quite some effort on behalf of the water experts,
especially were the output required them to broaden the scope of their activities or to engage in a more participatory analysis process (Hermans, 2005 p.191). He concluded that results of the analysis weren’t used in practice. While the methods have become more sophisticated and varied over time, there is dissatisfaction among policy analysts about the role and the use of their work: “If policy analysis is not used, why do we produce so much of it?” (Shulock, 1999 in Hermans & Thissen, 2008 p.1).

3.6.4 Reflection on problems actor analysis

The complexity of the actor analysis methods is difficult to change during this research. It is a characteristic of the analysis method that is determined by the use of analysis method. Some analysis methods make use of mathematical or statistical models which are not popular to use in practice. By discussing the actor analysis methods and to provide insights into the analysis steps to perform, the barrier to use a method may be reduced. Therefore the use of selected actor analysis methods (chapter 3.7) will be analysed and explained to get analysts more familiar with the methods.

In practice the stakeholder analysis method is usually used when performing an actor analysis. The reason why stakeholder analysis is so popular in practice is because of its easy to use tables and matrixes. But there are some limitations of the stakeholder analysis. These limitations are discussed in chapter 3.7.1 which might convince an analyst to use a different kind of actor analysis method.

Because so many actor analysis methods are developed, only a small selection of methods is selected in this research. Different purposes of actor analysis can be determined for which a suitable actor analysis method can be selected. This provides Grontmij an overview of different actor analysis methods which can be used for different purposes. Hereby the barrier of the amount of different actor analysis methods should be lower.

A literature study is performed to identify possible follow-up actions after an actor analysis. These actions mainly consist of using the information gained from the actor analysis. The literature study performed to identify follow-up actions is provided in chapter 3.8.

3.7 Actor analysis methods:

Based on the theoretical criteria determined in chapter 3.5, actor analysis methods are selected to analyse in this research. There are many different actor analysis methods developed (around 18). The different actor analysis methods come from different research domains like Game Theory, Network Analysis, Policy Analysis and Conflict Analysis (Lei, 2009). Each of these domains are involved with actors and therefore created an analysis method to map all the relevant actors. The following actor analysis methods are analysed in this research:

- Stakeholder analysis
- (TUDelft) Public stakeholder analysis
- Q-Methodology
- Metagames/Conflict analysis
- Transactional analysis
- DANA
- Social Network analysis
- Actor analysis methods used currently by Grontmij (discussed in chapter 4.5)

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4 Stakeholder analysis is an actor analysis method. The term “stakeholder” in this actor analysis method name should not be confused with the definition of stakeholder in chapter 3.1. Stakeholder analysis is defined as a method to identify actors, and therefore is an actor analysis method.
These actor analysis methods are selected for this research because of the following reasons:

- They all provide insight into the characteristics of multiple actors involved. They all focus on one or more dimensions of multi-actor policy processes (networks, values, perceptions and resources). These are also important insights for Grontmij to determine.
- These methods have proven their use in practice. These methods have been applied to real life cases multiple times with success by researchers of the TUDelft.
- They have been analysed in the researches of Hermans (2005) and Lei (2009), which provide useful information for this research. The actor analysis methods have been selected from different categories of their classifications, so that different methods with different insights are analysed.
- The researcher is familiar with these actor analysis methods from the TUDelft.
Annex A and B provides a general overview of the methods selected with their analysis steps. Also example outputs are given and advantages/disadvantages are stated. These advantages/disadvantages are based on literature and personal experience. A summary of the different actor analysis methods with its functions are provided in the table below.

<table>
<thead>
<tr>
<th>Method</th>
<th>Purpose</th>
<th>Added Value</th>
<th>Model Presentation</th>
<th>Time</th>
<th>Information needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder analysis</td>
<td>Identify stakeholder environment, development of best policy option for all actors involved, increase cooperation</td>
<td>Quick scan of stakeholders involved with their interests</td>
<td>Tables and Matrixes</td>
<td>Method is not time consuming, can be performed in 1 day.</td>
<td>Stakeholders interests and influence, range of other issues on checklists</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Key-informants, Documents, interviews with stakeholders</td>
</tr>
<tr>
<td>(TU Delft) Public stakeholder analysis</td>
<td>Identify actors involved with their characteristics, to gain insight into multi-actor environment and stimulate cooperation</td>
<td>Easy analysis of actors involved with their characteristics and relations. Provides medium quality analysis.</td>
<td>Tables and Matrixes</td>
<td>Method requires some time and effort, but can be performed within 1 – 2 weeks (or less).</td>
<td>Actors interests and influence, range of other issues on checklists</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Key-informants, Documents, interviews with stakeholders</td>
</tr>
<tr>
<td>Q-methodology</td>
<td>Gain insight into shared beliefs of groups of actors</td>
<td>Identification of perceptions and beliefs of actor groups, not only actor representatives. Provides high-quality analysis.</td>
<td>Q Sorts: table with statements</td>
<td>Time consuming and intensive analysis, can be performed in 1 – 2 months.</td>
<td>Sample of statements representative for policy debate and opinion of actors on statements</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Policy documents, transcripts of meetings, news articles, surveys with actors for opinions on statements</td>
</tr>
<tr>
<td>Method</td>
<td>Purpose</td>
<td>Added Value</td>
<td>Model Presentation</td>
<td>Time</td>
<td>Information needed</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>--------------------------------</td>
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<td>-------------------------------------------</td>
</tr>
<tr>
<td>Metagames</td>
<td>Provide insights into actor’s positions in a conflict. Options of actors and scenarios are identified, to determine favourable outcome. May help collaboration</td>
<td>Gain insights into characteristics of actors and conflict between actors. May help in conflicts. Provides high quality analysis</td>
<td>Strategic maps and table of options</td>
<td>Method requires some time and effort, but can be performed within 1 – 3 weeks.</td>
<td>Actors options, and ordinal preferences for all feasible outcomes. Policy documents and interviews with actors or knowledgeable persons</td>
</tr>
<tr>
<td>DANA</td>
<td>Provides insights into perspectives and interests of actors in problem situation. Help actors understand each other.</td>
<td>Model and create insights into the perceived relations between actors and their characteristics. Provides high quality analysis.</td>
<td>(Causal Relation) models &amp; tables from DANA software</td>
<td>Method requires some time, effort and skills in cognitive mapping, but can be performed within 2 – 4 weeks.</td>
<td>Actors’ assumptions on facts, links and goals in relation to policy problem. Documents, Interviews or participatory working sessions.</td>
</tr>
<tr>
<td>Social Network analysis</td>
<td>Provide overview of the structure of relations in the actor network. Relations between actors and flow of resources can be determined.</td>
<td>Gain more insight into actor network, and relations between actors. Provides high quality analysis.</td>
<td>Tables and figures of structure network, sociograms, matrixes</td>
<td>Time consuming and intensive analysis, can be performed in 1 – 2 months.</td>
<td>Relational data: direction, frequency and intensity of relations between actors. Surveys interviews, historical records</td>
</tr>
</tbody>
</table>

*Table 2: Overview actor analysis methods with functions and purposes (based on Hermans & Thissen, 2008).*
3.7.1 Limitations Stakeholder analysis:

In this subchapter some more attention is spend on the use of the stakeholder analysis and its limitations. The stakeholder analysis needs some specific attention because the use of this analysis method is more popular than other actor analysis methods. This is due to its ability to accommodate gaps in input data, the fact that it does not require specific skills beyond a fair amount of common sense, and the fact that the presence of various loosely coupled items in checklists and tables allows analysts to selectively pick out those items that are most appropriate and easy to cover (Hermans & Thissen, 2008).

Although a stakeholder analysis can be considered as an actor analysis, there is some dissatisfaction from researchers about the use of a stakeholder analysis. A stakeholder analysis has a more practical approach, and is a more “quick and dirty” method. This makes the stakeholder analysis very useful for a first problem exploration (Enserink, 2010). In fact, the literature on stakeholder analysis acknowledges the analytical limitations stemming from “laundry lists” of concerns and issues (Mitroff, 1983, 46 in Hermans & Thissen, 2009 p.813) and “provisional” assessments of levels of influence, support or opposition” (Varvasovszky and Brugha, 2000, 342 in Hermans & Thissen, 2009 p.813).

The analytical core of the stakeholder analysis procedures is formed of different tables and “laundry lists” (Mitroff, 1983, p. 9, 46), which more or less float around and are not clearly connected to each other, to underlying theory or to real world observations (Hermans, 2005 p.25). The connection between these tables have to be made by the analyst, which raises the following questions: How do analysts derive the input for their tables? And how do they translate these tables into conclusions on stakeholder behaviour and promising stakeholder management strategies? There is no underlying theoretical framework to provide guidance, internal logic and consistency and to support “truth” claims for external validity (Hermans, 2005 p.25). The framework and its accompanying logic have to be developed by the analyst. This provides the analyst with room for flexibility, but it also requires more effort to be made to guarantee analytical soundness and to prevent personal bias (Hermans, 2005 p.25).

An actor analysis on the other hand provides better and more elaborate insights into the perspectives and values of actors. An actor analysis goes beyond an initial scan or exploration and a somewhat more sophisticated or focused actor analysis is required. These include methods that focus specifically on the structure of social networks, methods that map actor perceptions (Bots et al., 2000; in Enserink, 2010) and methods that analyze conflicts between actors. Therefore an actor analysis provides better knowledge about actors involved and their view points (Enserink, 2010). Also the analytical quality of an actor analysis increases because of its use of models. A balance between the easy to use stakeholder analysis and analytical quality of an actor analysis needs to be found.

Although the stakeholder analysis has its analytical limitations this actor analysis method is still selected in this research. The reason for this is that the stakeholder analysis is so widely used in practice, and may still be a good alternative for an analysis in some situations.

3.8 Follow-up steps actor analysis

One of the problems with actor analysis is that there are no defined steps to perform after the analysis. As with stakeholder analysis some strategies are identified that helps an organization to manage their stakeholders. Some similar strategies/actions are also useful to determine for an actor analysis. It is not possible to determine specific steps or actions, because there are many different problem situations and purposes for an actor analysis. But a general overview of follow-up strategies can be determined which provides the problem owner with new insights into actions that can be performed after an actor analysis.
This section provides an overview of possible follow-up steps which can be taken after an actor analysis. These steps use the information of an actor analysis which can be performed by the problem owner. The follow-up steps consist of three general categories:

- Participation strategies
- Strategies to strengthen position in network
- Conflict resolution strategies

3.8.1 Participation strategies:

A participation strategy is a strategy which an problem owner can use to get actors involved in the decision making process. The goal is to get actors to participate. The advantages of getting actors to participate is that it increases knowledge and creativity, lets actors put their issues on the table and feel more appreciated, actors get to know each other, and it stimulates cooperation. But to identify these actors an actor analysis is needed. Because of this the creation of participation can be seen as a possible follow-up action after actor analysis. In the book of HarmoniCOP (2005) a participation strategy is discussed.

To create a participation strategy, the following questions needs to be addressed (HarmoniCOP, 2005p. 14):

- Why should people participate – or what is expected from their participation?
- Who should participate?
- When should they be involved and to what extent?
- What kind of issues should be tackled – what will be the scope?
- What type of project organization is needed and who will facilitate the process?
- Which methods and tools will be used?
- What resources are needed?

These questions provide a problem owner with insights into the participation process. It is important for a problem owner to think about this in an early stage of the participation process, to get a clear picture of the purpose of the process. To promote participation by the actors, the participation strategy should be discussed with them and should take their concerns and interests into account. Failing to do so may make participation unattractive and decreases the legitimacy of the process (HarmoniCOP, 2005p. 14).

From the point of view of the problem owner, several reasons can be given for organising participatory processes (HarmoniCOP, 2005p. 14):

- Can they contribute to decision-making?
- Participation to improve the quality of plans and projects
- Are they needed for implementation? Can they block decision-making or implementation?
- Participation to improve implementation of plans and Prevent litigation and (costly) delays
- Are they affected by or Do they have an interest in the issues at stake?
- Participation for “moral” reasons, to complement representative democracy and protect individual rights
- Is participation legally Required?
- Participation to meet legal requirements
- Is there a gap between the citizens and politicians?
- Participation to promote active citizenship

Figure 5: Overview of possible reasons for participation process (HarmoniCOP, 2005)

When selecting the actors to involve in a participation process it is important to ask the question “Who should participate in the process?” Some actors will be more needed in the participation process than other actors (who might have less power or interest). Other actors might not be critical actors, but do have information which might be useful during the participation process. Some factors that needs to be taken into account for a participation process (HarmoniCOP, 2005):
Maximum representation of diversity
The willingness of the stakeholder to cooperate
The total number of participants: the smaller the group, the bigger the change for learning to occur (and the cheaper the process).
There has to be a balance between these factors. So try not to invite too many actors, but also try to be diverse in the actors to be invited. It is also not certain that the actors who will be invited, actually participate. Sometimes compensation (travel costs or lunch) gives the actors a stimulus to participate.

Not every problem requires active involvement of stakeholders at all stages. Whether, and how, stakeholders are involved depends on the resources of the initiator and the other stakeholders (HarmoniCOP, 2005). An example can be that in the beginning phase, many actors are invited to get all the issues and concerns on the table, but in a later phase only the actors with decision power will be invited to participate. The problem owner has to determine when he finds it interesting and useful to invite an actor in a certain phase.

It is also important during the participation process to have a clear process scope. A scope means the subjects and problems taken into consideration and which are left out. With a scope the participation of an actor is also determined. If the subject or problem is not interesting for an actor, he will not participate. The scope is initially determined by the initiator, but it is always good to organise a discussion with the other actors to check whether the scope is acceptable for them and adjust it if necessary (HarmoniCOP, 2005). This will help to make the process attractive for the other actors and to ensure their participation. There are different methods and tools available which support the participation and interaction between actors. An overview of these tools is provides in Annex F.

3.8.2 Strategies to strengthen network position:

From the theory of stakeholder analysis attention is paid to the understanding and managing of stakeholders. Stakeholders can possess the power to influence the decision making process, and will do this when possible and necessary. They make use of strategies to influence the decision making process and to strengthen their position in the network. It is important for the problem owner to identify these stakeholder strategies, and to respond to them. The problem owner can also use these strategies for himself. This will reduce the project risk, strengthen their position in the network and increases the chance of success of a project.

In the research of Frooman (1999) stakeholder influence strategies are identified and discussed. These strategies of stakeholders are based on the resource dependence theory. Frooman argues that resource dependence theory gives a useful account of stakeholder power, although not in the form of stakeholder power, but, rather, as a structural component (Frooman, 1999). The research is focused on firms, but can be used to discuss strategies of stakeholders on (public) organizations. Annex G gives an overview of the influence strategies discussed by Frooman (1999) (for example resource control strategies).

In cases where the interests diverge and the firm is unwilling to change its behaviour to accommodate a stakeholder, power is likely to decide the outcome (Pfeffer, 1981, 1992, 1997 in Frooman, 1999p. 195). The power of a stakeholder is depending on its resources, and how dependent organizations are of its resources. Resource is defined as essentially anything an actor perceives as useful, whereas dependence is a state in which one actor relies on the actions of another to achieve particular outcomes (Emerson, 1962; Pfeffer, 1992 in Frooman, 1999p. 195).
In the research of de Bruin and ten Heuvelhof (2008) strategic behaviour of actors is discussed. They look at the point of view of actors and identify how the actors reach their goals. Every actor has its own purpose and goals in a decision making process, and they will use strategic behaviour to reach those. According to de Bruin and ten Heuvelhof (2008) strategic behaviour is when ‘an actor’s behaviour is not determined by his opinion, but is aimed at consolidating his power position in the network’ (de Bruin & ten Heuvelhof, 2008p. 38). Actors behave strategically in multiple ways (de Bruin & ten Heuvelhof, 2008):

- They don’t give their interests away because this undermines their negotiation position.
- They hide their resources;
- Or will they use the resources or not?

Annex G provides an overview of the stakeholder strategies discussed by de Bruin and ten Heuvelhof (2008) (for example start a decision making process, threatening of change the pattern of interdependencies).

In projects it is also important for a problem owner to look at strategies of stakeholders. By anticipating what kind of strategies a stakeholder will use, they are able to react on these strategies. An example of stakeholder resources in projects are: financial resources like money, if the stakeholder possesses land, the stakeholder makes use of laws and regulation or the stakeholder possesses important knowledge and information. These are all resources which are very important for a project. Stakeholders which possess one of these resources will have more influence on the decision making process, and therefore possess power.

In the research of Aaltonen & Sivonen (2009) response strategies to stakeholder pressure are identified. Response strategies are strategies which an organization takes in response to pressure of stakeholders. These response strategies can be different per actor. An overview of the response strategies discussed by Aaltonen & Sivonen (2009) is given in Annex G (for example adaption strategy, compromising strategy or dismissal strategy). By executing these strategies Grontmij can try to bring the project to a success and strengthen their position in the actor network.

Other strategies have been defined by de Bruin and ten Heuvelhof (2008) from which actors make use of during a decision making process. These strategies are not multi-purpose, but more command and control strategies. Command and control strategies are strategies where actors use their power to intervene in a negotiation. As actors use these strategies, the problem owner can also use these strategies to influence the process. Annex G provides an overview of these command and control strategies discussed by Bruin and ten Heuvelhof (2008). In many the problem owner is initiator of the project, or the executor. In both situations they need to steer the decision making process where needed. To create awareness of the strategies available to them, but also to others, the decision making process can be steered in a better way. In this way the actions of actors can be anticipated, and the problem owner has insights how to influence the decision making process. Therefore by applying these strategies the cooperation between actors can be stimulated and the problem owner strengthens their position in the actor network.

In a network, decisions are made in a process of interaction. This implies that an actor’s attention shifts towards the question of how the process of interaction can be influenced. Who might contribute to serving the interests of this actor? How to commit them to these interests? The focus is therefore not primarily on the content of the problem, but on the actors whose support is needed (de Bruin & ten Heuvelhof, 2008p. 36). Therefore relationships are very important for actors because they:

- Facilitate as a good information source: the information can be about the problem, but also about the actors. This can strengthen his bargaining position. It also gives him a better view on the success of his decision making, and when to take it.
- Strengthen his power position in the network. Gives a party room to manoeuvre because he has multiple alternatives. The actor is also more attractive because he is a doorway to other actors.
3.8.3 Conflict resolution strategies:

Multi-party negotiations in the public arena, within countries or between countries, often fail because the wrong parties are at the table, the process of negotiation is poorly designed and managed, or agreements do not incorporate an adaptive approach to resource management that can respond to changing conditions and scientific uncertainty (Dore et al, 2010 p.59).

A way to improve the decision making process is to make it a multi-issue decision making process (de Bruin & ten Heuvelhof, 2008). A major risk of decision making in a network is that it remains limited to one subject: one-issue decision making. If different actors take different views about this issue, there is the risk of a deadlock (de Bruin & ten Heuvelhof, 2008p. 49). A multi-issue decision making process creates the possibility for actors to put their issues on the table. This implies that (de Bruin & ten Heuvelhof, 2008p. 50):

- There are several issues on the agenda, broaden the agenda
- There are sufficient interesting issues for each actor on the agenda.
- This makes it attractive for these actors to participate in the decision making process.
- In this process there is one general problem, but it is extended with other issues so that actors are more willing to cooperate with the initial problem. It can be the case that issues are on the agenda that have nothing to do with the subject, but are important to the other actors. In this way a compromise can be reached.

A similar strategy is discussed in the book of Dore et al (2010). They introduce the consensus-building approach, which is an approach to negotiation that empowers those most concerned about equity while simultaneously responding to the most politically powerful parties concerns about preserving their prerogatives. This is accomplished by putting the interests and issues of all the parties on the agenda, and letting the parties sign a commitment that the actors accepts responsibility for doing everything it can to meet the interests of all the parties involved (Dore et al, 2010).

Annex H provides the complete review of the multi-issue game discussed by de Bruin and ten Heuvelhof (2008) or the consensus-building approach discussed by Dore et al (2010).

3.9 Conclusion actor analysis:

This chapter provides an overview of the actor analysis theory and some different actor analysis methods selected in this research. It provides an answer to sub questions 1 and 2 of the research. These questions will be briefly answered.

1) What is an actor analysis and which methods are available?

An actor is defined as “persons, groups, organizations...that are capable of making decisions and acting in a more or less coordinated way”(Burns et al., 1985; Hermans, 2005). In other words: actors are those parties that have certain interest in the system and/or that have some ability to influence that system, either directly or indirectly (Enserink et al, 2010). In this research the term actor should not be confused with the term stakeholder. A stakeholder is used to refer to those groups that have an interest, or stake, in decision making processes, but that have relatively little means to influence decision making or the system (Enserink et al, 2010).

In this research an actor analysis method is defined as “a method that provides insights into the characteristics and perspectives of one or multiple actors involved in a decision making process”. It is important when analyzing an actor to find out the characteristics of an actor in general, but also its perspectives on the problem. This provides a better understanding of an actor involved.
Based on the criteria from theory discussed in chapter 3.5 actor analysis methods have been selected for this research. The actor analysis methods have been selected on purpose and its use in practice. It is important for this research that the actor analysis methods have been applied on cases to determine their functioning in practice. The following actor analysis methods have been selected:

- Stakeholder analysis
- (TUDelft) Public stakeholder analysis
- Q-Methodology
- Metagames/Conflict analysis
- Transactional analysis
- DANA
- Social Network analysis

2) What are the current problems with the use of an actor analysis in practice and how to deal with these?

Although an actor analysis can provide in-depth insights into actors involved in the decision making process, the methods are not often used in practice. This is due to the fact that there are some problems involved with an actor analysis. These problems are:

- The complexity of an actor analysis; the actor analysis methods that have been developed consist of mathematical models and some required skills to perform the analysis. This makes it difficult to perform an actor analysis by persons who don't have the required skills. The research provides an analysis about the methods which should make the actor analysis methods easier to understand.

- The availability of many different actor analysis methods; many different actor analysis methods have been developed for different purposes. Different research sectors have developed their own actor analysis method. The problem that this causes is that it becomes difficult for an organization or person to select the correct actor analysis method for the problem. Some research has to be performed to select the appropriate method, which is time consuming. This research provides a selection of actor analysis methods and how to select the most appropriate actor analysis method.

- The lack of general follow-up actions after an actor analysis; no clear possible follow up action have been determined to perform after an actor analysis. This can be helpful to make maximal use of the required information from the analysis. From a literature study perform in chapter 3.8 a start is made in identifying follow up actions. From this study the following follow-up actions are determined:
  - Participation strategies; strategies to increase the participation in projects.
  - Strategies to strengthen network position; strategies which an actor can use to increase their position in the actor network.
  - Conflict resolution strategies; strategies to solve conflicts between actors.

3.9.1 Chapter reflection on research:

This chapter provides insights into the theory of actor analysis. The literature review provides an explanation of actor analysis, an overview of the purposes of actor analysis, and different actor analysis methods. This chapter consists of the theoretical foundation of actor analysis, which is the starting point in this research. By first understanding what an actor analysis is and what different methods are available, its use in practice can be discussed. The practical insights on actor analysis will be discussed in chapter 4.

Table 3 provides an overview of the purpose of an actor analysis and which purposes the actor analysis methods have. These insights will serve as important aspects for the actor analysis framework.
Purpose actor analysis:

| Create understanding and knowledge about actors | X | X | X |
| Identify (relations in) the actor network | X | X | X |
| Mapping of conflicts and coalitions between actors | X | X | X |

Table 3: Overview purpose actor analysis combined with purpose actor analysis methods

Figure 6: Current phase in actor analysis research
4. Grontmij perspective actor analysis

In this chapter the company Grontmij is discussed with its perspectives on actor analysis. The structure of this chapter consists of first discussing the company Grontmij in short. Second the experience with an actor analysis at Grontmij is discussed, followed by the discussion of their purpose of executing an actor analysis. After that the conditions are determined for the practical use of an actor analysis. Next the actor analysis method that Grontmij sometimes uses in its projects is discussed. The chapter ends with a general conclusion which provides an answer on sub-question:

3. What experience does Grontmij have with actor analysis, and what is its purpose and conditions for using an actor analysis method?

4.1 Grontmij

Grontmij was founded in 1915 and has grown to a large international consultancy company. It is a multidisciplinary consultancy and engineering firm employing over 11000 professionals active in three business lines: Planning & Design, Transportation & Mobility, and Water & Energy. The goal of Grontmij is to be the best local service provider in the North-West Europe and provide added value throughout the entire process of consulting, design, engineering, contracting and managing multidisciplinary projects.

Grontmij has a decentralised organisation and an extensive network of approximately 300 offices in Belgium, Denmark, Germany, Ireland, The Netherlands, Poland, Sweden, France, United Kingdom etc. Grontmij also carries out work in Central and East Europe and on donor-financed projects all over the world.

4.2 Experience actor analysis Grontmij

One of the problems with actor analysis is that in practice people find it difficult to perform the analysis (Jepsen & Eskerod, 2009). The amount of different actor analysis methods makes it difficult to select a correct actor analysis method and the methods require some level of skills (Hermans, 2005). This is why actor analysis methods haven’t been used much in practice. It is therefore interesting to investigate the experience of Grontmij with actor analysis. Do they perform an actor analysis at Grontmij, and how do they do this? Are they familiar with the concept of actor analysis?

To gain knowledge of the experience of Grontmij with actor analysis eleven employees are interviewed. The selected employees all have some experience in performing an actor analysis or are involved in actor cooperation. From the interviews more insight is gained into their knowledge and awareness of actor analysis and if/how they perform an actor analyses. In annex C an overview is provided of the results from the interview.

It can be concluded that Grontmij is familiar with the term actor. The respondents all describe an actor as an important person or organization that can influence a project. ‘In my opinion actors are parties that are involved and have interests or influence in a project’ (Respondent 9). Most of the respondents are aware of the function of an actor analysis method, but not so familiar with different actor analysis methods. ‘An actor analysis is an analysis to gain knowledge of all the actors that are involved in a problem situation or project’ (Respondent 2). ‘I know that there are actor analysis methods available, it was also discussed during a course that I’ve followed, but I don’t know how they work in detail. For that I have to study the literature again’ (Respondent 6). One respondent showed me an analysis

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5 Source: www.grontmij.com
method he developed to identify actors. ‘I have created a systematic format for myself to perform an actor analysis’ (Respondent 11). This method showed similarities with stakeholder analysis.

Most of the respondents are aware of the importance of an actor analysis. They all addressed the fact that an actor analysis helps them in identifying problems and can have a positive influence on the cooperation between actors. ‘I think that an actor analysis method can increase the knowledge about different actors. This information can for instance improve the cooperation between actors’ (Respondent 7). Therefore they have been executing an actor analysis in projects, but this has not been done with an elaborate actor analysis method. They generally perform an actor scan, constructing the actor network from own and others experience. ‘Most often I perform an actor analysis by first exploring for myself the possible actors involved. I later verify this with colleagues’ (Respondent 2). ‘Generally I identify actors based on my own experience. As time goes by you learn how the actor network looks like’ (Respondent 7).

Some respondents have referred to an actor analysis method discussed in the course ‘process management’ given by Grontmij. In some cases they use this actor analysis method to structure the network and identify most relevant actors. ‘I have followed a course process management, in which an actor analysis was discussed’ (Respondent 3). ‘The actor analysis methods I’ve learned from the course always looked promising, but in the end it’s more easy to perform an analysis based on own experience’ (Respondent 5). ‘At Grontmij there are some courses where an actor analysis method is discussed’ (Respondent 9). This actor analysis method will be discussed in chapter 4.5.

Textbox:
“An example of a project for which an actor analysis is performed was a project in Romania. In this project my role was designing a plan for River Basin Management, for which I was studying the institutional setting (how Governments are working together). During this project I used an actor analysis to identify the different actors involved in the project. The goal of the analysis was to identify the actors, but also to gain insights and inform people how to deal and approach these different actors” (Respondent 3).

Grontmij uses the actor analysis in multiple situations, which are:
- Grontmij executes a project for a problem owner (Respondent 3)
- Grontmij is project initiator (Respondent 10)
- The creation of an offer for a assignment (Respondent 8)
- Management of the process during a project (Respondent 11)
- Market exploration (Respondent 2)

From these situations it can also be concluded that Grontmij has different roles during a project. These roles consist of being the project initiator (leading the project) or being the project executor for a client.

From the interviews different project/process types are identified. A difference can be identified into policy development projects and area development projects. In policy development projects actors which are involved are mostly governmental parties. In area development projects actors like companies, interest groups and persons are often involved (Respondent 10).

4.3 Purpose actor analysis for Grontmij

As discussed in chapter 3.3 an actor analysis can be used for multiple purposes. As a technical consultancy company Grontmij focuses on problems in society related to the different sectors discussed in chapter 4.1. Especially because Grontmij is active with problems in society, many parties are involved in the decision making process.

It is for Grontmij important to get an overview of the involved actors and their perspectives. The actors can have influence on the success of a project, in a positive or negative way. ‘I notice in my work that involving actors in a project becomes more important’ ‘The results of an actor analysis can help the project further’ (Respondent 3).
It is important when performing an actor analysis that there is a clear purpose of the analysis. By interviewing employees insight is gained into the purposes of Grontmij when using an actor analysis. The different purposes mentioned by the respondents are stated in the tables in annex C.

From the interviews some general purposes are determined for which Grontmij uses an actor analysis. ‘In some situations I perform an actor analysis to gain knowledge on what the perspective of an organization on a project is’ (Respondent 2). ‘The purpose for which I perform an analysis is in most cases to identify risks involving actors’ (Respondent 9). ‘I try to map the actors. After that I can determine how to approach actors or how to situate myself within the actor network’ (Respondent 6). ‘The knowledge provided from an actor analysis can be useful to share with other colleagues of Grontmij, so that everyone has information about the actors’ (Respondent 10).

The general purpose of performing an actor analysis by Grontmij is:
- To identify all relevant parties and gain insight into their perspectives and values.
- To identify opportunities for Grontmij (or other organizations) within the actor network
- To identify and anticipate risks involving actors
- To increase understanding and cooperation of actors in actor network

<table>
<thead>
<tr>
<th></th>
<th>Identify Relevant Actors</th>
<th>Identify Opportunities</th>
<th>Identify Risk Actors</th>
<th>Increase Cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent 1</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent 2</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Respondent 3</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Respondent 4</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
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<td>Respondent 5</td>
<td>X</td>
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<tr>
<td>Respondent 6</td>
<td>X</td>
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<tr>
<td>Respondent 7</td>
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<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Respondent 8</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Respondent 9</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondent 10</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Respondent 11</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Respondent 12</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Overview purposes identified by respondents

4.4 Conditions actor analysis Grontmij

To determine which actor analysis methods are interesting for Grontmij to use in the future, some conditions have to be determined. These conditions are determined from interviews with Grontmij employees. They are eventually the ones who will perform an actor analysis during a project. As discussed in chapter 3.5 Hermans & Thissen (2008) have determined some conditions from theory for an actor analysis. The selected conditions from theory combined with the conditions from Grontmij will indicate which conditions an actor analysis should meet. An actor analysis will then be analytically sound, provide a quality research, and be also executable in practice by organizations.

Important is that an actor analysis should be easy to use in practice. ‘Keep it simple’ (Respondent 6). ‘This can be accomplished by using tables and matrixes’ (Respondent 9). What the respondents also find important when performing an actor analysis is that knowledge is gained from the analysis about actors. Characteristics like resources, perspectives and power are important. ‘You should be able to identify the relevant actors who have influence on the project’ (Respondent 3).

From interviews the following important conditions are determined:
- The analysis should not be too time consuming
- The analysis should be easy to use
- The analysis method should provide insights into relevant actors with their interests, stakes, resources and perspectives.
In different project/problem situations different actor analysis methods should be available and the required end results from the analysis should determine the actor analysis method.

As mentioned multiple times by the respondents the amount of time you spend on an analysis is depending on the project. ’Depending on the project or problem you determine the amount of time you spend on an actor analysis’ (Respondent 2). ’With small projects it is not essential to perform an elaborate analysis, but it is with larger complex projects’ (Respondent 8). ’It depends on the phase you are in with a project, how much time you spend on the analysis. In the beginning you spend some more time because you have to create the complete actor network. Later in the project you keep performing the analysis, but then only to determine changes in the actor network’ (Respondent 9).

Also cost is an important related factor in determining an actor analysis method. ’The use and time spend on an actor analysis depends very much on the budget and requirements of the problem owner’ (Respondent 4). ’You should have to pay attention on the costs you make. In small projects it is not relevant to perform an elaborate actor analysis due to the costs. Like when developing an offer, a quick scan is then enough. Also interviews are time consuming, and therefore costly’ (Respondent 9). But what they do mention is that they can offer an actor analysis as a service to problem owners. ’I find it useful to have some kind of overview with arguments of actor analysis methods when to use it, this can come in hand when trying to sell the actor analysis method to the customer’.

With the conditions determined by Grontmij the selection of actor analysis methods can be continued. First actor analysis methods where selected on insights, multi-actor policy processes and being applied in practice (chapter 3.7). Now that conditions from practice are determined, the actor analysis methods will be selected on their practical use. The conditions of Grontmij also provide insights into how the framework should work. The selection of actor analysis methods will be discussed in chapter 5.4.

4.5 Actor analysis method used by Grontmij

As learned from the interviews, Grontmij also has several methods available to identify actors. During the interviews four types of actor analysis methods Grontmij uses have been identified:

- Actor analysis method discussed in the course ‘process management’ given by Grontmij
- Actor analysis discussed in a course given by E. de Bruin (2008).
- Actor analysis method used in an example project ‘Technical assistance for the development of a programme of measures for compliance with the environmental objectives for the threatened water bodies inside the Somes-Tisa Hydrographic Area’ (Witteveen+Bos, 2007)
- Actor analysis method developed by process manager F. Kwadijk

It is noticed that all of these actor analysis methods look similar and can be compared to stakeholder analysis. Another interesting point is that there is no general actor analysis method existing at Grontmij. All these actor analysis methods have been developed by different employees which all use their own method. The distribution of these methods does not take place (only in the course). It could therefore be possible that there are even more actor analysis methods available within Grontmij that have not been identified.

The use of the actor analysis by Grontmij is mainly to gain insights into the actor network by performing a quick scan. By means of tables and figures an overview is created of the most important actors involved. These actors are then analyzed. Grontmij usually performs an actor analysis in the beginning of the project, to gain knowledge of the actor network. They also perform the analysis during the project, to analyse shifts in the network.

As earlier mentioned the actor analysis methods used by Grontmij can be compared to a stakeholder analysis. All the methods show similar tables and steps, so can therefore be seen as one method. In the project Witteveen & Bos (2007) an overview of the actor analysis steps is given. These steps are an example of actor analysis steps performed by Grontmij:

- Longlist; the first step in the stakeholder analysis is to develop a longlist of stakeholders.
- Groups of stakeholders; the second step is done using figure 18 in annex D. For each of the
stakeholders the level of their involvement in the project is determined.

- Co-operators (= participation): This is the groups that are involved in the decision making, and are involved in management (de Bruin, 2008).
- Co-thinkers (= consultation): a group that is also involved in the project but merely expresses opinions and gives ideas (Witteveen+Bos, 2007).
- Co-knowers (= pro-active information): this group consists of the actors that should be informed about the project but are not directly involved. They might be affected by the project or possess relevant information (Witteveen+Bos, 2007).
- Decision makers: the group of actors that have decision power and should take decisions about the project.

Planning stakeholder involvement: for each of the groups determined a strategy of involvement is developed. This strategy describes the practical steps to be taken considering the involvement of each group and describes the following practical aspects:

- goals;
- constrains;
- time planning;
- expected effect.

Execute: execute the plan of action.

Evaluate: discuss the results with the problem owner.

To provide some insights into the methods Grontmij uses to identify actors some examples of tables and matrices are provided in Annex D. The tools of the different methods are shown, but are all used in a similar way.

4.6 Conclusion Grontmij perspective

After interviewing Grontmij personnel and people with practical work experience more insight is created into the practical use of an actor analysis. Due to this an answer can be given to sub-question:

3) What experience does Grontmij have with actor analysis, and what is its purpose and conditions for using an actor analysis method?

Grontmij is an international technical consultancy company. Most of the interviewed employees at Grontmij are familiar with the terms ‘actor’ or ‘stakeholder’ and describe it in a correct way. They also perform an actor analysis during their projects, but this is mainly a quick scan based on own insights and experience. Most of the respondents do not use a specific actor analysis method. However, some respondents mentioned to use an actor analysis learned from a Grontmij course ‘process management’, or use their own method. The actor analysis method used by Grontmij is discussed in chapter 4.5, and can be compared to a stakeholder analysis (Annex B).

The general purpose of performing an actor analysis by Grontmij is:

- To identify all relevant parties and gain insight into their perspectives and values.
- To identify opportunities for Grontmij (or other organizations) within the actor network
- To identify and anticipate risks involving actors
- To increase understanding and cooperation of actors in actor network

Given the fact that some of the respondents do not use specific actor analysis methods, they all see the relevance of the identification of relevant actors. By doing this they create more knowledge of the relevant actors, and anticipate possible risks. They also mentioned that it could be useful to have some models or steps created that can help them with the analysis.

From the interviews the following conditions could be determined:

- The analysis should not be too time consuming
- The analysis should be easy to use by the analyst.
- The analysis method should provide insights into relevant actors with their interests, stakes, resources and perspectives.
- In different project/problem situations different actor analysis methods should be available
- The required end results from the analysis should determine the actor analysis method.
4.6.1 Chapter reflection on research:

As chapter 3 discussed the actor analysis for a theoretical point of view, this chapter has discussed actor analysis from a practical point of view. This chapter provides an overview of the practical use of an actor analysis and what kind of method is being used in practice. To gain knowledge about the use of actor analysis in practice, the purpose, experience and actor analysis method of Grontmij is discussed in this chapter. This provides insights into practical requirements for the actor analysis framework, and understanding of problems with the actor analysis. Together with the requirements and insights gained from theory the actor analysis framework can now be constructed.

Table 5 provides an overview of the situations Grontmij uses an actor analysis in and what the purpose of the analysis is. These insights will serve as important aspects for the actor analysis framework.

<table>
<thead>
<tr>
<th>situations for actor analysis</th>
<th>Identify relevant actors</th>
<th>Identify opportunities</th>
<th>Identify risk actors</th>
<th>Increase cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grontmij executes a project for a problem owner</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Grontmij is project initiator</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>The creation of an offer for a assignment</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Management of the process during a project</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market exploration</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 5: Overview situations Grontmij uses actor analysis and for which purpose*

*Figure 7: Current phase in actor analysis research*
5. Actor analysis Framework

This chapter consists of the discussion of the actor analysis framework, and how this framework is constructed. The actor analysis framework is built on a combination of the theory discussed in chapter 3 and the practical views of Grontmij discussed in chapter 4. This chapter will provide an answer to the following research sub-question:

4) Can an actor analysis framework be designed that combines theoretical insights with practical needs?

First the purpose of the actor analysis framework is discussed, followed by the characterisation of actor analysis methods. Next the criteria for an actor analysis method are discussed, which is followed by the selection of most promising actor analysis methods. After that the follow-up steps after an actor analysis are determined. It is discussed what can be done with the gathered information from the actor analysis. Next the actor analysis framework is presented and discussed.

5.1 Purpose actor analysis framework.

The actor analysis framework should provide a clear overview of actor analysis methods available for certain problem situations. It should provide guidance for an analyst of Grontmij when selecting an actor analysis. Criteria and points which need to be taken into consideration when selecting an actor analysis method in a project are presented in the framework. By following the steps of the framework, the analyst identifies the most appropriate actor analysis method for its situation.

Besides the goal of providing a structural overview of steps and actor analysis methods for Grontmij, the framework also provides a connection between theory and practice. From theory different actor analysis methods have been developed, which have not often been used in practice. By taking criteria from practice and theory into consideration, the most appropriate actor analysis method is identified. Also the analyst at Grontmij becomes more aware of other actor analysis methods which are provided in the framework.

5.2 Characterisation actor analysis methods.

As earlier discussed in chapter 3.4 there are different characterisations developed for actor analysis methods. A characterisation of the actor analysis methods provides a clear overview of the differences between the methods. From the different characterisations discussed in chapter 3.4, and the purposes for Grontmij using actor analysis methods, a characterisation of actor analysis for this research is determined. This characterisation is shown in figure 8.
The characterisation of actor analysis methods in this research is based on their purpose and usability. This is based on the characterisations of Lei (2009) and Hermans (2005). For the purpose of an actor analysis a distinction can be made between:

- Methods that mainly analyse actor characteristics; with these methods insights into the actors with their perspectives and resources are given.
- Methods that analyse actor relations; with these methods insights are provided into the relationships between actors within a network.
- Methods that analyse conflict situations; with these methods the conflict between actors is analysed and a possible solution to this conflict is provided (sometimes this is not possible due to deadlocks).

Another characterisation is based on how the method is used. A method can be used by means of simple tables and matrices (checklists only) or by an analysis which makes use of models. This makes a difference in the usability of an actor analysis method. The checklist only methods are often more easy to use than the model analysis. It can be concluded from the characterisation figure that there are no checklist-only methods available for getting insights into relations or conflicts between actors. Analysis with models consists of actor analysis methods where (mathematical) models or tools are used during the analysis.
5.3 Criteria actor analysis

From the interviews with Grontmij personnel (chapter 4) and the literature study (chapter 3) criteria have been determined. These criteria are used to select the most promising actor analysis methods to be used in practice. In table 6 an overview of the criteria is provided.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Low</td>
<td>Not much time is needed to spend on the analysis (1 day)</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>The method takes some effort (1 week)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>The method is very time consuming (1 month)</td>
</tr>
<tr>
<td>Usability</td>
<td>Easy</td>
<td>The method can be easily learned, and no specific skills are needed (1 hour)</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>The method takes some effort and skills to learn (1 day)</td>
</tr>
<tr>
<td></td>
<td>Hard</td>
<td>The method is complex and requires specific skills of analyst to learn (1 week)</td>
</tr>
<tr>
<td>Analytical Quality</td>
<td>Low</td>
<td>The method provides low quality analysis (low scope, not specific, no logical interconnectness)</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>The method provides medium quality analysis (medium scope, specific, logical interconnectness)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>The method provides high quality analysis (large scope, most specific, logical interconnectness)</td>
</tr>
<tr>
<td>Method explanation</td>
<td>Poor</td>
<td>There is little information available about the method and its use (&lt;2 articles)</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>There is some information available about the method and its use (2-5 articles)</td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>There is much information available about the method and its use (&gt;5 articles)</td>
</tr>
<tr>
<td>Information needed</td>
<td>Low</td>
<td>The method requires low amount of data and information (literature)</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>The method requires medium amount of data and information (literature, interviews)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>The method requires high amount of data and information (literature, interviews, statistical data)</td>
</tr>
</tbody>
</table>

Table 6: Criteria selection actor analysis methods

From a practical point of view the most important criteria an analysis method should meet are that the method should be easy to use and not to be time consuming. The analyst should easily understand and be able to apply the analysis method. The criteria usability is expressed in time to get familiar with the analysis method (to learn how to use it). Examples from the interviews are that a method should possess easy to fill in tables and matrixes. Time has also its effects on costs. The more time consuming the actor analysis is, the more costly the analysis will be. Therefore time and costs are seen as one criterion, namely time. Also the information needed is an important criterion from practice. This is because of the fact that it is important in practice how an analyst can have access to data. In some cases the access to data is limited because of for example hierarchical reasons.

From a theoretical point of view the analysis method should provide a high quality analysis. The criteria analytical quality needs some explanation. The criteria consist of a score on three different subjects:

- **Scope;** is based on the idea that covering a larger part of the space that characterizes multi-actor processes is likely to result in increasing explanatory potential and decreases the risk that one overlooks crucial aspects. An indication of scope is obtained by assessing (values, resources, networks, perceptions) are covered by the concepts included in a method (Hermans & Thissen, 2008).

- **Specificity;** does a method uses specific rather than abstract concepts. If the method is more specific its concepts carry more detailed information, are easier to relate to empirical observation and require less interpretation by the analyst. The method leaves less room for implicit and potentially erroneous assumptions by the analyst (Hermans & Thissen, 2008).

- **Logical interconnectness;** can be related to the issue of falsifiability. If the logic through which a method reasons from basic concepts and propositions to conclusions is stronger and more forceful, there is less need for interpretation and assumptions by the analyst. These criteria can be measured in mathematical models, conceptual models or predefined structure, and checklist models (Hermans & Thissen, 2008).
The theory is less concerned with the usability and time consumption of an analysis method; it should provide analytically sound data/information. Input data for the method should consist of a high quality (gathered from literature study, interviews, cases, and internet). An actor analysis should be analytically sound and produce trustworthy and valid insights (Hermans, 2005p. 19).

5.4 Selection actor analysis methods

Now that the characterisation and criteria are determined for actor analysis methods, the most promising actor analysis methods can be selected. The selection of actor analysis methods consists of the actor analysis methods determined in chapter 3.7. These methods were selected based on the experience of the researcher and their use in TUDelft research. The remaining actor analysis methods will be assessed by the criteria mentioned in table 6 and will be used in the actor analysis framework.

<table>
<thead>
<tr>
<th>Method</th>
<th>Time</th>
<th>Usability</th>
<th>Analytical Quality</th>
<th>Method Explanation</th>
<th>Information needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder analysis</td>
<td>+</td>
<td>+</td>
<td>+/−</td>
<td>−</td>
<td>+/−</td>
</tr>
<tr>
<td>(TUDelft) Public stk</td>
<td>+</td>
<td>+</td>
<td>+/−</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>Q-Methodology</td>
<td>−</td>
<td>+</td>
<td>+</td>
<td>−</td>
<td>+/−</td>
</tr>
<tr>
<td>Metagames</td>
<td>+</td>
<td></td>
<td>+</td>
<td>−</td>
<td>+/−</td>
</tr>
<tr>
<td>Transactional ana.</td>
<td>−</td>
<td>+</td>
<td>+</td>
<td>−</td>
<td>+/−</td>
</tr>
<tr>
<td>DANA</td>
<td>+</td>
<td></td>
<td>+</td>
<td>−</td>
<td>+/−</td>
</tr>
<tr>
<td>Social network ana.</td>
<td>−</td>
<td>+</td>
<td>+</td>
<td>−</td>
<td>+/−</td>
</tr>
</tbody>
</table>

Table 7: Selection table actor analysis methods

In table 7 presented above an overview of the actor analysis methods with their score on the criteria is given. The methods are rated from the different perspectives of the criteria. Therefore for the criteria time, costs, usability and method explanation the focus lies on the practical use. For the criteria analytical quality and information needed the focus lies on the theoretical aspect.

All methods have some positive and negative scores on the criteria. The actor analysis method that is not selected for the framework is *transactional analysis*. This method is very time consuming and is difficult to use. This is because of the mathematical calculations and models. Also the analytical quality of the analysis is high but still slightly lower than some others (figure 7 p. 16). The abstract level of the models reduces their complexity, but this does not enable very detailed conclusions to be drawn (Hermans, 2005). Other methods are still chosen for the actor analysis framework, even though they have some negative points:

- Stakeholder analysis is chosen because of its popular use in practice. Even though the analytical quality is not high, it can provide a picture of the actor network in a short time.
- Q-methodology is chosen because of the insights it can provide into the perspectives of actors. Maybe the analysis takes a lot of time, but it can provide useful information about perspectives of individuals and groups. There are also some tools available on the internet which makes the use of the analysis method easier, and the method is gaining popularity rapidly in academics, for which it can easier spill-over to practice.
- Social network analysis scores negative according to the selection table but still the method is chosen. The method is not very easy to use (also because of the need for data), but some basic principles of the method can be used for an analysis. The strong point of social network analysis is that it provides a clear picture of the actor network and relations between actors. When such insights are needed, the social network analysis is the most appropriate method to use.

Annex A provides an overview of the different actor analysis methods with their characteristics.
5.5 Overview actor analysis framework

This section discusses the actor analysis framework developed in this research. As earlier discussed the actor analysis framework should provide a clear overview of actor analysis methods available for certain problem situations. The framework also provides a connection between theory and practice.

First the criteria in the actor analysis framework are determined. The criteria indicate points of attention and selection criteria for actor analysis methods. The criteria consist of a selection from the criteria discussed in chapter 5.3, the interviews with Grontmij personnel (chapter 4) and literature review (chapter 3). Annex E provides an overview of the criteria for the actor analysis framework. From the criteria two categories of criteria can be distinguished:

- **Direct criteria**: criteria which directly influence the choice of an actor analysis method (access to information, information needed, purpose, project phase, costs and time).
- **Indirect criteria**: criteria which need to be taken into consideration, but do not directly and unambiguously influence the choice of actor analysis method (type of project, role of Grontmij, type of actors). It is important that an analyst gets a clear idea of the criteria, because it does relate to the amount of information, time and costs can be spend on the project.

The criteria are grouped into different types of criteria. These group types consist of:

- **Practical**: the criteria is related to the requirements from practical point of view.
- **Method**: the criteria is related to the requirements from a theoretical point of view.
- **Additional**: the criteria is related to additional requirements from the framework.

Now that the criteria are determined the actor analysis framework can be constructed. The framework consists of a flowchart type of diagram. This type of diagram is chosen because it can indicate the decisions an analyst needs to make when selecting an actor analysis method. Figure 9 and 10 provides an overview of the actor analysis framework.

---

**Step 1**

- **What type of project/proces are you involved in?**
  - Policy Development Project
  - Area Development Project

- **What is the role of Grontmij in this project/proces?**
  - Project Initiator
  - Project Executor

- **What are the types of actors that are involved in the project/proces?**
  - Legally authorized actors
  - Organizations
  - Public organized groups
  - Unorganized groups

*Figure 9: Actor analysis framework step 1.*
Figure 10: Actor analysis framework Step 2

T.P. de Booij
One for All, All for One
The actor analysis framework is divided into two steps:

**Step 1:**
First the analyst needs to think about some questions determined from the indirect criteria. As earlier mentioned the analyst needs to think about these criteria, because it makes him aware of the project situation. Ask questions like “What do I want with the information?” “What do I want to analyse?” “What is my role in the project?” These criteria can also affect time (costs). For example when Grontmij performs an analysis for a problem owner, a different budget is available then when Grontmij is project initiator.

Following from these criteria an analyst needs to think about what kind of actors are involved in the project. This has also influence on the access to information, as some actors can be approached directly (much information can be gathered), and others not (less information can be gathered).

**Step 2:**
After the analyst has thought about these questions the next step in the framework can be executed. The framework begins with the determination of the project phase. In the exploration phase it is usually the case that an actor analysis is performed as a quick scan to gain insights into the actor network. Usually there is not much time available to perform the analysis (like when making an offer). The Grontmij stakeholder analysis will be most appropriate in this situation. If there is time available, the analyst can choose to perform a more elaborate actor analysis. In the design phase the project is being executed and a project plan/design needs to be developed. Therefore collaboration with actors is needed, in which different insights (more specific and elaborate) are needed from actors than in the exploration phase. A more elaborate actor analysis method is needed in this phase.

Now the selection of an actor analysis takes place. For this the purpose of an actor analysis needs to be clear. Actor analysis methods are used for different purposes (chapter 3.3). It is therefore important for the selection of a method to have a clear idea of the purpose of the analysis. The purpose can be to gain insights into the actor perceptions, actor network, and conflict situations between actors or try to get an overall overview of the actor network.

Next the actor analysis method is selected from the framework. As an example, when you are in the design phase, in an Area Development project, Grontmij is the project executor, only legal authorised actors and organizations are involved in the project which can be approached directly, the purpose is to explore the overall actor network, medium time and costs are available, and medium amount of information can be required, the *(TUDelft) Public stakeholder analysis (with interviews)* is selected from the framework.

Finally the next step of action is selected after the actor analysis method is selected. These steps consist of the identification of possible strategies to perform resulting from the information of the actor analysis. Depending on the information required from an actor analysis, and the project situation/phase you are in, possible strategies can be determined to support the analyst. These strategies consist of:

- Strategies for conflict resolution
- Strategies to influence decision making in a network
- Strategies to create participation/cooperation

For selecting the possible follow-up action the question “what do I want with the information?” needs to be answered. This can also be nothing in some cases. These different strategies are discussed in chapter 3.8.

**Further remarks on Framework:**

- The process phase from the criteria is not included in the framework, because in this phase the actor analysis only needs to be updated. It is not necessary to select a whole new actor analysis during this phase, as only new insights are gained over time from the actors.
- When an actor can only be approached indirectly, it is still possible to gain information about this actor. This can be gathered from earlier projects where the actor was involved, or newspapers / internet pages about the actor.
- Both time/costs and information are determining the selection of actor analysis method. These
criteria are also dependent on each other. When there is lots of time and funds available, but low amount of information can be obtained, it is not possible to select an actor analysis method because of the lack of information. When there is much information available, but time and costs are low, it is not possible to perform an expensive actor analysis. Therefore in this situation a low costs actor analysis method is selected.

- An analyst can choose to use DANA and Q-methodology when analysing actor perception. The choice depends on the amount of information and actors are available. DANA needs medium amount of information, and can be used for roughly maximal 15 actors. Q-methodology is able to analyse larger groups of actors, but needs more specific data.
- Social network analysis can be used in two ways. The analyst can choose to perform the complete social network analysis. The analyst then needs to spend some time in getting to know the analysis method, and to gain data. The analyst can also perform an social network analysis where he uses only the basic concepts of the analysis. In this way less time and costs are spend on the analysis.
- (TU Delft) Public stakeholder analysis can also be used in two ways. If an analyst wants to extend the analysis with interviews more time/costs is spend on the analysis. The analyst can also perform the analysis based on own experience.
- The actor analysis methods and strategies to perform after the analysis are not clear one-on-one relations. It is also possible that the analyst selects a different strategy in a certain situation. For example when performing an analysis for conflict resolution, it is also possible to select participation strategies.
- When performing a stakeholder analysis the analyst can choose for himself whether to use the stakeholder analysis from theory or Grontmij. These analyses are almost similar to each other.
- A folder is developed which purpose is to gain more insights into the selection framework and actor analysis methods provided in the selection framework. This folder is provided as a extra document with this report.

### 5.6 Evaluation of the framework

An evaluation framework is created to evaluate the usefulness of the designed actor analysis framework for Grontmij. This evaluation scheme was based on the expectations that the actor analysis framework will provide Grontmij with insights into actors, their interest, relations, influence etc. Also the expectation of the added value of the actor analysis framework in the selection of an actor analysis has been made. The evaluation framework consists of a combination of the evaluation frameworks of Goeller (1988) and Hermans (2005). Also own insights are added to the evaluation scheme.

For policy and system analysis studies, “success” is difficult to define and measure, partly because different parties at interests have different goals and perspectives (Goeller, 1988 p.25). Because the work of Goeller (1988) has its focus on policy and system analysis, for which actor analysis is related to, his work is used for the evaluation of the actor analysis cases and framework. According to Goeller (1988) three general kinds of success can be distinguished:

- **Analytic success:** considers how the study was performed and presented (Goeller, 1988 p.25).
- **Utilization success:** considers how the study was used in policymaking or implementation (Goeller, 1988 p.25).
- **Outcome success:** considers what happened to the problem situation (and those affected by it) as a consequence of the study (Goeller, 1988 p.25).

Combining the frameworks of Goeller (1988) and Hermans (2005) a list of relevant evaluation factors is created. The factors are selected for the evaluation of the actor analysis performed on the cases because of their usability for this research. The factors evaluate the use of the analysis, the quality of the analysis and the usefulness of the analysis. The following factors are selected for the evaluation:

- **Quality collected data:** this criterion indicated the quality of the collected data. This stresses the importance of data collection as a crucial part of the execution of an actor analysis which covers both the collection of data available prior to the main analysis activity, and additional data collected through surveys or interviews (Hermans, 2005 p.57). The quality is assessed by looking at the richness of the collected data, using indicators like number of actors covered, number and type of interviews, and the number and type of relevant background reports (Hermans, 2005 p.58).
- **Technical validity**: this criterion refers to the analytical quality of the analysis procedure. Technical validity requires that there are no technical flaws in the analysis, which should take into account the relevant actors and issues, the internally consistent and have findings that follow explicitly form the analysis (Goeller, 1988 p.27). The technical validity will be evaluated by experts involved in the project cases, and Grontmij employees. Indicators such as acceptance of the analysis results will be used.

- **Match model with situation**: because there are different actor analysis models are available, it is important that the correct actor analysis method is chosen in a certain situation. The actor analysis framework developed in this research should help with this selection. This is validated by experts and Grontmij personnel. It’s checked if the purpose of the case matches the method, conditions of the method are met, and are the limitations of the model not problematic given the case (Hermans, 2005).

- **Usefulness output actor analyses**: is the study content potentially valuable to its clients (Goeller, 1988 p.27)? This criterion is validated by experts from Grontmij and projects groups related to the cases. Did the experts believe that the actor analysis provided a credible picture of their policy environment and did they see its relevance for their own work (Hermans, 2005)? Experts from the project cases are asked to give their opinion about these questions and if they have recommendations. Also reactions from the Grontmij product folder for the actor analysis are gathered through a questionnaire.

- **Utilization of the actor analysis**: this criterion indicates if the actor analysis methods will be used by Grontmij in future projects (Gueller, 1988). From insights gained by the cases and the product folder created for Grontmij about actor analysis, it can be analysed if analysts of Grontmij will use actor analysis methods. By asking the experts in project cases and Grontmij employees though a questionnaire the utilization can be determined.

The actor analysis framework will be validated in different ways. During construction of the actor analysis framework expert judgement of academics and Grontmij employees have been requested. This will also be the case when the framework is used in the project cases.

The actor analysis framework will be evaluated by experts from Grontmij. These are the experts who also where interviewed by the analyst. In this way the experts are already familiar with the research. A questionnaire will be developed by the analyst that the Grontmij experts need to fill in. From this questionnaire a conclusion about the actor analysis framework can be made. The actor analysis framework will be evaluated on the following points and is reported in chapter 8:

- **Complexity**: is the framework easy to read and to use?
- **Informative**: does the framework provide useful information and insights into actor analysis methods and situations?
- **Complete**: are there some missing parts in the framework or does it covers all the aspects and problems?
- **Value**: does the framework provide any value to the project/process? Does the analysis provide new insights and perspectives?
5.7 Conclusion actor analysis framework

In this chapter a connection between chapter 3 (theory) and chapter 4 (practice) is made. This chapter discusses the development of the actor analysis framework. This framework is developed from requirements from theory and practice. The actor analysis framework should provide a clear overview of actor analysis methods available for certain problem situations. The framework also provides a connection between theory and practice.

Chapter 5 provides an answer on research sub-question:

4) Can an actor analysis framework be designed that combines theoretical insights with practical needs?

The actor analysis framework is shown in figure 9 and 10. The framework consists of criteria from theory and practice, which can be distinguished in direct and indirect criteria. This distinction is made because some criteria have no direct effect on the choice of actor analysis method, and others do have.

First an analyst has to ask himself questions provided in the top of the framework to make him more aware about the problem situation. This makes him think about the available time/costs for the project, but also about which actors will be involved and if he can approach them for information.

Next the problem situation and project phase needs to be determined, from which a matching actor analysis method can be selected. After performing an actor analysis, some follow-up steps have been determined. With these steps the information of the actor analysis is used to create participation/cooperation between actors, or to try to influence the project.

The framework provides an overview of different project and problem situations, and shows that these differences also affect the actor analysis method to choose. It provides Grontmij with an overview of promising actor analysis methods with their characteristic, and when to use these methods. The framework is not binding, as more actor analysis methods are available to choose from. These actor analysis methods have not been selected due to reasons of time and experience. The framework does give the analyst understanding of the problems and considerations he faces when selecting an actor analysis method.

5.7.1 Chapter reflection on research:

In this chapter the actor analysis framework is discussed. The framework is constructed from the requirements and insights gained from chapters 3 and 4. The framework serves therefore as a bridge between insights from theory and practice. The framework should help analysts be aware of the choices they have to make when selecting an actor analysis method. Now that the actor analysis framework has been developed it will be applied on two cases. These cases serve as a validation for the framework but also to gain insights into actors perspectives for Grontmij.
Figure 13: Current phase in actor analysis research

The Netherlands have always been fighting against the dangers of flooding. Due to dikes and water management systems they have tried to keep the risks of flooding at a low level. But this has not always succeeded, like in 1953 when a large part of the Netherlands was flooded. The danger of flooding comes from three types of flooding in the Netherlands, pluvial flooding (the local rainfall/drainage), coastal flooding and river flooding (ECORYS et al., 2008). Especially with the concerns of climate change the Netherlands needs to be well protected against the dangers of flooding.

6.1 Information Floods Directive:

The Floods Directive is a new regime proposed by the European Union on 23 October 2007 (Directive 2007/60/EC). This Directive requires member states to assess if all the water courses and coast lines are at potential risk from flooding, to map the flood extent, assets and humans at risk in these areas, and to take adequate and coordinated measures to reduce this flood risk (European Commission Environment). The purpose of the Floods Directive is to reduce the negative effects caused by the floods (e.g. amount of victims and financial consequences of a flood in Europe (Europa Decentraal, 2010). The Floods Directive requires EU-member states to construct flood-risk management plans every six years for all their river basins. The Floods Directive also gives an incentive for public participation (European Commission Environment, 2010). The Directive shall be carried out in coordination with the Water Framework Directive.

Figure 15 provides a time schedule with deadlines concerning actions that need to be performed for the Floods Directive. For the Floods Directive the following products need to be developed by the EU-member states (European Commission Environment, 2010):

- Member States will undertake a preliminary flood risk assessment of their river basins and associated coastal zones, to identify areas where potential significant flood risk exists.
- Develop flood hazard maps and flood risk maps for their river basins and coastal zones. These maps will identify areas with a medium likelihood of flooding (at least a 1 in 100 year event) and extreme events or low likelihood events, in which flood extent, velocity and expected water depths should be indicated. In the areas identified as being at risk the number of inhabitants potentially at risk, the economic activity, cultural heritage and the environmental damage potential shall be indicated.
- Flood risk management plans (FRMP) must be drawn up for these zones. These plans are to include measures to reduce the probability of flooding and its potential consequences. They will address all phases of the flood risk management cycle but focus particularly on prevention (i.e. preventing damage caused by floods by avoiding construction of houses and industries in present and future flood-prone areas or by adapting future developments to the risk of flooding), protection (by taking measures to reduce the likelihood of floods and/or the impact of floods in a specific location such as restoring flood plains and wetlands) and preparedness (e.g. providing instructions to the public on what to do in the event of flooding).
Due to the fact that water courses and coast lines are located in multiple countries (within the EU) another purpose of the Floods Directive is to stimulate the cooperation between countries. EU-members have to work together (also with surrounding non-EU-members) to develop plans and take measures against the dangers of floods.

6.2 Need for actor analysis:

The EU-member states shall create a flooding-risk-management plan for all the river basins in their countries. These plans are currently in progress in the Netherlands. Grontmij wants to investigate which parties are involved concerning the Floods Directive in the Netherlands, and what their perspectives and roles are. The purpose of the actor analysis is therefore market exploration.

The actor analysis should provide a general overview of the Floods Directive situation in the Netherlands. The purpose is to gain insights into the tasks of the actors involved with their perspectives. The focus of the actor analysis will be on the Netherlands. The floods directive is an international directive, but due to time constrains only the implementation of the floods directive in the Netherlands will be taken into account.
6.3 Actor analysis Floods Directive

In this chapter the actor analysis performed for the floods directive will be discussed. First the selection of the actor analysis method will be discussed. After that the steps to perform the actor analysis with its results are given.

6.3.1 Selection actor analysis method:

Problem owner: Grontmij  
Purpose: Market Exploration Floods Directive  
Insights wanted: tasks actors, perspectives on tasks, responsibilities actors, actions of actors and what they still need to do, needs of actors.  
Required results: Insights into actors for floods directive and their perspectives/tasks.

The actor analysis method that will be used for this actor analysis is the “TUDelft Public stakeholder analysis”. The reason that this actor analysis method is because:

- The actor network needs to be identified and relations between actors have to be presented. Also the actor perspectives need to be identified.
- The purpose of the analysis is exploring the actors perspectives, and there is time available to perform a more elaborate analysis. The insights gained from the Grontmij Stakeholder analysis are less suitable for this actor analysis, because a general overview of the actor network is needed.
- The researcher plans around two weeks to perform the actor analysis.
- The tables and matrixes are flexible and can be adjusted to the specific insights wanted by Grontmij (tasks).
- Information can be gathered from interviews with actors, which can be accessed directly.
- This project case also serves as an example of the use of the (TUDelft) Public Stakeholder analysis.

Figure 16: Selection actor analysis floods directive (highlighted path)
6.4 Execution actor analysis Floods Directive:

Now that the actor analysis method has been selected for the floods directive case, the analysis can be performed. First the steps that need to be performed for the actor analysis will be discussed briefly. This provides some insights into how the actor analysis has been performed. For the complete overview of the actor analysis steps see Annex B. For the execution of the actor analysis on the floods directive, see Annex J.

Steps (TUDelft) Public stakeholder analysis (Enserink et al, 2010):
1. Define an initial problem formulation which can serve as a point of departure for the actor analysis.
2. Identify actors that have interests or are related to the problem.
3. Create a formal chart in which the formal relations are mapped.
4. Determine the interests, objectives and problem perspective of actors.
5. Identify the dependency relations between actors and the network of power.
6. Determine the consequences of these findings with regard to the problem formulation.

6.5 (TUDelft) Public stakeholder analyses on Floods Directive:

For the floods directive case a problem formulation is determined as a point of departure for the actor analysis. Because Grontmij is the problem owner in this case, and their interests lie in the exploration for the market of the floods directive, the problem is formulated as following:

What does the actor network for the Floods Directive in the Netherlands look like, and what are possible opportunities for Grontmij concerning the implementation of the Floods Directive?

6.5.1 Actors:

To identify all the relevant actors for the floods directive case, a quick scan of the available literature has been performed, combined with a brainstorm session. A list of actors has been determined, which are taken into consideration in the analysis. Figure 16 provides a complete overview of the identified actors.
The actor analysis is performed on these identified actors. It is determined by performing the steps of the (TUDelft) Public stakeholder analysis presented in Annex B, which actors are of interest for the Floods Directive case. Eventually a selection of these actors is interviewed. Figure 17 provides an overview of the power/interest table for the identified actors. This indicates which actors will have influence on the implementation of the floods directive, and which have interests in the floods directive.

```
Figure 16: Overview actors identified actor analysis Floods Directive

<table>
<thead>
<tr>
<th>Governmental actors</th>
<th>Commissions</th>
<th>Research Institutes</th>
<th>Interests Groups/ organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Commission</td>
<td>International Meuse Commission (IMC)</td>
<td>Research institute TNO Deltaires</td>
<td>Dutch Federation of Agriculture and Horticulture (LTO)</td>
</tr>
<tr>
<td>Ministry of Transport, Public Works and Watermanagement</td>
<td>International Scheldt Commission (ISC)</td>
<td>UNESCO-IHE institute for water education</td>
<td>Recreation Groups</td>
</tr>
<tr>
<td>(V&amp;W)</td>
<td>Ems steering Group</td>
<td></td>
<td>Historical-cultural association</td>
</tr>
<tr>
<td>Rijkswaterstaat</td>
<td>IMPRO Workgroup</td>
<td></td>
<td>Chamber of Commerce (KvK)</td>
</tr>
<tr>
<td>Waterdienst</td>
<td></td>
<td></td>
<td>Engineering Companies</td>
</tr>
<tr>
<td>DG Water Inspection (IVW)</td>
<td></td>
<td></td>
<td>Companies</td>
</tr>
<tr>
<td>Ministry of Housing, Spatial Planning and the Environment</td>
<td></td>
<td></td>
<td>Citizens</td>
</tr>
<tr>
<td>(VROM)</td>
<td></td>
<td></td>
<td>Insurance companies</td>
</tr>
<tr>
<td>Ministry of Agriculture, Nature and Food Quality (LNV)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ministry of Economic Affairs (EZ)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Union of Waterboards</td>
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<td></td>
<td></td>
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<tr>
<td>Waterboards</td>
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<td></td>
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<tr>
<td>Provincial Authorities</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Municipalities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety regions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 17: Graphical overview of actors dependencies
```

The actor analysis is performed on these identified actors. It is determined by performing the steps of the (TUDelft) Public stakeholder analysis presented in Annex B, which actors are of interest for the Floods Directive case. Eventually a selection of these actors is interviewed. Figure 17 provides an overview of the power/interest table for the identified actors. This indicates which actors will have influence on the implementation of the floods directive, and which have interests in the floods directive.
Based on the literature scan, and the performed steps of the actor analysis (Annex B), the following actors are considered as important actors for the Floods Directive:

- **European Union**
- **Ministry of Transport, Public Works and Water management (V&W)**
  - **DG Water**
  - **Waterdienst**
  - **Rijkswaterstaat**
- **IMPRO workgroup**
- **Union of Water Boards**
- **Water board**
- **Provincial Authorities**
- **Safety regions**

A short description about the actors is provided to give an impression about the organisation and their role in the implementation of the Floods Directive:

**European Union:**
The EU has given the task to the EU member states to implement this new directive in their legislation. Their intentions with the floods directive are to stimulate the cooperation between the EU member states, as cooperation and sharing of knowledge about flood protection is necessary for the implementation of the Floods Directive. Also the EU wants to increase protection against the dangers of floods and want to be better prepared when causality occurs.

**Ministry of Transport, Public Works and Water management (V&W):**
The ministry is responsible for the general water policy and legislation in the Netherlands, and therefore also (end) responsible for the implementation of the Floods Directive. The ministry is also responsible for the flood management of the primary rivers (Rhine, Meuse, Scheldt and Ems) and sea dikes.

- **DG Water (V&W):**
  DG Water is responsible for the coordination of the implementation of the floods directive and the products that have to be made. The minister V&W is the final responsible, but within the Ministry DG Water has the task to implement and create products for the floods directive. Because of this responsibility, DG Water is a very important actor concerning the floods directive. They also have the ability to request budget for water projects related to the FD at the ministry.

- **Waterdienst (V&W):**
  The Waterdienst is not really an actor with a stake in the floods directive. The Waterdienst’s main task is to support DG Water in the implementation. The Waterdienst also supports the development of the products for the floods directive. Because the Waterdienst has a supportive role, they do not have real influence on the process. They will act on the requests of Rijkswaterstaat and DG water.

- **Rijkswaterstaat (V&W):**
  Rijkswaterstaat is responsible for executing the tasks and actions delegated by the Ministry V&W. Therefore Rijkswaterstaat is the executing party of the Ministry V&W.

**Implementation Directive of Flood Risk workgroup:**
This is a Dutch working group which is responsible for the development of the products for the Floods Directive. The Implementation Directive of Flood risk workgroup (In Dutch: Implementatie Richtlijn Overstromingsrisico (IMPRO)), which is a workgroup existing of all the relevant parties that are involved in the development of the products for the floods directive. The IMPRO working group is responsible for the actual planning and coordination of implementing the floods directive in the Netherlands. In the IMPRO working group the following organisations are represented: Ministry V&W, Ministry VROM, Rijkswaterstaat, DG Water, Union of Water boards (UvW), Interprovincial Overleg (IPO), Association of Municipalities (VNG), Inspection ministry VW and the safety regions.
**Union of Water boards:**
The Union of water boards is seen as a very important actor concerning the floods directive. The Union represents the interests of all the water boards in the Netherlands. Because of their role in the IMPRO working group, the Union of Water boards has influence to induce their interests. This can be generally concluded for every actor involved in the IMPRO. The union delegates the decisions made in the IMPRO to the water boards.

**Water boards:**
The water boards are an important actor for the construction of the products for the flood directive. The water boards are responsible for the construction of the hazard maps and the water safety part for the FRMP. They possess lots of knowledge about water safety, and also have the ability to finance parts of their own activities.

**Provincial Authorities:**
The province is an important actor for the construction of the products for the flood directive. The province is responsible for the construction of the spatial planning part for the FRMP. They are concerned with spatial planning, and also have the ability to finance parts of their own activities. Therefore the provincial authorities are an important actor in the floods directive.

**Safety Region:**
The safety region is a relatively new organisation in the Netherlands. They officially do not exist. In October of this year the safety region will become a legal organisation in the Netherlands. Because they do not exist yet, they have low influence on the floods directive. Their role at this point is to create the plans of evacuation for the FRMP. The safety region is represented in the IMPRO, but because they do not legally exist, their role is only to represent their interests. Once the safety region is official, they will be able to induce their interest more. The safety region is a network organisation of the fire department, hospitals and municipalities, for which they have to deal with lots of interest within the organisation themselves.

**Selection actors for interview:**
Because of time limitations not all the actors will be approached for an interview. Therefore only a single perspective of the selected organisation can be gathered. Because of this only experts concerning the Floods Directive are selected for an interview. Based on a review of the Floods Directive literature the actors above are selected. These actors mostly consist of governmental actors because the analysis is focussed on the implementation of a directive. For interviews mostly civil servants are approached because of their direct relation with the case. The researcher is well aware of the differences between organisations and governing boards, but because of the implementation of the directive, only organisations are approached.

DG water is selected because they represent the stakes of the ministry V&W. This is the same for the Waterdienst, as the Waterdienst performs (and supports) the tasks for Rijkswaterstaat. Both the Union of water boards and water boards are selected for an interview, because of the different roles these actors play. The Union of water boards represents the interests of the water boards at national level, as the water boards are concerned in performing their tasks. The safety regions might play a role in the development of plans for evacuation when a flood occurs. Because of the fact that the IMPRO is a workgroup, this is not really an actor. DG Water is chairman of the IMPRO workgroup, so by interviewing DG Water the IMPRO workgroup is also covered.

The municipalities have not been selected as an interesting actor. As approaching the municipalities for an interview, it became clear that they do not play a direct role in the implementation of the floods directive. They refer to the provincial authorities. Therefore with the following actors an interview has been held:

- DG water
- Waterdienst
- Union of Water Boards
- Water board (Hoogheemraadschap van Rijnland)
- Provincial Authorities (Province of Utrecht)
- Safety regions (Safety region Utrecht)
The actor analysis and conclusions are based on the knowledge gained from these interviews. The other actors are still taken into consideration in the analysis, as they still can be of importance for the analysis. Because only one interview is held with the organisation the analysis draws conclusions based on a single perspective of the involved actor. The researcher is aware of the fact that within the organisation the perspectives can differ, therefore the most involved persons with the case are selected. The results of the analysis will be reported in a direct way. This means that differences in perspectives or conflicts will be reported in ‘blunt’ way to amplify the difference between the actors.

6.5.2 Relations

To represent the relations between these actors involved in the Floods Directive, a formal chart is constructed. Figure 18 provides an overview of the actors involved with the Floods Directive in the Netherlands and their relation with each other. In this figure the type of relation and the network structure of the Floods Directive case is presented. Because the Floods Directive is relatively new, and is still in the implementation phase, the main actors are governmental. These actors are mainly concerned with the implementation of the EU policy in the Netherlands, and the development of the products for the floods directive.

As the actors have indicated, the development of products for the floods directive will be in cooperation between the responsible actors. DG Water is responsible for the quality and delivery of the products for the floods directive. The working group IMPRO is the workgroup for the implementation of the Floods Directive in the Netherlands. The plans generated by IMPRO are delegated on a regional level. The Waterdienst has a support function in the network. It does not have a stake in the Floods Directive, but is there to support the actors in the construction of the products.

The municipalities, water board, safety region and province all work together to develop the plans for the Floods Directive. For this they all have their own responsibilities, but try to develop an integrated plan for the Floods Directive. In the workgroup IMPRO guidelines and policies are determined for the construction of the Floods Directive plans. Therefore the actors involved in the construction of the plans will eventually report to the IMPRO workgroups. DG Water is chairman of the IMPRO workgroup and therefore end responsible for the products.
6.5.3 Perspectives:

The Floods Directive is initiated by the Netherlands and France. The reason behind this initiative is to stimulate EU members to think about their flood protection. When the quality of flood protection increases in the EU, the financial consequences for all the EU members can be limited. Therefore there was an economic interest of the Netherlands in the floods directive.

According to the actors the floods directive is already in line with the existing Dutch water safety policy (NWP) and therefore they expect no substantial changes regarding the Dutch policy. On the aspect of water safety the Netherlands have much experience, also within Europe. Therefore from water safety the perspective is that the floods directive doesn’t lead to adjustments within the NL-policy.
The actors share the perspective that the floods directive does give an incentive to incorporate the multilayered safety concept (see textbox) into the plans for the floods directive. The perspectives are gained from table 8. In this way countries have to think not only about water safety, but also about spatial planning and evacuation plans. In the Netherlands the focus was mainly on the water safety, and all the actors agree that it might give an impulse to think more about spatial planning and evacuation. The only problem with this is that for these aspects there is not much experience and information available.

<table>
<thead>
<tr>
<th>Actor</th>
<th>Interests</th>
<th>Perception (on FD)</th>
<th>Relation network (FD)</th>
<th>Responsibilities in FD</th>
<th>Products for FD</th>
<th>Anticipated Problems FD</th>
<th>Additional Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>DG water</td>
<td>Water policy in Netherlands.</td>
<td>The primary dikes do not meet required norms water wet.</td>
<td>DG water is chairman of IMPRO workgroup, and is involved in an international workgroup, which advises the EC on the floods directive.</td>
<td>Responsible for quality of products and implementation.</td>
<td>Construction of 4 ORBP’s, and international communication.</td>
<td>Uncertainty about context ORBP(^6) and level of detail.</td>
<td></td>
</tr>
<tr>
<td>Waterdienst</td>
<td>Provide support for policy development in the Netherlands.</td>
<td>It gives an incentive to incorporate spatial planning and causality planning and stimulates cooperation between EU countries.</td>
<td>provides support for Rijkswaterstaat en DG water.</td>
<td>Provide support for implementation, and development of plans.</td>
<td>Involved in all the products.</td>
<td>more attention for the spatial planning and causality planning.</td>
<td>does not have a stake.</td>
</tr>
<tr>
<td>Union of Water boards (UvW)</td>
<td>UvW represent the interests of water boards in the Netherlands (26).</td>
<td>Think about multilayered safety.</td>
<td>UvW is closely related to Rijkswaterstaat and V&amp;W, province municipalities, DG Water, IMPRO.</td>
<td>Responsible for the maintenance (coastal) dikes in the Netherlands.</td>
<td>development of all the products.</td>
<td>Multilayered is complex, because of new concept.</td>
<td>there hasn’t been much attention to the areas that are located directly at the coast.</td>
</tr>
<tr>
<td>Water board (Hoogheemraadschap van Rijnland)</td>
<td>concerned with water management within its area.</td>
<td>The FD has a strong incentive to increase the interaction/cooperation between EU countries concerning floods protection.</td>
<td>The HHR is related to RWS, the province, safety regions and municipalities.</td>
<td>The goal is to protect the area against floods.</td>
<td>The HHR construct a dummy version for the ORBP.</td>
<td>Uncertainties about the level of detail for the risk maps, ORBP, and implementation multilayered safety.</td>
<td>The connection between water safety and spatial planning is minimal.</td>
</tr>
</tbody>
</table>

\(^6\) ORBP = overstromings risico beheersplan, which is the flood risk management plans.
Table 8: Perceptions table (TUDelft) Public Stakeholder analysis

The actors who have international interests all acknowledge that the floods directive has an important added value for the international communication. The floods directive as being international legislation implies that EU members have to inform and communicate about water safety with the neighbour countries. For the Netherlands these are mainly Belgium, Germany and France, for which the communication was already arranged by means of International river commissions. So for the overall communication between EU members on the level of flood protection the floods directive does have an added value. Especially because the floods directive implies that countries can not take actions that negatively affect their neighbouring countries.
One other difference in perspective is between the (union of) water boards and DG water about the quality of the primary dikes. Both actors are aware of their role of water management in the Netherlands, but have a different interpretation about the quality of the Dutch dikes. DG Water has the perception that the dikes do not meet the requirements set by the Dutch water law. The water boards on the other hand state that the dikes do meet the requirements, but that the external requirements are not met. These are hydraulic requirements, which are changing over the years because of the climate change. This difference in perspective leads to a discussion about financing the safety measures for the dikes.

Textbox:
The multilayered safety concept consists of the extension of the water safety policy. Traditionally the focus in the Netherlands has been on the prevention and protection of floods. The multilayered safety concept consists of three layers in which not only the prevention is taken into account, but also the spatial planning and evacuation. The three layers consist of (kust op kracht):

- The current policy, which is focused on the prevention of floods
- Spatial planning, the safety and structure of the areas behind the dikes are taken into consideration
- Crisis management: be prepared when a (flood) hazard occurs.

6.5.4 Tasks:

Every actor has its own perspective on its tasks, and who is responsible for what. In July a plan of action is presented in which further implementations of the Floods Directive is indicated. In general the tasks of the actors for the floods directive are the same as usual. This means that the water boards are responsible for the water security, the province and municipalities are responsible for the spatial planning, and the safety region is responsible for evacuation of the Netherlands. Figure 19 and 20 provides an overview of the tasks of the actors concerning the floods directive.

As discussed earlier three different products have to be constructed for the floods directive (flood risk assessment, flood hazard maps and flood risk management plans). In the Netherlands the flood risk assessment will not be executed. For this product, the risk areas have to be identified. The whole of the Netherlands has been identified as a potential risk area, as a large part of the Netherlands lies below sea level, and is connected to the coast.

The development of the hazard maps is almost finished. Maps from earlier projects can be used for the development of hazard maps for the floods directive. These maps are available at www.risicokaarten.nl. The Waterdienst, province and water boards are currently busy with adapting the maps so that they meet the requirements for the floods directive.

For the flood risk management plan (FRMP) the concept of multilayered safety will be the leading principle. This means that for water safety, spatial planning, and for the evacuation plans need to be constructed. Respectively the water boards, the provincial authorities and the safety regions are responsible for these parts of the plan. For every drainage basin in the Netherlands these plans need to be constructed (total of 4). The water boards have the perspective that their part of the safety plans is almost finished. Because the Netherlands have always focused on water safety, the information for the FRMP is already available. They have the perspective that they can copy/paste information from earlier plans into the FRMP.

The provincial authority is responsible for the construction of the spatial planning part for the FRMP. Because much attention in the Netherlands has always been on the water safety, the implementation of the spatial planning part into the FRMP is still uncertain. The provincial authority has indicated that they still need to determine how the spatial planning part needs to be implemented. This will be done in cooperation with the water boards.
For the construction of the evacuation plans for the FRMP the safety region is responsible. They are capable of constructing these plans, but their perspective is that it’s necessary that these plans need to be incorporated with the plans for water safety and spatial planning. In the opinion of the safety region, a version of the floods directive has been chosen, where it is not necessary to construct an integral plan for floods protection. There was also a version of the floods directive where this was necessary, but this version has not been chosen. They also share the perspective with the provincial authorities that there has not been much attention for the spatial planning and the evacuation parts in the Netherlands.

One note is that the safety region is officially not an organisation yet. In October this year the safety region is official. For the construction of the hazard maps, the safety region is not responsible. But they can advise the actors responsible for the hazard maps what insights they need from the hazard maps.

Figure 19: Responsibilities for floods directive concerning hazard maps

Figure 20: Responsibilities for floods directive concerning FRMP.
The actors share the perspective that there is still uncertainty how to implement the multilayered safety concept. Because of this relatively new concept for the Netherlands, there is not much experience and information available about spatial planning (concerning water) and evacuation planning. Especially the combination of these aspects is a new concept. It is therefore still uncertain for the actors what the plans (and the three parts) for the FRMP needs to look like. But all the actors share the perspective that the plans will be finished before 2015.

Also the level of ambition is not clear yet. The provincial authority and the safety region both share the perspective of spending much time on the FRMP to create an added value for this product. They also find the construction of an integral FRMP very important. The water sector has a lower ambition for the FRMP because they have all the information and data ready. Because of this difference in ambition the safety region worries about the integration of plans.

Annex J provides an overview of the perspectives and tasks of the actors involved in the floods directive.

6.6 Conclusion actor analysis Floods Directive

The Netherlands are at the moment active in implementing the floods directive policy into their legislation, and develop the products for the floods directive. Actors that play an important role in the implementation of the floods directive are: DG Water, Union of Water board, Waterdienst, Water Boards, Provincial Authorities, and safety regions. These actors play a role in implementing the policy, or developing a product for the floods directive. The tasks of the actors concerning the floods directive are all clear. DG water is responsible for the implementation of the floods directive, and creation of the products. The water board is concerned with water safety, the province with spatial planning and the safety region with the evacuation plans.

According to the actors the floods directive is already in line with the existing Dutch water safety policy (NWP) and therefore they expect no substantial changes regarding the Dutch policy. The Netherlands always have put much attention into water safety. But the floods directive does also give an impulse on the concept of multilayered safety. This consists of not only thinking about water safety, but also about spatial planning and evacuation. Because of the focus of on water safety, there is not much experience and information available about the integration of spatial planning and evacuation.

The current status of the product in the Netherlands is as following. The risk assessment will not be performed, because the whole of the Netherlands is considered as a potential flood risk area. The hazard maps are almost finished. These maps where already created in other plans, which can be used for the floods directive. It still needs to be determined if the maps need to be adapted. The flood management plans (FRMP) are still under construction. For this product there is still some uncertainty. It is not clear what the content for the spatial planning and evacuation part needs to be, and in what level of detail.

The current differences concerning the floods directive lay in the perspective of the actors on specific points. First there is a difference in perspective about the level of ambition for the floods directive products. The province and safety region want to put effort in this plan, to give it an added value. Another problem is the development of FRMP plans. For these plans the spatial planning and evacuation parts are not clear yet. The safety region is busy with developing plans for the evacuation, but they need the cooperation of the water boards and provinces. Because a version of the floods directive is chosen where the incorporation of the FRMP aspects is not necessary, the safety region is concerned that the plans will not be incorporated into one overall plan. This affects the quality of the plan and cooperation between the actors.
6.6.1 Authors Interpretation:

The floods directive will bring new insight into the Dutch floods protection. Especially the incorporation of the multilayered safety is an important part of the floods directive. The Netherlands have been focusing on water safety, but it is also important to think about actions when a flood occurs. This requires a different approach to water safety for the Netherlands.

The actors are able to develop plans for each part of the multilayered safety, but the integration into one plan will be complex because actors think/act according to their own tasks. This is especially the case for the water sector. They don’t feel responsible for spatial planning and evacuation, and leave those to the province and the safety region. But this may not be so, as the water boards possess the knowledge of flooding in the Netherlands. Actually to come up with a good plan, cooperation is necessary. The fact that they have chosen a version of the floods directive, where the integration is not necessary, creates the image that the water sector is not willing to spend much time on the products for the floods directive. Eventually it might turn out to be a copy/paste version of earlier plans concerning floods protection. That would be a waste, because especially now the incentive of integrating spatial planning is growing in the Netherlands.

6.6.2 Determine market opportunities for Grontmij:

Based on the actor analysis performed on the Floods Directive case, some market opportunities can be identified for Grontmij. A distinction has been made between opportunities followed from the actor analysis itself, and some additional opportunities identified in the interviews and literature, but which was not relevant for the analysis.

Opportunities identified in analysis:

- The incorporation of the 3 layer of multilayered safety still needs to take place. Water safety, spatial planning, and causality planning probably needs to be incorporated into one plan for each drainage area. How this is done is still uncertain. Grontmij can play an advising role in this process (maybe contact IMPRO).
- The safety region develops plans for evacuation when flood hazard occurs. These plans have to be co-ordinated between all the safety regions related to each other. This will be a complex process, in which Grontmij can provide its expertise.
- Be an objective party in the conflict between perspectives on the quality of the (primary) dikes. Perform a research if the dikes do meet the requirements set in the Dutch water law, which can be input for the discussion.
- There is still uncertainty about the implementation of the spatial planning. It is not certain yet for the actors how to implement the water safety with the spatial planning. Grontmij might play an important role in advising how to implement these aspects for the floods directive (robust building for example).

Additional Opportunities:

- Develop protection plans for living areas outside the dike area. These living areas are closely connected to the sea, which makes them vulnerable against storms and floods.
- Insurance companies are at this point not yet an interesting actor for the floods directive. It is still not possible to be insured in the Netherlands against floods. There are developments going on to discuss if this will be possible in the future. When this will be the case, Grontmij can help in providing information about the area and develop plans for insurance companies.
- The information of the floods directive needs to be made public, but it is still the discussion which information needs to be published and which not. Grontmij might play a role in researching which information is wanted by the public and municipalities, and which actions to take with this information. Hazard maps are now available on www.risicokaart.nl, which might need to be adapted for communication with the public.
6.6.3 Additional Notes:

Actors that have not been selected for an interview, but which might still be interesting actors in the floods directive, are the IPO and the VNG. These are associations of respectively the provincial authorities and the municipalities. Because there still is uncertainty about the implementation of spatial planning into the FRMP, these might be interesting actors to contact. As these actors are active in the IMPRO workgroup, and represent the interests of their members, they might have influence on how to implement the spatial planning.

The perspective presented of the actors is a single perspective on the Floods Directive. It can be the case that other actors have a different perspective on the implementation of the Floods Directive.

For the construction of flood risk maps it is concluded that this is not a possible opportunity for Grontmij, as the development of these maps is almost finished and being executed by the actors themselves.

6.7 Validation actor analysis Floods Directive.

When performing the actor analysis for the Floods Directive case, interviews where held with the selected actors. These interviews are recorded and afterwards documented by the researcher. The interview reports are send to the respondent, which are able to give comments or adjustments on the interview. Based on their comments report is adjusted, and by this the data gathered from the interviews are validated.

Now that the data is gathered and validated, the actor analysis report is constructed. The analysis report was send to the relevant actors. A questionnaire is constructed in which the actors can give their opinion about the quality of the actor analysis and the actor analysis method. The questionnaire is provided in Annex N. By means of the questionnaire the actor analysis is validated and evaluated.
7 Case Spatial Restrictions.

A second case to perform an actor analysis for is the Spatial Restrictions case in the North-Holland province. The project is initiated by the Provincial Authorities in the North of the Netherlands. The goal of the spatial restrictions project is to map out all the subdivision of tasks, responsibilities and powers of parties concerning coastal protection, and to pose suggestions on how to improve this situation. The project team for Spatial Restrictions consists of cooperation between the companies Grontmij, APPM and the Erasmus University of Rotterdam.

The Spatial Restrictions project in the North of the Netherlands is part of the partner groups related to the SUSCOD (Sustainable Coastal Development in Practice) project which serves as the lead partner of the project. The SUSCOD project is concerned with the development and protection of the coastal zone against the effects of climate change. The aim of the SUSCOD project is to develop with their partners an Integrated Coastal Zone Management (ICZM) tool.

7.1 Selecting case for spatial restrictions project:

The actor analysis performed for the spatial restrictions project will serve as a practical case study. The actor analysis will provide information and insights into the problems in practice concerning coastal projects.

Coastal protection projects become complex because they connect the problems of protection against floods with spatial developments. One perspective is that the country should be safe against the dangers of floods. Another perspective is that these plans should not interfere with the developments of areas (mobile infrastructure, nature, and living environment) near the coast. Cases in which these problems often come together are within the “weak link” projects around the Dutch coastal area.

Weak links in the Dutch coast are defined as areas that have to be strengthened before 2020 because of the rise of the sea level, higher frequency of storms and safety measurements against floods. There are eight areas defined as primary weak links at the Dutch coast. Primary weak links consist of the combination of flood protection and spatial developments problems, for which integrated project plans need to be developed. One of these primary weak links is selected for an actor analysis.

Figure 21: Example Weak Link location in Den Helder NL

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7 Informatie uit: Offerteverzoek Spatial Restrictions Provincie Noord-Holland, Grontmij
10 http://provincie.zeeland.nl/veiligheid/zwakkeschakels/
7.1.1 Weak link “Kop van Noord-Holland”:

An actor analysis will be performed on the weak link “Kop van Noord-Holland”. This is one of the eight primary weak links in the Dutch coast. The project for the weak link is still in the design phase (Kust of Kracht), which makes it possible to get clear insights into the perspectives and objectives of actors because actors are still busy with it. Another reason for the selection of this weak link is because of the conflict between water safety and spatial planning. Based on a financial perspective, a balance has to be made between these two aspects (Provincie Noord-Holland & Hoogheemraadschap Hollands Noorderkwartier, 2008). The relevance of both safety and area development is considered equal by the government, which implies that the complexity of this weak link project is high.

![Figure 22: Coastal area of weak link “Kop van Noord-Holland” (Kust op Kracht)](image)

The weak link of “Kop van Noord-Holland” is located between the dunes of Callantsoog and Groote Keeten. This part of the coastal area consists mainly of dunes. For the improvement of the security of the weak link a construction which is called “natuurlijk gestroomlijnde kust” has been chosen. This alternative consists of increasing the sand capacity, which creates a larger beach area but also stronger dunes (Provincie Noord-Holland & Hoogheemraadschap Hollands Noorderkwartier, 2008). In this way the there are possibilities for spatial planning, and the safety is also being secured.

A proposal of the preferred alternative now lies at the Ministry of Transport, Public Works and Water Management for approval. This alternative consists of a large increase of the sand capacity at Petten, which decreases in capacity when moving further to Den Helder. This has been done because of the water streams which will slightly move the sand over the years to Den Helder.

The focus of the analysis lies on the area around Callantsoog. This is one of the weakest spots in the weak link of Kop van Noord-Holland, where lots of activities take place. Measures need to be taken for water safety, and the province and municipalities identified opportunities for the spatial planning. The dunes around Callantoog also fall under the Natura2000 regulation. Therefore this area gives a good impression of the perspectives of the actors in the whole weak link area.

![Figure 23: Actions to improve weak link Kop van Holland at Petten (Kust op Kracht)](image)

An overview of the project process is shown in figure 24. In 2004 an (plan MER) Environmental Impact Assessment (EIA)) has been initiated by the province Noord-Holland. In this strategic EIA different safety measures are investigated. In 2006 the safety measure of expanding the capacity of beach and dunes between Petten and Den Helder has been chosen by the Province. In 2007 the second phase of the research has been started, in which the project EIA procedure is started. In this EIA study different alternatives of the safety option are investigated, in cooperation with stakeholders. Resulting from this research a preferred alternative has been developed taking the interests of actors into account, which has to be approved by the Ministry of Transport, Public Works and Water Management. When it is approved, the project can be executed.
7.2 Need for actor analysis:

Coastal protection projects are usually defined as complex projects, because of the approach from the water safety and spatial development domains. There are lots of different parties and diffusions of responsibilities which create a problematic and complex situation. It is therefore important to create a clear overview of the involved parties in the spatial restrictions project and their perspectives and responsibilities. Therefore an actor analysis will be performed to create this overview of the actor network. Because of the complexity in perspectives between actors, an actor analysis is also important to improve the cooperation of actors in this network.

Grontmij has interests in this weak link case, because it provides input for their Spatial Restrictions research. In this weak link case the relation between water safety and spatial planning is strong, and therefore may provide useful insights for their project. The analysis will be performed from the perspective of Grontmij. That is having an objective view on the weak link case, and provides knowledge to the Spatial Restrictions project.

7.3 Actor analysis spatial restriction:

In this chapter the actor analysis performed for the spatial restrictions case will be discussed. First the selection of the actor analysis will be discussed. After that the steps to perform the actor analysis with its results are given.

7.3.1 Selection actor analysis method:

Problem owner: Grontmij (objective researcher on the weak link case)
Purpose: Gain insights into network relations, perspectives and process of weak link case.
Insights wanted: Interest actors, perceptions actors, relations between actors and actor network, conflicts/cooperation between actors, actions and resources of actors.
Required results: Insights into conflicts in coastal protection projects and relations between actors.

The actor analysis for the case of spatial restrictions should provide the following insights:
- Overview of the involved actors in the case.
- The perspectives and interests of the actors on the case.
- The responsibilities and tasks of the actors concerning the case.
- An overview of the actors resources (like financial resources and regulations).
- Map out relations between actors (conflicts or cooperation’s)
- Insights into problems concerning coastal protection project (process concerning tasks and responsibilities)
The actor analysis method that will be used for this actor analysis is “DANA”. The reason that this actor analysis method is chosen is because of the following reasons:

- Provides insights into perspectives and actor network. Also insights into the differences and agreements among actors (Hermans, 2005) and resources/relations are analysed.
- Provides a clear visual model as end result, which can be used for communication purposes (Hermans, 2005).
- The analyst is unfamiliar with the actor environment for this case so a high analytical method will be performed.
- The purpose of the analysis is exploring the actors perceptions and the actor relations between each other. There is time available to perform a more elaborate analysis. A general overview of the actor network is required and relations between actors are analysed.
- A time period of 4 weeks is reserved for the DANA analysis. Not much literature or data is needed for the research; interviews are used to collect data. It should be possible to do this within the time period.
- The analyst has some experience with the new updated software of DANA.
- The actor analysis method has not been used by Grontmij which may provide new insights and perspectives of using an actor analysis.
- Q-methodology has not been chosen because this analysis is used when perceptions of large groups are needed. For this research interviews with one representative of a limited number of organisations are held.

The actor analysis for the spatial restrictions case has multiple purposes. First the analysis should provide insights into the network of relationships and perceptions of actors. The role and the interests of an actor in the weak link case is analysed, and their perspective on the project process. Therefore the DANA analysis method has been selected to gain insights into these aspects.

A second purpose of the actor analysis for the spatial restrictions case is to provide input for the independent spatial restrictions research performed by Grontmij and others. This research consists of analyzing the institutional barriers in coastal projects for the Netherlands. The actor analysis performed for this master thesis serves as input for this research. It provides practical insights into the project process and institutional barriers for coastal projects. These insights are gained by asking some additional questions during the interview with actors. The actor analysis written for the spatial restrictions research is provided in Annex L (in Dutch).
7.4 Execution actor analysis for weak link case:

To perform the DANA analysis some general steps to perform are identified. A complete overview of the DANA analysis is provided in Annex B. The DANA analysis consists of the following steps:

1. Identification of actors involved; brainstorm session to identify all actors involved in the decision making process.
2. Interviews & data collection; conduct interviews with relevant actors generally in one-on-one concept. The purpose of the interviews is to gain more insights into the perspectives, interests and conflicts.
3. Construction of model with DANA software; construct a model out of the information to show the relations between actors (make a causal relation diagram).
4. Draw conclusions from model about the problem

DANA is based on the use of causal relation diagrams which are used to represent the perceptions of the individual actors; for each actor, a diagram is constructed that shows the factors and instruments that they find to be of relevance, together with the causal relations they assume to exist between these elements (Hermans, 2005).

For the construction of the DANA models a software program is available. This program, including elaborate information about DANA and the construction of models, can be downloaded from http://www.dana.actoranalysis.com.

For each actor a model is created (see figure 26.). This model represents the perspective of that actor on the weak link case “Kop van Noord-Holland”. The main components to construct a perception model are:

- **Arena**: the issue that is analysed. Therefore an arena represents a specific issue within a case.
- **Goals**: the objectives of an actor. An example of a goal is “increase water safety” in the Municipalities model.
- **Factors**: a property of the system as a whole, not only of the actor. A factor is something that is relevant to the case. An example of a factor used in this DANA analysis is “support of the region” in the Municipalities model.
- **Attributes**: factors that are only a property of the actor.
- **Actions**: action or instruments that actors have to influence the goals. An example of an action is “participate in process” in the Municipalities model.
- **Links**: the possibility to create links or relations between factors and attributes in the model. Represents the relation between the factors (positive or negative relation).

After constructing the models an analysis is performed by the DANA software. A short description is given about the configuration of this analysis. This gives some more insights into what kind of analysis are possible with the DANA software. For a complete discussion about the DANA analysis configuration see http://www.dana.actoranalysis.com. The following configuration for the DANA analysis has been used:

- **Arena Level Properties**: analyses involving different actors within one area.
  - Support and Opposition: This option analyses how actors react on the preferred strategies of others. It analyses the satisfaction, frustration and utility of actors on preferred strategies of others. The analysis is presented in a matrix.
  - Conflict: conflicts in perceptions (goals, prospects, influence and actions) between actors are analysed with this option.
  - Resource Dependency: this option analyses how actors are dependent on the resources of each other. The analysis is represented in a relation graph. The utility to gain and to lose are shown.
- **Actor Level Properties**: analyses focussing on one or more actors.
  - Multi-Criteria Analysis: for each possible action of an actor it analysis how other actors perceive this action. For every possible option the utility gained or lost by the other actors is analysed. The analysis is presented in a matrix.
  - Inferred Strategies: This analyses produces an overview of the combination of actions that, for the selected actor, would result in the ideal strategy.
7.5 DANA on Weak Link “Kop van Noord-Holland”

Now that the DANA analysis method has been discussed the actor analysis method is performed on the weak link project “Kop van Noord-Holland”. The analysis is provided in the sub-chapters below.

7.5.1 Actors:

To identify all the relevant actors for the weak link case, expert judgements have been gathered combined with a literature study. From this a selection of actors has been identified to analyse for the weak link case. Interviews are held with actors, which provide as input for the DANA models. A short description of the identified actors with their role and perception on the project is provided in table 9.

<table>
<thead>
<tr>
<th>Actor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DG Water (DGW)</td>
<td>DG water is part of the Ministry of Transport, Public Works and Water Management and is the end responsible for the weak link project. The Ministry is the official client for the weak link project, for which DG Water represents the interests of the Ministry. DG Water has assigned Rijkswaterstaat to supervise the weak link project. DG Water is mainly concerned with improving the water safety in the project, but gives the incentive to development an integrated project plan. They have a financial budget available for the water safety part.</td>
</tr>
<tr>
<td>Provincial Authority Noord-Holland (PNH)</td>
<td>The Provincial Authority of Noord-Holland is responsible for the main project process. They are concerned with the project process and that it will lead to a successful outcome. Also the Province is the initiator to seize opportunities for the spatial planning and development of an integrated plan. The province wants to increase the spatial quality of the coastal area. They develop the plans in cooperation with other parties, like the municipalities and the waterboard. They also try to find financial budget together with these parties to finance the spatial planning part.</td>
</tr>
<tr>
<td>Waterboard Hoogheemraadschap Hollands Noorderkwartier (HHNK)</td>
<td>The HHNK is responsible for developing water safety plans for the weak link case. Also the HHNK has a role in developing an integrated project plan, and cooperates in increasing the spatial quality of the coastal area.</td>
</tr>
<tr>
<td>Municipalities Zijpe and Den Helder (Muni)</td>
<td>Both the municipalities Zijpe and Den Helder are concerned with the spatial development in their area. They want to stimulate the recreation and tourism in the area, and increase the living quality. They can reach these objectives by participating in the development of project plans. Therefore the municipalities stimulate the development of integrated plans. The municipalities represent the interests of stakeholders in their area.</td>
</tr>
<tr>
<td>Nature Conservation Group Landschap Noord-Holland (LNH)</td>
<td>The LNH is concerned with managing the natural environment of the dune/dike area around Callantsoog. They own property of the dike area, which they want to preserve for environmental developments. Also the dune area falls under the Natura2000 regulation, for which LNH is responsible of maintaining this area.</td>
</tr>
<tr>
<td>Development Company Holland North (DCHN)</td>
<td>The DCHN is a subsidiary company of the provincial authority, municipalities, companies and Chamber of Commerce in the region. They are responsible for executing the economic policy of their shareholders. They try to increase the economic welfare of the region. The DCHN represents the interests of companies and other organisations in the region, and are therefore actively involved in developing an integrated plan for the weak link project.</td>
</tr>
</tbody>
</table>

Table 9: Overview actors case spatial restrictions

---

11 Interviews are held with one person from the selected organisation. Therefore the analysis is bases on a single-perspective.
The actors presented in table 9 are invited for an interview for the actor analysis. These actors are key players in the weak link project, but also represent interests of other parties. DG Water represents the interests of the Ministry of Transport, Public Works and Water Management, and assigns Rijkswaterstaat. Therefore by interviewing this actor, insights are also gained for the other actors which DG Water is related to. DCHN represents the interests of the companies and organisations within the region. Therefore by selecting DCHN, the other interests and stakes are also captured. Municipalities have their own interests in the weak link project, but also represent the interests of the people living in their area.

For interviews mostly civil servants are approached because of their direct relation with the case. Because of time limitations only one person from an organisation is interviewed, and therefore the analysis is based on a single perspective. The researcher is well aware of the differences between organisations and governing boards, but because of the implementation of the directive, only organisations are approached. The results of the analysis will be reported in a direct way. This means that differences in perspectives or conflicts will be reported in ‘blunt’ way to amplify the differences between the actors.

In Annex M the interview questions are provided. The interviews create input for the construction of the DANA models. The models constructed for the actors are presented and explained in Annex K. These models present the perspectives and interests of the actors on the weak link case. Figure 27 provides an example of a model constructed for the water board HHNK.

Figure 26: DANA model for HHNK

7.5.2 Perspectives

For the weak link “Kop van Noord-Holland” and integral project plan needs to be developed. This project plan will integrate the water safety measures with opportunities to increase the spatial quality in the area. All the actors share the perspective that it is important to develop this integral plan. Especially the actors who are concerned with the development of the spatial planning part, are willing to develop these plans. These actors consist of the province and the municipalities.

The interest of the water sector in the development of integrated project plans is somewhat less than the actors concerned with spatial planning. The water sector’s main concern is the increase of the water safety. Especially DG Water is interested in this aspect. They are not that involved in the improvement of the spatial quality but have the perspective that it would be nice if this goal can be reached. DG Water has assigned the province to be responsible for the development of an integrated project plan and increasing the spatial quality of the area. The water board has more interest in the development of an integrated project plan, as they participate in this process. The spatial planning ideas need to be coordinated with the water safety plans.
A difference in perspective can be found in the financial part of the project. The province of Noord-Holland is responsible for the development of an integrated project plan. They also try to stimulate the spatial quality of the area, by increasing recreation and tourism possibilities. These measures need to be financed. DG Water has reserved a budget for the financing of the water safety measures. Because DG Water has the perspective that they are only responsible for the financing of the water safety part, they will not finance the spatial planning measures. The province on the other hand has the perception that DG Water is client of the project, and that they requested that opportunities for the spatial planning should be seized. Because of this the province has the opinion that DG Water should also be responsible for financing a large part of the spatial planning measures.

Another difference in perception can be found in maintaining the natural environment in the weak link case. The nature conservation group Landschap Noord-Holland (LNH) is responsible for maintaining the natural area. The other actors like municipalities and the province have interests in increasing the recreation and tourism activities in the area, which can be damaging to the natural area. LNH tries to maintain the natural area, and also tries to increase the natural quality of the area. Therefore there is a difference in objectives. The municipalities have difficulties dealing with LNH. They have the perception that LNH can have much influence on the development of their spatial quality plans, by means of the Natura2000 and being owner of the area. When changes do take place in the natural environment, compensation for these measurements is necessary.

7.5.3 Relations

The Province of Noord-Holland (PNH) is responsible for the main project process. They are concerned with the project process and that it will lead to a successful outcome. PNH is the so called director of the project process. Therefore PNH is responsible for involving actors with interest in the project (especially the water board). The province also initiated workshops and other activities to involve the public in the project. Because PNH directs the project process, they are related to each of the actors involved. This relation with other actors mainly consists of constructing an integrated project plan. PNH is also concerned with developing spatial planning measures, and cooperates with municipalities, LNH, DCNH, and HHNK on this. They also try to gather financial resources with these actors to be able to finance the spatial planning measures.

The province is responsible for the project process, but DG Water is the end responsible of the project. Therefore DG Water has an important role in the final approval of the project plan. DG Water advices it’s Ministry about the developed project plan. Therefore PNH is dependent on DG Water, as they are developing the project plan. DG Water also develops policy and sets demands which the project should meet.

DG Water and the Water board HHNK are also related to each other. Both of these actors have interests in increasing the water safety. DG Water has given the water boards the task of developing the water safety plans. The water board receives a financial budget from DG Water to perform these measures.

Also the municipalities and LNH are related to each other, as they both have interests in developing the area around the coastal zone. The municipalities want to stimulate the recreation and tourism possibilities in the area, and increase the living quality standards. LNH wants to increase the quality of the natural environment. Together these actors have to construct an area development plan. The municipalities are also related to the interest groups in the region, as they represent their interests. For the gathering of financial possibilities for the spatial restriction measures, the municipalities are also related to DCNH. The DCNH plays an important role in searching for investors for the spatial planning in the region.

Table 10 provides an overview of the “ideal strategies” of actors for in the project “Kop van Noord-Holland”. From this table also the resource dependency relations between actors can be determined, which are discussed above. Below the table a short description of how to read the table is given.
7.5.4 Resources

Resources are modelled in DANA as instruments to reach the actors goals. Figure 27 provides an overview of the resource dependency between actors. Arrows are drawn when actors are dependent on a resource from other actors. This relation can be positive (Utility to gain) or negative (Utility to lose). The bigger the arrow, the stronger the relation between the actors is. From the figure it can be concluded that all the actors can gain a lot from each other. This is because the actors have in general the same perception and goals in the weak link project.

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**Table 10: Overview of Ideal Strategies Actors**

<table>
<thead>
<tr>
<th>Actor -&gt;</th>
<th>DGW</th>
<th>LNH</th>
<th>Muni</th>
<th>DCHN</th>
<th>PNH</th>
<th>HHNK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors:</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
</tr>
<tr>
<td>Spend budget for spatial development [PNH]</td>
<td>+</td>
<td>O</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Spend budget for water safety [DGW]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Develop and monitor policies [DGW]</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Develop water safety plans [HHNK]</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Approve project plans [DGW]</td>
<td>O</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Coordinate project proces [PNH]</td>
<td>+</td>
<td>+</td>
<td>O</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Contribute financially to spatial developments [Muni]</td>
<td>O</td>
<td>O</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Block spatial developments with Natura2000 reg.[LNH]</td>
<td>O</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>O</td>
<td>+</td>
</tr>
<tr>
<td>Use networks of relations [Muni]</td>
<td>O</td>
<td>O</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Block spatial developments by ownership natural area [LNH]</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Participate in proces [Muni]</td>
<td>-</td>
<td>+</td>
<td>O</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Use of independent financial budget [HHNK]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Search for financial support in region [DCHN]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

* Table 10 shows an overview of the ideal strategies of the actors in the project. If the actors follow their ideal strategies, they will get the best results in the project. From this table also the relations between the actors can be determined. In the columns the actors are stated. The rows represent actions an actor can perform. In the table the ideal action are given for each actor, valued from – (really don't want it) to + (really want it). By reading the table up-down it can be determined which actions an actor wants to take place in its ideal strategy. An example is for PNH, which wants that the DG Water makes budget available for the spatial developments for the project. From this it can be concluded PNH depends on DG Water’s financial resources, as they have a financial relation with each other. Another example is for the Municipalities, which don’t want LNH to use its Natura2000 regulation to maintain their natural area. Therefore it can also be concluded that these actors are in relation with each other, as they have discussion about the development of the coastal area.
One of the most important resources is the financial possibilities actors have. This is especially the case for DG Water and the province. DG Water has an important role in financing the water safety measures. Also the financial budget of PNH has some influence on the implementation of the spatial planning measures. The municipalities, DCNH and water board have little financial budget available for the spatial planning measures. Therefore they have little financial influence on the development of a high quality spatial area. But by combining their financial budget with the budget of the province the spatial planning measures are tried to be financed.

Knowledge and cooperation in the project is also an important resource. Knowledge can be of influence in developing the water safety- and spatial planning plans. Knowledge can also be a means to reach a certain objective, as for example with the municipalities, knowledge about the area can help in gaining support for the project. It is important for the development of a project plan, that the plans are supported by the region. The municipalities have an important role in creating support in the region, as they represent the interests of stakeholders in the region. The province also involves the region in the development of the project plan, as they organise workshops and publish the project plans for comments. During the interviews all the actors have indicated that knowledge can be of great importance in reaching their goals. The DANA analysis shows that knowledge does have some influence, but not much. This is probably because their goals are also depending on other instruments, which have greater influence.

Table 11: Output table DANA with overview use of knowledge actors

Table 11 shows that the use of knowledge is an important resource for actors. It is especially an important resource for LNH, Municipalities and DCNH, as they believe that their knowledge can contribute to the development of the project plans. For example LNH doesn’t want the municipality to use their knowledge, as this will contribute to the spatial developments.
For the PNH and HHNK their knowledge is a somewhat less important resource according to DANA. This can be explained by the fact that these actors have a higher responsibility in the project, in which they perceive their knowledge of being a less important resource to use during the process. This does not say that they will not use their knowledge during the process, as HHNK will also be responsible for developing the water safety measures.

Also an important resource in the project is the hierarchical position of the actors. This is mainly the case for DG Water and the province. DG Water is the end responsible for the developed project plan. In this way DG Water has an important vote in accepting the project plan and submitting it to the corresponding ministry. The province is responsible for the project process. They therefore have much influence on the success of the project and the development of an integrated plan, as they coordinate it.

The role of regulation is also an important instrument during the project. Because the coastal area falls under the Natura2000 regulation, LNH has the possibility to influence the spatial planning developments by means of this law. The Natura2000 regulation states that no changes can be made to the area, as it possesses special natural value. In this way LNH can reach their objective of maintaining the natural area. However this is not always the case, as water safety does always have the priority. The Dutch water law regulates that the safety quality of the dikes/dunes need to meet a certain norm. Because the weak link does not meet this norm, measures need to be taken to increase the water safety quality. These measures have priority in the project, but compensation for the natural area is obligatory. The HHNK is responsible for the safety measures. Table 12 with DANA output shows these findings of the role of regulation in the project. Because LNH is aware of the priority of water safety, they have a neutral perception about the water regulation. All the other actors perceive the Natura2000 regulation as a negative resource of LNH.

<table>
<thead>
<tr>
<th>Actor -&gt;</th>
<th>LNH</th>
<th>Muni</th>
<th>DCHN</th>
<th>PNH</th>
<th>HHNK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors:</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
</tr>
<tr>
<td>Block spatial developments with Natura2000 reg. [LNH]</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>O</td>
</tr>
<tr>
<td>Block spatial developments by ownership natural area [LNH]</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Use water wet regulation [HHNK]</td>
<td>O</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

Table 12: Output table DANA with overview use of regulations by actors

7.5.5 Conflicts

During the project there are not many conflicts between actors. This is mainly because the actors share the same perceptions about the project. One conflict is between DG Water and the province, which is about the financing of the spatial planning measures. The province has the opinion that DG Water should be responsible of financing the spatial planning measures, as they have given the task to develop an integrated project plan. DG Water on the other hand has the opinion that they are only responsible for the water safety, and that the province is responsible for the spatial planning part.

Also a conflict exists between the actors LNH and the municipalities together with the province. The municipalities and province want to increase the recreation and tourism in the area. This will effect the natural environment in the area, which LNH wants to maintain. LNH is property owner of the natural area and also possesses of the Natura2000 regulation. This helps them in maintaining the natural area. Therefore the municipalities and province have a more negative perspective against the Natura2000 regulation, as it creates difficulties for them to implement changes in the area. Table 12 provides an overview of the conflicts between actors.
An actor analysis is performed on the weak link “Kop van Noord-Holland”. Weak links in the Dutch coast are defined as areas that have to be strengthened before 2020 because of the rise of the sea level, higher frequency of storms and new safety measurements against floods. Also because opportunities have been identified to increase the spatial quality of the coastal area, an integrated project plan has to be developed.

Actors that have been analysed in the weak link project “Kop van Noord-Holland” are; DG Water, The Provincial Authority Noord-Holland, Water Board Hoogheemraadschap Hollands Noorderkwartier, Municipalities Zijpe and Den Helder, Development Company North Holland, and nature conservation group Landschap Noord-Holland. These actors are interviewed and analysed with the actor analysis method DANA. The purpose of this actor analysis is to identify the actor relation network, and perceptions of the actors on the weak link case.

All the actors share the perception that it is important to develop an integral plan. This will increase the water safety quality, but also increase the spatial quality of the area. Some differences in perspective can be identified. The first is a different perspective on the financing of the project plan. DG Water is responsible for the financing of the water safety measures. The province is responsible for the spatial planning measures. Only the province has the perspective that DG Water is also responsible for financing these measures, as they have given the province the task to develop an integral project plan. DG Water on the other hand has the perspective that they are only responsible for the water safety part, as this falls under their legal responsibility. A second difference in perspective can be identified between LNH and the municipalities (knowledge and budget) are considered as negative by LNH. On the other hand does the province and municipalities consider the actions of LNH (Natura2000 and area owner) as negative. This results in a conflict between these actors.

7.6 Conclusion actor analysis Spatial Restrictions

*To identify conflicts between actors the table with the ideal strategies for the actors is analysed. In this table the ideal strategies for each actor is identified. By reading the rows from left to right, differences between actions can be identified. These differences can be possible conflicts. The first conflict can be identified in the financial actions of DG Water and PNH. According to DG Water, PNH should be responsible for the financing of the spatial measures. PNH has the perspective that DG Water should also finance the spatial development measures and not only the water safety measures. The second conflict can be identified between the municipalities and LNH, which consists of the development of the coastal area. Actions of PNH and the municipalities (knowledge and budget) are considered as negative by LNH. On the other hand does the province and municipalities consider the actions of LNH (Natura2000 and area owner) as negative. This results in a conflict between these actors.

Table 13: Output table DANA with overview of conflicts between actors (*Textbox)

<table>
<thead>
<tr>
<th>Actor -&gt;</th>
<th>DGW</th>
<th>LNH</th>
<th>Muni</th>
<th>PNH</th>
<th>HHNK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors:</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
<td>ideal</td>
</tr>
<tr>
<td>Spend budget for spatial development [PNH]</td>
<td>+</td>
<td>O</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Spend budget for water safety [DGW]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Block spatial developments with Natura2000 reg.[LNH]</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>Block spatial developments by ownership natural area [LNH]</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>Use of independent financial budget [HKN]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Use knowledge of natural area [LNH]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Use knowledge of spatial planning [PNH]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Use knowledge about region [Muni]</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

12 http://provincie.zeeland.nl/veiligheid/zwakkeschakels/
In the weak link project, all the actors are related to each other. This is because the actors are willing to develop an integral project plan. For this cooperation between the actors is necessary. DG Water and the province have a special role in the project. DG Water is the final responsible actor in the weak link project. The province is responsible for the main project process. They are concerned with the project process and that it will lead to a successful outcome.

In the weak link project “Kop van Noord-Holland”, a couple of important resources can be identified:

- **Financial resources**: the most important resource in the weak link project. Everything is about the financial aspect to perform the developed measures for the weak link case.
- **Hierarchical position**: the position of DG Water and the province is of great important for the development of the project process. DG Water has the final vote in accepting the project plan, and the province is responsible for the construction of the project plan. Therefore the province has influence on the development of the project plan.
- **Regulation**: because the coastal zone falls under the Natura2000 regulation, not much is possible within this area. The coastal zone consists of special natural quality, which needs to be preserved. It is the responsibility of LNH that the natural area is maintained. But the Dutch Water law states that the quality level of the water safety needs to be increased. Therefore measures will be taken in the coastal area, as safety has the highest priority in the Netherlands. HHNK is responsible of implementing these safety measures.
- **Knowledge**: Knowledge is also an instrument to reach the objectives of the actors. The actors use their knowledge to develop water safety, and spatial planning plans. For developing an integral project plan cooperation between actors is necessary.

### 7.7 Validation actor analysis Spatial Restrictions

The validation of data for the actor analysis on the spatial restrictions case has been performed in the same way as for the floods directive case. Interviews are held with the selected actors, which are worked out by the researcher. The interview report is send to the actors for them to read and give comments. These comments are worked out, and in this way the data for the actor analysis is validated. The performed analysis is validated by means of a questionnaire. The analysis report is send to the actors which have been interviewed, and validated by filling in a questionnaire.
8. Evaluation of analysis and framework

In this chapter the evaluation of the master thesis research is performed. This consists of evaluating
the performed actor analysis on the selected cases, the developed framework and the performance of
an actor analysis in general. This is necessary for determining the quality of the analysis and research
and its usability. First the evaluation of the actor analysis of the Floods Directive case is discussed.
After that the evaluation of the actor analysis of the Spatial Restrictions case is discussed. Next the
developed selection framework for Grontmij is evaluated and finally the use of actor analysis. The
actor analysis and the developed framework are evaluated on the factors determined in chapter 5.6.

8.1 Evaluation actor analysis Floods Directive

In this subchapter the experiences of the Grontmij personnel and the researcher on the Floods
Directive case is discussed. The experience of the researcher with the execution of the actor analysis
method is discussed, and the perception of Grontmij on the use of the analysis method.

Concluding from the responses of the actors, the actor analysis report of the Floods Directive provides
a correct overview of the current actor network and problems, but it doesn’t give them new insights
into the actor network. By this the actor analysis is also validated. Because the actor analysis is
performed for the problem owner Grontmij, the fact that it doesn’t give the actors new insights into the
actor network is not that important. This indicates that the actors are already familiar and cooperating
with each other.

Grontmij expert are asked to evaluate the actor analysis for the Floods Directive through a
questionnaire. These experts are selected on their experience with actor analysis and their
contribution to the interviews. Based on the experience Grontmij and the researcher had with the
(TUDelft) Public Stakeholder analysis the factors determined in chapter 5.6 are evaluated. Table 14
provides an overview of the comments based on the factors:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Collected Data</td>
<td>Interviews were conducted and lots of literature was available about topic</td>
</tr>
<tr>
<td>Technical Validity</td>
<td>The analysis provides a good picture of the actor network, but the analytical quality of the analysis method is low.</td>
</tr>
<tr>
<td>Mach model with situation</td>
<td>Purpose of the actor analysis meets the purpose of the analysis method due to selection framework</td>
</tr>
<tr>
<td>Usefulness output actor analysis</td>
<td>The analysis provided new insights for the Grontmij personnel.</td>
</tr>
<tr>
<td>Utilization of the actor analysis</td>
<td>Because of the clear action steps and easy to use tools Grontmij personnel are positive about the use of the analysis method.</td>
</tr>
</tbody>
</table>

Table 14: Evaluation actor analysis floods directive

8.1.1 Evaluation of the method (TUDelft) Public Stakeholder analysis by Grontmij

From the responses of Grontmij personnel (gathered through questionnaires) it can be concluded that
they are positive about the use of the (TUDelft) Public Stakeholder analysis. Mainly the fact that the
method provides clear steps to perform, and easy to fill in tables are seen as an added value of the
analysis. In combination with the interviews the analysis provided new insights into the actor network
(like the current developments of the Floods Directive products or relations between actors). By
means of the tables and figures the information about the actor network was presented in a clear and structured way. The structure of the action steps seemed logical to them and executable. Therefore it can be concluded that Grontmij is positive about the use of this analysis method.
The (TUDelft) Public stakeholder analysis has an added value for Grontmij because the analysis is easy to perform and not so time intensive. Comparing the analysis with the Grontmij stakeholder analysis the method provides a more structured way to perform and increased insights into the actor’s characteristics. The analytical quality of the analysis is also higher. The analysis method provides a clear picture of the actor network, and is easy to communicate by means of the tables and figures. Also the fact that the analysis is flexible (some steps can be skipped and insights wanted can be adjusted) is indicated as an added value of the analysis method.

8.1.2 Evaluation of the method (TUDelft) Public Stakeholder analysis by researcher

The actor analysis method was selected by the researcher based on the goals for the analysis and the amount of time available for the analysis. The researcher was unfamiliar with the analysis case, and had to read some literature to get familiar. Once some knowledge was gained by the researcher, a brainstorm session together with some Grontmij personnel created a list of actors. By further researching the analysis case, the researcher was able to come up with a list of actors interesting to interview. The actor analysis method was very helpful in identifying relevant actors. Especially step 4 (Determine interests, objectives and perceptions) and 6 (determine the consequences of the findings) of the analysis where helpful in identifying the relevant actors.

By inviting the actors for an interview, more knowledge could be gained for the actor analysis. The researcher found the interests and perceptions table in step 4 very helpful to construct questions for the interview. The table provides an overview of which information is needed from the actors. All the relevant information needed for the analysis was gained from the interviews. Therefore the researcher finds the version of the (TUDelft) Public Stakeholder analysis with interviews having an added value for the analysis. From the interviews information can be gathered which is difficult to find in the literature. Especially for determining the perceptions of actors of the case, an interview is necessary. When performing a quick scan on an actor network, the analysis without the interviews is sufficient. The steps of the actor analysis method are easy to perform. The steps are well explained and don’t take much effort to execute. The tables provided in the steps are simple and provide a clear overview of the provided information. The only difficulty when filling in the tables was to try and keep them as clear as possible. When too much information is provided in the tables, they become unclear to read. Because of the tables/matrixes the analytical quality of the method is low. It was therefore sometimes difficult to stay objective and not to make assumptions about actors which weren’t stated, as the method expects the analyst to perform the analytical steps.

The (TUDelft) Public Stakeholder analysis has an added value over the (Grontmij) stakeholder analysis. The methods are somewhat similar, but the (TUDelft) Public Stakeholder analysis is a more elaborate analysis that provides more insights into the actor characteristics. It provides a structured way to perform the analysis and the steps are easy to perform. Also the analytical quality of the analysis is higher, even though it is similar in its use as the (Grontmij) stakeholder analysis. The method is flexible in its use, as it is possible for the researcher to add and remove wanted perspectives/information. The steps are clear and the tables provided help the analyst in structuring its information. The method is not that time intensive, and with the extension of the interviews the analysis can provide a clear and in-depth analysis.

8.2 Chapter reflection actor analysis Floods Directive

In chapter 6 an actor analysis is performed on the project case Floods Directive. By performing an actor analysis the use in practice of the analysis method is tested, and also information is gained for Grontmij about the actor network. The performance of the actor analysis is also a test for the functioning of the actor analysis framework discussed in chapter 5. It tests if the framework selects the correct method for the project case. This chapter also provides an answer on the sub-question:

6a) Can the framework usefully be applied to investigate the actor network for the Floods Directive in the Netherlands for Grontmij?
The Floods Directive is a new regime proposed by the European Union on 23 October 2007 (Directive 2007/60/EC). This Directive requires member states to assess if all the water courses and coast lines are at potential risk from flooding, to map the flood extent, assets and humans at risk in these areas, and to take adequate and coordinated measures to reduce this flood risk (European Commission Environment). The purpose of the Floods Directive is to reduce the negative effects caused by the floods (e.g. amount of victims and financial consequences of a flood in Europe (Europa Decentraal)).

Actors that play a critical role in the implementation of the floods directive are: DG Water, Union of Water board, Waterdienst, Water Boards, Provincial Authorities, and safety regions. These actors play a role in implementing the policy, or developing a product for the floods directive. The tasks of the actors concerning the floods directive are all clear. DG water is responsible for the implementation of the floods directive, and creation of the products. The water board is concerned with water safety, the province with spatial planning and the safety region with the evacuation plans.

The framework helps in determining a possible actor analysis method which is suitable for the project case. Based on the purpose of the analysis a suitable method can be selected. The steps help the analysis in exploring the project setting in which the analysis is needed. This results in determining a suitable analysis method for the project case. In this case the (TUDelft) Public stakeholder analysis is a suitable method to perform due to the fact that the method provides insights into the perspectives and relations between actors. Also the method is flexible in its use for which the method can be adjusted to some other specific insights wanted in a market exploration.

8.3 Evaluation actor analysis Spatial Restrictions

In this subchapter the experiences of the Grontmij personnel and the researcher on the Spatial Restrictions case is discussed. The experience of the researcher performing the actor analysis method is discussed, and the perception of Grontmij on the use of the analysis method.

Grontmij expert are asked to evaluate the actor analysis for the Spatial Restrictions case through a questionnaire. These experts (a total of three) are selected based on their experience with actor analysis and their contribution to the interviews. Based on the experience Grontmij and the researcher had with DANA the factors determined in chapter 5.6 are evaluated. Table 15 provides an overview of the comments based on the factors:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Collected Data</td>
<td>Interviews were conducted and lots of literature was available about topic</td>
</tr>
<tr>
<td>Technical Validity</td>
<td>The analytical quality of the DANA analysis is high due to its modelling approach. The analysis provided a good picture of the actor network.</td>
</tr>
<tr>
<td>Mach model with situation</td>
<td>Purpose of the actor analysis meets the purpose of the analysis method due to selection framework</td>
</tr>
<tr>
<td>Usefulness output actor analysis</td>
<td>The actor analysis provided some new insights into actor perceptions and strategies, but in overall these insights where little.</td>
</tr>
<tr>
<td>Utilization of the actor analysis</td>
<td>The steps of the DANA analysis are complex and time intensive. The construction of models and the output tables are difficult to understand.</td>
</tr>
</tbody>
</table>

Table 15: Evaluation actor analysis spatial restrictions

8.3.1 Evaluation of the method DANA by Grontmij

The Grontmij experts have different opinions about the DANA analysis method. In general the DANA analysis didn't provide new insights into the actor network. The conclusions of the analysis were known by the experts because they are familiar with the actor network. Some expert due find the results from DANA useful in structuring the results and also the analysis of ideal strategies is found useful.
The Grontmij experts have difficulties in understanding the output tables of DANA. The layout of the tables is confusing and doesn’t provide a clear overview of the results. The analyst needs to spend some effort in determining the results from the data. Therefore the analysis becomes time intensive. Also the construction of the perception models is difficult to understand. Some experts have interests in modelling and therefore are more positive about the use of DANA. The identification of ideal strategies by DANA and how actors respond to those strategies are found useful. On the other hand the experts are not sure if the models are suitable to present to clients because of they are difficult to read.

Even though the Grontmij expert finds that the DANA analysis provides a credible analysis they have doubts if it will be useful in practice. Some experts find the DANA method complex and time intensive to apply, and also that the output of DANA is difficult to understand. Because the method didn’t provide new insights into the actor analysis network, the experts have doubts about the added value of DANA. Others think that DANA may be helpful in a complex case, when relations and characteristics of actors need to be analysed.

8.3.2 Evaluation of the method DANA by researcher

For the use of the DANA analysis method the researcher had to get familiar with the DANA software to create the perception diagrams. This was done by means of a literature study, and by providing support during a DANA practicum class at the Technical University of Delft. In this way the researcher was able to develop the perception diagrams for the actors. Because the construction of the perception diagrams is a key element in the DANA analysis method, it is important to get familiar with the DANA software.

Once the researcher was familiar with the DANA software and perception diagrams, the analysis could be performed. Interview questions were developed and actors where invited for an interview. Interviews can be helpful for the analysis to gather the specific information wanted for the analysis. This information could also be gathered by a literature study, but for this analysis the literature study didn’t provided enough data. Because DANA needs specific data input to create the perception diagrams, the questions for the interview were easy to develop.

After the data was gathered the DANA perceptions diagrams could be constructed. The construction of the models wasn’t that difficult. The only problem experienced by the researcher is that once the models became too extended, the computer had problems performing the analysis. This is due to the fact that when an analyst wants to simulate the perceptions close to reality, the models become complex and large. This causes the analysis time to increase. Therefore the models needed to be simplified to be able to perform the analysis. As an example, figure 28 shows the first perception model of the actor LNH. This model needed to be simplified for the performance of the analysis.
The downside of the DANA analysis method is that it is time consuming. Especially in the beginning, as the analyst needs to get familiar with the DANA software. Because time can be an important issue for Grontmij, it may be a reason not to choose DANA. Also the fact that DANA didn’t provide new insights compared to the gut-feeling analysis may be a reason not to choose DANA (discussed in chapter 8.3.3). In this way the clear added value of DANA couldn’t be presented. The added value of DANA lies in structuring the information and providing a high quality analysis. DANA could also be used in a workshop setting, as the perception models could be used in an interactive game. The question if DANA is a useful method to use by Grontmij really depends on the perception of the analyst. The analysis method has shown its quality by constructing a useful analysis, but is time consuming compared to the gut-feeling analysis.

8.3.3 Comparison ‘Gut-Feeling’ analysis vs DANA:

The researcher has written an actor analysis for another project about the same project case (Annex L). This analysis consists of a ‘gut-feeling’ analysis based on the information gained from interviews with actors. To determine the added value of DANA the results of both analysis can be compared with each other. Table 16 provides an overview of the conclusions gained by both of the analysis:

<table>
<thead>
<tr>
<th>DANA Conclusions</th>
<th>‘Gut-Feeling’ Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of Integral Plan very important for the Netherlands. Cooperation in necessary within the process.</td>
<td>Cooperation is very important to reach the goal of an integral plan.</td>
</tr>
<tr>
<td>Difference in perception between DG Water and the Province about responsibilities and financing spatial developments.</td>
<td>Lots of discussion around financial responsibilities of actors, mainly between DG Water and the Province</td>
</tr>
<tr>
<td>Difference in perception about use natural area between Municipalities, Province and LNH.</td>
<td>LNH tries to maintain their natural area, for which the municipalities have different ideas with.</td>
</tr>
<tr>
<td>Important resources of actors are financial possibilities, hierarchical position, regulation and knowledge.</td>
<td>Important resources of actors are financial possibilities, responsibilities and knowledge.</td>
</tr>
<tr>
<td>DANA Conclusions</td>
<td>‘Gut-Feeling’ Conclusions</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Province and Municipalities are mainly responsible for spatial quality.</td>
<td>Water sector less involved in spatial developments and mainly responsible for water safety.</td>
</tr>
<tr>
<td>Natura2000 regulation is found as a problem, it blocks certain measures and compensation is necessary.</td>
<td>Natura2000 regulation is seen as an obstacle, but needs to be dealt with. Safety is most important.</td>
</tr>
</tbody>
</table>

*Table 16: Comparison conclusions DANA and Gut-Feeling analysis*

From table 16 it can be concluded that the conclusions of both analyses are very familiar with each other. DANA confirms the conclusions made in the other analysis, but no new insights were gained with the DANA analysis. This can be explained by the fact that afterwards the actor network wasn’t that complex as anticipated. The actors all shared the same interests for which not many conflicts could be identified. On the other hand DANA does provide a clear relations diagram and an analytically sound analysis.

Because DANA didn’t provide new insights compared to the gut-feeling analysis, it is questionable if DANA is a good method for Grontmij to use. The added value of DANA is that it provides a high quality analysis with the use of output tables and matrices. DANA can be very helpful if the analyst doesn’t have much knowledge about the actor network, because the software performs the analysis. Also DANA can be very helpful in communicating the results to the actors. The different perceptions can be communicated to the actors and also the possible reactions of actors on different strategies performed by one actor can provide helpful insights.

### 8.4 Chapter reflection actor analysis Spatial Restrictions

In chapter 7 an actor analysis is performed on the project case weak link “Kop van Noord-Holland” for the Spatial Restrictions project of Grontmij. By performing an actor analysis the use in practice of the analysis method is tested, and also information is gained for Grontmij about the actor network. The performance of the actor analysis is also a test for the functioning of the actor analysis framework discussed in chapter 5. It tests if the framework selects the correct method for the project case. This chapter also provides an answer on the sub-question:

6b) Can the framework be usefully applied to investigate the actor network for the weak link case “Kop van Noord-Holland” for the Spatial Restrictions project Grontmij is involved in?

Weak links in the Dutch coast are defined as areas that have to be strengthened before 2020 because of the rise of the sea level, higher frequency of storms and new safety measurements against floods. Also because opportunities have been identified to increase the spatial quality of the coastal area, an integrated project plan has to be developed.

Actors that have been analysed in the weak link project “Kop van Noord-Holland” are; DG Water, The Provincial Authority Noord-Holland, Water Board Hoogheemraadschap Hollands Noorderkwartier, Municipalities Zijpe and Den Helder, Development Company North Holland, and nature conservation group Landschap Noord-Holland.

The framework helps in determining a possible actor analysis method which is suitable for the project case. The steps help the analysis in exploring the project setting in which the analysis is needed. This results in determining a suitable analysis method for the project case. By means of the purpose DANA is the suitable actor analysis method to perform, as it provides specific insights into the perspectives and relations between actors. By means of the elaborate analysis of DANA more insights can be gained in the project process and the perspectives of actors on this.
8.5 Evaluation actor analysis Framework

Grontmij experts and outside experts are asked to evaluate the actor analysis for the Spatial Restrictions case through a questionnaire. These experts (a total of six) are selected on their experience with actor analysis. Based on the experience of the experts and the researcher the factors determined in chapter 5.6 are evaluated. Table 17 provides an overview of the comments based on the factors:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>The framework is difficult to read</td>
</tr>
<tr>
<td>Informative</td>
<td>The framework provides useful information about the actor analysis methods and the selection criteria</td>
</tr>
<tr>
<td>Completeness</td>
<td>The framework possesses all the relevant criteria and factors mentioned in interviews</td>
</tr>
<tr>
<td>Value</td>
<td>The framework can be of value when selecting an actor analysis and as a reference to a client.</td>
</tr>
</tbody>
</table>

Table 17: Evaluation score actor analysis framework

The actor analysis framework was sent to the Grontmij personnel interviewed by the researcher for the development of the framework for validation. A questionnaire was constructed in which the perspective and comments of the Grontmij personnel about the framework is gathered. Their comments combined with the expert reviews and experiences of the researcher were used to evaluate the actor analysis framework.

The overall conclusion of the reaction of Grontmij personnel about the actor analysis framework is positive. Especially the overview of the actor analysis methods and purposes of the analysis methods are seen as useful. The framework provides steps which helps the analyst in selecting a possible actor analysis method for a project. The steps and criteria presented in the framework are found relevant to the respondents. These represent the criteria and factors mentioned in the interviews.

The respondents are positive about the actor analysis framework, as it provides them insights into different actor analysis methods and the selection of them. Some found the presentation of the framework difficult to read, others not. Especially the presentation and added value of step 1 was not always clear for the respondents. Some found the model of Step 1 difficult and not clear to read. This is mainly because of the general answers on the questions presented in the model, and the relation between these questions. The respondents have indicated that they are already thinking about the subjects presented in step 1, and that it therefore doesn’t have an added value to them.

There are also some differences in opinion about the presentation of step 2 of the framework. Some actors find the framework difficult to read, while others are somewhat more positive about the model. The model of step 2 consists of a logical setup of decision steps, but the presentation is not really clear for the Grontmij personnel. Although some find the framework difficult to read, almost all the respondents are willing to use the framework. Their main reason to use the analysis framework is to identify a suitable actor analysis method, or that the framework provides feedback in the choice of an actor analysis method. They can use this framework as a reference to a client. One respondent didn’t want to use the actor analysis framework, as he believes that it doesn’t have an added value for him. This is because this respondent is already very active with performing an actor analysis. The analysts who aren’t that familiar with actor analysis find that the framework has an added value to them.

The actor analysis framework also provides different actor analysis methods which are possible to use during a project. This is seen as an added value of the framework. When the respondents are asked which actor analysis methods they are willing to choose, almost all of them are willing to use the (Grontmij) and (TUDelft) stakeholder analysis. The reason for this is that these methods are easy to perform. The respondents are less willing to use the more 'complex' methods, only when a client asks for this specific method or the method is needed in a specific situation. The main reason for this is that the analysis methods are complex and time intensive.
8.6 Evaluation use actor analysis in practice:

In this chapter the use of an actor analysis in practice is discussed. It is evaluated what eventually determines the use of an actor analysis. This is evaluated from the experience gained by using the selection framework and also the insights gained from Grontmij personnel.

The criteria determined in the framework are seen as criteria that affect the choice and use of an actor analysis. These criteria are validated and explained during this research which are; time, purpose, information needed and analytical quality. But there are also other factors that play a role in determining an actor analysis method. These are factors that are difficult to measure, but in the end play a crucial role in the selection. They are more related to the role of the analyst in the analysis. Therefore the eventual selection and use of an actor analysis method is based on some practical and analytical factors, but also depends on the insights of the analyst himself.

The extra factors that also play an important role in the selection/use of an actor analysis method are:

- **Request and position of the client:** It is determined that the request of the client plays an important role when selecting an actor analysis method. When a client requests a quick scan method, a high analytical analysis is not appropriate to use. When the client doesn’t have a specific request, the analyst himself has to determine what a suitable analysis method is to perform. But also the insights requested from a client are important which method to select. Eventually the analysis has to provide insights which are important for a client to know. The position of the client relates to how a client values an actor analysis. If the client has the idea that an actor analysis is obligatory, he probably doesn’t want an elaborate analysis. If the client has high value of the involvement of actors a different actor analysis then stakeholder analysis might be suitable.

- **Communication of the analysis results:** how the analyst wants to communicate the results of the analysis also plays a role in determining a suitable actor analysis method. If a more direct approach of presenting the results to actors is wanted, an analysis of high analytical quality seems to be most appropriate. These methods present the results straight from the analysis which is backed up by mathematical or statistical findings. These results can be directly communicated to the actors, which may find these results “blunt”. The analyst can always choose to neutralize these results, but the analysis from the method shows how it is in reality. The analyst can also choose to use a method where he involves his own interpretation like stakeholder analysis. With this method the analyst is free in presenting the analysis output. The way of communicating the analysis output can affect the perspectives of actors. When a ‘blunt’ approach is used, this may affect the actors in a negative way in which they are offended by the results, or did not mean it in such a matter. It is therefore wisely to always verify the results with the actors, before presenting it to others.

- **Type of Analyst:** not only the requirements of the actor analysis method determines which method is suitable in a situation, but also insights from the analyst himself are important. This factor can be divided into two different aspects:
  - *The knowledge and experience of the analyst:* when an analyst has lots of knowledge and experience in an actor environment, the analyst is more than capable of performing an actor analysis by himself. In this situation the analytical quality has no added value in the analysis results. The method does provide a structured way to perform the analysis, but the analyst may also be capable of performing the analysis in his own way. The knowledge of the analyst into the actor network is so high that a quick scan of the network is enough for him to determine the wanted insights. Also the experience of the analyst may serve as a strong argument for the analysis results. When the analyst doesn’t have much experience (or is new) with the actor environment, the analytical quality of the analysis does have an added value. In this situation it is important to have a high quality analysis to be able to underpin the findings. When a low analytical method is used in this situation, there is more room for mistakes and own interpretation of the results by the analyst. This will result in a lower quality analysis and increases possible errors. This is not wanted, not in theory but also not in practice.
  - *The affinity of an analyst with the method:* this factor has influence on the selection of an actor analysis method. When an analyst has no affinity with mathematical models, the
barrier to use that method will be much higher then when he does have affinity with the method. The analyst will be less willing to use the method because he has to invest more time in getting to know and performing the analysis. If another method is also suitable in this situation, he will be more willing to use that model. When an analyst does have affinity with the method, he will consider it to be more challenging (in a positive way) to use the method.

- **The environment:** this factor is related to the actor environment, meaning with what kind of actor network the analyst is dealing with. This factor can also be divided into two aspects:
  - **Type of actors:** with what kind of actors are you dealing with. This can be important when for example a large unorganised actor group needs to be involved into the project/process. In this situation it is impossible to interview all the different people involved and therefore an analysis method like Q-Methodology is needed to determine the perspective and interests of the group. Also the use of DANA with large groups (> 15 actors) will not be suitable, as the analysis becomes too large and complex.
  - **Complexity of the actor network:** when an actor environment isn’t that complex (for example 3 actors) it is not necessary to perform a heavy analysis. In this situation the analyst himself should be capable to make the analysis or with the help of the stakeholder analysis. When the actor environment becomes more complex, an analysis method can be useful to structure the information and provide insights. With high complex environments it is almost impossible for an analysis to keep an overview of the network, in which an analytical method has an added value. If a network is dynamic or static doesn’t have influence on the selection of a method. The analysis always takes one certain timeframe of in the actor environment. When it is a very dynamic environment the analyst needs to take into account to perform the actor analysis multiple times during the project/process.

These criteria and factors are all relevant in determining when to use an actor analysis method. Table 17 provides an overview in what situation an actor analysis method is suitable to use. The first criteria are determined in the framework and discussed in chapter 5. The other factors which have been discussed above are also valued and presented in table 18.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(Grontmij) Stakeholder Analysis</td>
<td>Low</td>
<td>Explore characteristics</td>
<td>Low</td>
<td>Low</td>
<td>Tables and Matrixes</td>
<td>High</td>
<td>&lt; 15 Organised Groups</td>
<td>Low</td>
</tr>
<tr>
<td>(TUDelft) Public Stakeholder Analysis</td>
<td>Medium</td>
<td>Explore perceptions</td>
<td>Medium</td>
<td>Medium</td>
<td>Tables and Matrixes and relation diagram</td>
<td>Medium</td>
<td>&lt; 15 Organised Groups</td>
<td>Low / Medium</td>
</tr>
<tr>
<td>Q-Methodology</td>
<td>High</td>
<td>Explore perceptions</td>
<td>High</td>
<td>High</td>
<td>Statistical Output</td>
<td>Low</td>
<td>Large Unorganised Groups</td>
<td>High</td>
</tr>
<tr>
<td>Metagames</td>
<td>High</td>
<td>Conflict Resolution</td>
<td>High</td>
<td>High</td>
<td>Strategic scenario maps</td>
<td>Low</td>
<td>&lt; 5 Organised Groups</td>
<td>High</td>
</tr>
<tr>
<td>DANA</td>
<td>High</td>
<td>Explore perceptions</td>
<td>High</td>
<td>High</td>
<td>Perception models and output tables with differences in perceptions and relations</td>
<td>Low</td>
<td>&lt; 15 Organised Groups</td>
<td>High</td>
</tr>
<tr>
<td>Social Network Analysis</td>
<td>High</td>
<td>Explore actor network</td>
<td>High</td>
<td>High</td>
<td>Maps of Actor relations</td>
<td>Low</td>
<td>&gt; 15 Organised Groups</td>
<td>High</td>
</tr>
</tbody>
</table>

*Table 18: Overview score actor analysis methods on criteria and factors from evaluation*

The added value of using an actor analysis is that it provides a clear overview of the parties involved during the project/process. This can help in identifying risks and opportunities in an actor environment. Also by identifying relevant parties with their characteristics the cooperation between these parties can be increased and conflicts can be solved. An actor analysis is a tool for an analyst to structure information and creates understanding about actors. The use of an actor analysis can stimulate the cooperation process. An actor analysis can be performed in different phases in a project/process, for which different insights into the actors are wanted.
8.7 Final version actor analysis framework

Based on the comments from evaluation and expert judgements some adjustments to the actor analysis framework are made. This results in the final actor analysis framework version for this research, which is shown in figure 29 and 30. First the new versions of the steps are shown and secondly the adjustments will be explained by the researcher.

**Figure 29: Step 1 final version actor analysis framework**
The layout of the actor analysis framework hasn’t been changed due to the simple presentation of the different criteria and actor analysis methods. What made the framework somewhat difficult to understand, were the criteria around the selection process (access to information and process phase). Therefore these two criteria are moved out of the second step of the framework. In this way step 2 is easier to understand and the purpose of the analysis becomes a clearer key criteria in selecting an actor analysis method. In the validation and evaluation the criteria time, purpose, information needed and analytical quality where all determined of being important for the selection. The factors determined in chapter 8.6 are not implemented into the framework, as these are insights that an analyst has to determine for himself.

It is also determined that the criteria’s ‘access to information’ and ‘process phase’ aren’t direct criteria as first determined in chapter 5.5. Here direct criteria are labelled as ‘criteria which directly influence the choice of an actor analysis method’. Although these two criteria still have an important role in determining an actor analysis method, they are related to more superior criteria. The process/project phase is removed from step 2 because eventually time determines which method to choose. It doesn’t really matter in which process/project phase an analyst is situated in, each of the different phases the criteria time determines which actor analysis method to choose. For example when an analyst is in the exploration phase, and a low amount of time is available, the analyst will select a quick scan method. But when the analyst is in the exploration phase, and much time is available, the analyst can choose a different actor analysis method. Time therefore determines which actor analysis method is suitable, not the process/project phase. But process/project phase is still important to take into consideration to determine the environment in which you are located in.
For the criteria access to information it is considered that this is more suitable to be determined in the first step of the framework. In the first step the analyst has to think about which types of actors are involved in the problem. The next thing to determine is how to access these actors. It is therefore a logical place for the criteria ‘access to information’ to be located after the identification of the types of actors. Also access to information is related to the information needed for an actor analysis method, and for what purpose the analyst wants to use the information. Even if an actor can be directly accessed, still the purpose of the actor analysis and the information needed for the method eventually determines which actor analysis method to choose. Also when an actor cannot be accessed directly, this doesn’t mean that the information about that actor can be retrieved from other information sources (literature). So because the access to information criteria doesn’t have a clear direct effect on the choice of actor analysis method, and it makes the selection framework more difficult to understand, the criteria is moved to step one of the selection process.

Both of the criteria ‘access to information’ and ‘process/project phase’ are now determined in the first step of the selection process. This reduces the complexity of the actor analysis framework, which makes it easier to use by an analyst. Both criteria still have an important role in selecting an actor analysis method, and therefore the analyst need to be aware of these facts.

8.8 Conclusion of evaluation:

In this chapter the actor analysis performed on the research cases and the developed actor analysis framework is evaluated. The evaluation is performed by means of questionnaires, filled in by Grontmij experts. The evaluation is important to determine the usability of the actor analysis framework and methods.

Chapter 8 provides an answer on research sub-question:

5) How does the actor analysis framework function in practice?

The actor analysis framework provides an overview of different actor analysis methods and criteria to select a method. The framework consists of a flowchart type of diagram, in which some selection steps need to be performed to choose the most promising actor analysis method.

The main criteria in selecting an actor analysis method are purpose, time and information needed for the analysis. Based on these criteria (and also others) an actor analysis method can be selected. The framework is tested on two different project cases for which an actor analysis was needed. Due to the characteristics of each case, a different actor analysis method has been chosen. For the Floods Directive case the (TUDelft) Public Stakeholder analysis is performed, and for the Spatial Restrictions Case the DANA method has been preformed. In both of these cases the selected actor analysis method was suitable to perform the actor analysis. Mainly because of the purpose of the analysis a suitable actor analysis method could be chosen. In this way the framework really helped the analyst in selecting an actor analysis method.

Based on the positive responses of Grontmij expert on the framework it can be concluded that the actor analysis framework has an added value for Grontmij. By means of an overview of important criteria determining an actor analysis method, but especially the overview of the different actor analysis methods is found very helpful. Some experts have trouble in understanding the steps of the framework, for which it may needs to be further simplified. But in general the framework provides a clear overview of the selection process for an actor analysis method.
8.9 Chapter reflection on research

In this chapter the evaluation of the performed actor analysis and framework is discussed. The evaluation is necessary to determine the quality and added value of the framework and actor analysis. The evaluation is the final step to perform for the research. The complete actor analysis research has been performed and conclusions of the research can now be written.

Figure 31: Current phase in actor analysis research
9. Research Conclusion and Recommendations

In this chapter the conclusions and recommendations of the study are presented. First the research question is answered. Second some recommendations based on the conclusions are discussed.

9.1 Conclusion

The aim of this research was to investigate actor analysis and how its methods could be used in practice. An actor analysis is a method that provides insights into the characteristics and perspectives of one or multiple actors involved in a decision making process. Actors are those parties that have a certain interest in the system and/or that have some ability to influence that system, either directly or indirectly.

The main research objective of the research project is to explore:

*How can the use of an actor analysis method in practice be improved, and what is the added value of an actor analysis for a company like Grontmij?*

Now a day the incentive towards including relevant parties into projects/process has increased. Decision makers and organizations find it important to involve relevant parties in their problem/process, as this will lead to better outcomes of the process. The actor analysis helps in identifying risks related to actors during the project and stimulates cooperation. Therefore the use of actor analysis has increased over the years. The actor analysis method that is most often used in practice is the stakeholder analysis. This is because of the easy to use tables and matrixes provided in the analysis method.

In science lots of other actor analysis methods have been developed over the years. In science the analytical quality is very important, for which the stakeholder analysis provides low analytical results. In different research domains and for different purposes, actor analysis methods have been developed. This research investigates if some of these methods are suitable to use in practice and what determines if a method will be used or not.

A problem with actor analysis methods is that there are so many different methods available, that it becomes difficult for an analyst to select the most appropriate method for his situation. There is no overview available of the characteristics of the different methods. In this research a selection framework is developed which provides an overview of (a selection of) different actor analysis methods and the criteria and factors that are important for selecting an actor analysis method. The framework provides support in the selection of an actor analysis method. This solves the problem of the many available actor analysis methods and helps an analyst in selecting a most appropriate method. The actor analysis methods are selected on their regularly use in science, promise for practical use and experience of the researcher.

Another problem with actor analysis methods is that they are often complex in its use. Many analysis methods make use of mathematical equations or statistical analysis. This creates a barrier to use these methods in practice, as analysts often do not possess of the required skills or don’t have enough time (to get familiar) for such an elaborate analysis. Therefore stakeholder analysis is a popular method to use in practice because of its simplicity. In this research a selection of actor analysis methods is analysed and described. The different steps to perform the analysis are identified and examples of the method are shown. This provides the analyst with insights into the method, which may lower the barrier to use the analysis method.

The main advantage of the more elaborate actor analysis methods over stakeholder analysis is the analytical quality. The analytical quality ensures a high quality analysis that in some situations in practice is necessary. These situations can be that the client requests a high quality analysis, the analyst isn’t familiar with the actor network or the actor network is very complex. In these situations the
analyst doesn't have enough knowledge or insights into the network to make a quality analysis. The possibility of making errors or wrong assumptions about the results increases. A high quality method performs the analysis for the analyst and therefore reduces the possibility of errors, which is not the case for stakeholder analysis. The actor analysis helps the analyst in structuring the information and provides logically steps to perform. In stakeholder analysis the analyst has to make own assumptions about results and has to connect the results of the analysis to each other.

But concluding from the practical analysis the analytical quality of a method is not always necessary. In some situations the experience and knowledge of an analyst is enough to make a quality analysis. When the analyst has lots of experience in the actor environment he is more than capable of identifying the actor characteristics on his own (or with help of stakeholder analysis). A high quality analysis will verify his analysis results, but in many cases will not provide the analyst with new insights into the actor network. Also when the complexity of the actor network is not high, a high analytical method is probably not needed. In this situation it is easy to create an overview of the actor environment with their characteristics that is not necessary to perform an elaborate analysis. In some situations also time determines which method is suitable. The more elaborate actor analysis methods are more time intensive and in some situations not suitable.

The conclusion of the research is that the use of an actor analysis in practice can be improved by providing more insights and information about the available actor analysis methods. An actor analysis is a tool for analysts to gain insights into actor characteristics, networks of relations and helps in structuring information. The developed actor analysis framework helps the analyst in selecting a most appropriate actor analysis method and in determining the actor environment. Insights into the different actor analysis methods are provided by a literature study. By providing information about an actor analysis method more insights are gained into the methods. This may lower the complexity and the barrier to use this method. The added value for Grontmij is that the more elaborate actor analysis methods provide a quality analysis in situations when this is needed. The eventual selection of an actor analysis method depends on the criteria identified in the framework, but also on the experience and insights of the analyst himself.

This research has identified 6 actor analysis methods that are suitable to use for Grontmij. This increases their scope of insights into actor characteristics and increases their capacity of offering actor analysis to clients. In practice this may result in a more intensive use of the stakeholder analysis but in some situations the analytical quality may have an added value and the more elaborate actor analysis will be suitable to perform. Also the selection of actor analysis methods provides Grontmij with a possibility to marketing the concept of actor analysis. The selection of actor analysis methods provides Grontmij with the possibility to provide in-depth analysis on multiple aspects.

9.2 Recommendations:

In this chapter recommendations based on the results of the research are given. These recommendations are divided into recommendations for Grontmij and science.

Recommendations for Grontmij:

- It is recommended that Grontmij uses the developed actor analysis framework for this research. The framework supports analysts in selection the most appropriate actor analysis method and has proven its use in practice. Also the framework provides analysts with a validation of the choice of actor analysis method.
- Instead of using the Stakeholder analysis it is recommended that Grontmij analysts use the (TUDelft) Public Stakeholder analysis. This analysis is somewhat similar to the Stakeholder analysis, but provides a higher quality analysis. The steps of the analysis are easy to perform and logically interconnected. By using the (TUDelft) Public Stakeholder analysis the analysts are provided with an easy to apply analysis method which provides good quality.
- The other actor analysis methods presented in the framework still needs to be taken into consideration. In some cases the (TUDelft) Public Stakeholder analysis isn’t suitable to perform. This may be because of the purpose of the analysis or the request of the client. These actor analysis methods provide a high quality analysis and provide in-depth insights for specific purposes. When a situation arises that one of these actor analysis methods is
suitable, Grontmij can offer to execute the actor analysis. In this case the analyst needs to invest some time into getting to get familiar with the actor analysis method.

Recommendations for science:

- To increase the use of the developed actor analysis methods, more attention should be spend on the explanation of the analysis method, and how to use it. For stakeholder analysis this is done in an elaborate way, and therefore makes it more easy to use. The practical findings in this research could help in increasing the practical use of the method.
- The usability of the actor analysis should be improved. Some methods make use of difficult statistical analysis or mathematical equations. This can still be done, but the usability of the method should then be increased. For example by providing a graphical interface where the analyst has to fill in the data input. This has been done for Q-methodology on the website www.qmethodology.net. This increases the usability of the analysis method, and therefore also stimulates the use in practice.
- Investigate which other actor analysis methods are successfully used in practice: In this research the use of Stakeholder analysis is discussed as a method being performed in practice. It is therefore not said that every company uses this actor analysis method. It may be interesting to investigate what other actor analysis methods are being used by companies. The barrier for science is lower to investigate different practical methods, as companies are more willing to show their methods for objective, scientific research.
- Extent the study to follow-up actions after an actor analysis: In this research some possible follow-up actions are identified, mainly consisting of strategies to use. It provides a start in identifying follow-up actions, but this still needs be more elaborated. From the domains of project management or decision making the steps to perform after an actor analysis may be expanded.

9.3 Reflection on research approach:

In this chapter the researcher reflects on the decisions made during this research and the final results of the research. Now that the insights are gained into the theory and practice of actor analysis, would this have lead to a different approach of the research when this was known in advance?

In the opinion of the researcher the results of the research are useful for both the theory and practice. The research identifies different actor analysis methods that can be used in practice. From the positive reactions of Grontmij personnel about the insights into these methods it can be concluded that this is an added value of the research. Also the insights into the current problems with actor analysis and the practical needs, the Technical University of Delft can use these insights to improve their actor analysis methods. This is what the researcher wanted to achieve with the research, to provide both worlds with new insights into each other.

What helped during the master thesis research was a clear research approach. In this approach it was identified what steps to perform during the research, and which results should be gained from these steps. Basically the structure of this report provides a good overview of the research approach. In this way a clear plan of action was created.

The researcher has chosen to use the work of two PhD studies as the core of the theoretical review on the actor analysis. This was mainly because the researcher had difficulties in finding literature focussed on actor analysis. Many literatures discuss the stakeholder analysis because this is a more popular concept than actor analysis (until now). Because the two PhD studies suited the research topic they have been used as the core literature reference.

During the research the researcher struggled with the construction of the framework. It was not clear yet how to combine the different perspectives of theory and practice into one model, and how the model should look like. The model should gain insights into the different selection factors, but should also be easy to understand and not be too prescriptive. Different options of models like flowcharts, matrixes and tables were used to develop the framework, and in the end a combination of these models was used. The researcher believes that this way of presenting fits the requirements of the framework, but there may be other ways of presenting it.
Looking back at the research the researcher would have done some things differently, which are:

- The determination of the analytical quality. Still there exists the discussion if the analytical quality does really have an added value in practice. The research claims that it does, but this could have been proven in a different way. An example is by comparing the results of an actor analysis with stakeholder analysis. Or by performing different actor analysis methods to one case, and therefore showing the difference in use and insights provided. Eventually the researcher has chosen to perform a most promising actor analysis on a case, and evaluate the results of the analysis by experts.

- The selection of the second project case. Eventually the case wasn’t that complex and that every actor had the same interests. In this way DANA didn’t provide new insights into the case. To really show the added value of DANA, a more complex case would be more appropriate. In this way the argumentation to use DANA could have been stronger, as the use of a “quick and dirty” analysis wasn’t appropriate.

- The performance of the practical analysis. This analysis is performed by interviewing Grontmij personnel. What also would have been a good way is performing the analysis with the help of Q-methodology. From the interviews a list of statements could be developed and with the use of a Q-analysis, insights could be gained into the Grontmij perspectives. In this way the analysis was not limited to a selection of Grontmij personnel and would also have shown how to perform the Q-Methodology analysis.

9.4 Reflection actor analysis for Grontmij

The researcher also reflects on the use of actor analysis by Grontmij and how this research can have an added value for them. The use of actor analysis has increased a lot over the last years because actor involvement in projects has become very important. It is believed that by letting actors participate in the project/process the final outcome will be more successful. This perspective is also shared by Grontmij employees.

As a consultancy company Grontmij has to deal with lots of complex and social problems. In some situations it has to come up with a solution within an area development, but in other situations it is dealing with policy development projects. Therefore the role of Grontmij can also differ within those projects as being a client or an executor. Within each role Grontmij has to deal with different parties to cooperate which makes it important for Grontmij to develop a widely accepted solution. This is done by involving the relevant actors in the process. Therefore the attention of Grontmij into actor analysis has increased.

The initial idea of Grontmij to perform research into actor analysis came from a course in which stakeholder analysis was discussed. Within Grontmij there is no general approach of how to analyse actors in a project. Every analyst has their own approach for this. Also the request of clients for the use of an actor analysis is increasing. Therefore Grontmij wanted to have some actor analysis methods available to be able to offer a suitable method to the client’s request. The developed selection framework in this research does provide Grontmij with these insights and has got many positive reactions from Grontmij personnel. In this way the research has an added value for Grontmij.

But is an actor analysis really necessary? There are also other ways to identify actors, analyse actors and to stimulate participation within a project. For example analysts with much experience in an actor environment can be approached for information. This is less time consuming and much information is gathered. And also participation by means of for example a workshop can be increased. It can be argued that an actor analysis is just a means to reach certain goals, and there are different ways to reach those goals.

The use of an actor analysis can have multiple added values for Grontmij. First in complex situations an actor analysis helps the analyst in structuring the information and providing an overview in the actor network. In complex situations it is difficult for an (experienced) analyst to keep a clear overview of the actor network. Also an actor analysis may provide new insights into actors and the analyst can use these insights to backup his arguments/findings. Due to the different purposes and insights gained from the different actor analysis methods the scope of information is increased.
Based on the reactions of personnel and the initial research idea of Grontmij it is most likely that an actor analysis will be used during projects. The actor analysis can be a helpful tool during a project/process as in different phases different actors participate in the project/process. With the information gained in previous actor analysis the overview of the actor environment can be easily updated. Grontmij is already using stakeholder analysis during a process to analyse actors and letting them participate, but the methods discussed in this research may have an added value to use them. Attention is shifting to perform a quality analysis in the beginning of the process to avoid risks.

If Grontmij personnel will use the identified actor analysis methods in this research depends on a lot of factors (discussed in chapter 8). The researcher believes that the (TUDelft) Public Stakeholder analysis will be most often applied because of the similarity with normal stakeholder analysis. Grontmij will mostly use this method to execute an overall analysis of the actor environment. Most often due to the experience of the analyst an elaborate analysis will not be necessary or insights are gained from interviews. Only in specific situations the more elaborate methods will be suitable. The framework provides Grontmij with the possibility to offer different analysis to a client which has the added value of being a possible marketing tool.

During the research it was only possible to provide an example in practice for two actor analysis methods. This was due to time limitations. Therefore a limit of this research is that the practical use for the other methods cannot be validated. Based on literature the methods look promising, but if this is also the case in practice needs to be determined by Grontmij personnel. Therefore the barrier to use these methods may be higher than the methods performed on the project cases. But the analysis methods don’t have to be performed completely by the researcher to gain insights. Grontmij can also use parts of the analysis methods which they find most interesting. For example with the social network analysis Grontmij can use the presentation of the actor network, but the construction can be done differently.

The two cases performed in this master thesis research show how the (TUDelft) Public Stakeholder analysis and DANA are performed. But the purpose of these cases was also for Grontmij to gain insights into these cases. For the Floods Directive this purpose is reached. The market exploration has gained interesting information for Grontmij which was not familiar yet with the current status of the floods directive. The analysis has been performed from a single perspective and therefore cannot be generalised for some actors. In general the Floods Directive is in the same implementation phase in the Netherlands, but it could be that some actors like the province have a different perspective in the Northern Province than in the Southern Province. Therefore the analysis only provides a first scan, and for more detailed information the analysis needs to be extended (if Grontmij is interested). For the second case the purpose is less reached. It provides Grontmij insights into the case and coastal project, but the findings weren’t that surprising. To prove the use of DANA and really gain in-depth insights into coastal project a different case may have been more suitable. But this could only be determined afterwards.
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