

IMPLEMENTING EU ENVIRONMENTAL DIRECTIVES
IN NORWAY:
TWO CASES OF WATER POLLUTION

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March 2003



Cand. Polit. Degree Thesis
University of Oslo
Department of Political Science
Spring 2003

Preface

Writing this thesis in political science has been a professional as well as a personal challenge. However, it has been a very valuable experience to work with such an interesting subject. Both the EEA Agreement and environmental policy are of great interest to me.

The thesis has been written at the Fridtjof Nansen Institute, where I have been employed as a student researcher. This has given me a unique opportunity to take part in a scientific environment where people have been interested in and dedicated to research on environmental issues. I therefore want to thank the Institute for giving me the scholarship. I would also like to thank my two principal advisers, Morten Egeberg and Jon Birger Skjørseth. Mr Skjørseth has taken a special interest in making my thesis as good as possible, and he has provided me with very concrete and valuable counselling. Mr Egeberg has given much good advice from the very beginning of the project, and I have especially appreciated his positive attitude and supportive comments.

Furthermore, I would like to acknowledge professional assistance and great company from the employees and the other student researchers at the Fridtjof Nansen Institute. A special thanks to Maryanne Rygg for giving me valuable language advice. I have also appreciated the help I have received from employees in the ministries, the SPCA and the ESA. They have taken their time to assist me on the phone and in interviews. Most of all, I want to thank my family and friends for their support throughout the entire process. A special thanks goes to Morten, for having so much faith in me and for being such an inspiration.

Lysaker, 21 March, 2003

Yngvild Korneliussen

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List of abbreviations and Norwegian institutions

EFTA	European Free Trade Agreement
FNI	Fridtjof Nansens Institutt (Fridtjof Nansen Institute)
INSC	International North Sea Conferences
NIVA	Norsk institutt for vannforskning (Norwegian Institute for Water Research)
OECD	Organisation for Economic Co-operation and Development
SFT	Statens forurensningstilsyn (State Pollution Control Agency)
SSB	Statistisk Sentralbyrå (Statistics Norway)
	Landbrukstilsynet (Norwegian Agricultural Inspection Service)
	Miljøverndepartementet (Ministry of Environment)

1 Introduction

1.1 The subject of the thesis

The European Union (EU) has established itself as a central actor and institution on the making of environmental policy in Western Europe. At the same time, however, we see an ever-widening implementation gap. Although the EU has issued approximately 300 directives and regulations during the past 30 years, the European Environmental Agency concludes that the environmental state of the members has either been constant or worsened (FNI 2001). The Commission's own statistics on the implementation of EU environmental legislation reveals serious deficits (Knill and Lenschow 2000).

Because Norway is a part of the European Economic Area (EEA), it is also committed to adapt to most of the EU environmental legislation. The purpose of this study is to take a closer look at the Norwegian implementation of these policies. Traditionally, Norway has had a reputation for being in the forefront regarding environmental protection, but is this also the case when it comes to following up EU legislation? To shed light on this question, I have conducted a multiple-case study on the implementation of two EU environmental directives in Norway: the Urban Waste Water Directive and the Nitrates Directive. These are interesting cases, as they have many similarities yet they seem to have gone through very different processes of implementation. They also appeared to exemplify both success and failure. In this study, I investigate whether or not the directives have been implemented in accordance with their requirements. Furthermore, their degree of implementation is compared, and I try to explain differences and similarities between them by focusing on the institutional environments (context), institutional factors such as the organisational structure and administrative culture and finally, various interests involved in the processes. The result of the analysis may contribute to an enhanced understanding of what effect implementation of EU environmental policy has in Norway. What are the obstacles for successful implementation, and what increases the likelihood of fulfilment of the legislative requirements?

1.1.1 Background: environmental policy in the EEA Agreement

The EEA Treaty came into force in Norway on the 1 January 1994, and is an agreement on business and economic co-operation between the EU and the EFTA countries (Miljøverndepartementet 2002b). One of the main goals was to strengthen the economic co-operation within the free market. However, the agreement is not limited to commerce. A large part of the EU legislation concerning the internal market is also defined as environmental, and this is the main reason for environmental policy to be a part of the Treaty. In addition, the EFTA countries wanted the agreement to be the beginning of more general environmental policy co-operation. The EEA Agreement therefore also includes environmental decisions that are not related to the internal market, for example quality standards and regulation of emissions (Dahl and Sverdrup 1996).

Environmental regulation accounts for a growing part of the EEA Agreement, and about 80 per cent of Norwegian environmental legislation is affected by European legislation today (ibid.). Statistically, the implementation rate is also high. In 2002 the number of directives on environmental issues in the Agreement (air, water and waste) was 43, and Norway was registered with only one case of non- or partial implementation in a report issued by a European research centre in Brussels (Emerson et al. 2002). The report also stated; *As one would expect, there are few cases where the EEA States have not fully complied with the directives covering the environment* (ibid: 11). This shows a good reputation for environmental protection and implementation in the EEA states. However, the conclusion is based on a very narrow definition of 'implementation'. By looking beyond the formal transformation of the directives into national policy, another picture may appear. My analysis may shed some light on whether or not the mere statistics are telling the 'truth', and whether or not the good reputation is in fact well deserved.

1.1.2 Choice of cases and delimitations

In my study, I have chosen to focus on two environmental directives that were adopted to combat water pollution. They are the Urban Waste Water Directive of

21 May 1991, and the Nitrates Directives of 12 December 1991. When selecting cases, I tried to find directives that were rather similar, yet were assumed to have a different degree of implementation. They could thus be compared, and specific variables of significance for their differences could be identified. These directives are both from 1991, concern water pollution and have reduction of nutrients into water recipients as their main target. The directives are directed towards specific sectors of society, that is municipal waste water and agriculture, and they reflect the same legislative traditions that were dominant in the EU system in the end of the 1980s and the beginning of the 1990s. Furthermore, this was a period of time when neither Sweden nor Finland was EU members, and the policy did therefore not include specific considerations of the environmental situation of the North European countries. My cases are also characterised by similar elements, such as the need for defining sensitive zones. These are areas that are specifically vulnerable to pollution, and need more strict regulations on discharges. Moreover, they have both experienced implementation problems in the EU. Several countries have faced infringement procedures for not following up on the requirements, and some have also been brought before the European Court of Justice. Because the directives were adopted at the same time, it is also possible to control for differences due to public opinion on environmental issues, which may vary over time. In addition, it was interesting to find directives that concerned issues of importance for Norway.

Water has played a significant part in the history of Norwegian environmental policy, and together with air-pollution it was among the first areas to be focused upon in the 1970s. Both national authorities and international regimes mobilised at an early stage to front the problem (Jansen and Mydske 1998). Norway is a net importer of marine pollution, and it has therefore been in the country's interest to establish laws and international regimes to prevent pollution in Norwegian waters and coastal areas. However, thirty years later the water quality is still not good enough in a number of bays and fjords. The Oslo region and places near industrial or aquaculture sites are among the problem areas, and two of the remaining challenges are eutrophication and nutrient run-offs from agriculture.

Eutrophication is the process that happens when the amount of nutrients in the water-ecosystem increases, leading to more biological and organic material in circulation. Especially nitrogen and phosphorous cause problems, and human activity has resulted in a much larger supply of these materials in lakes, rivers and coastal areas than is natural (OECD 2001).

The most important sources of nutrients and organic material are waste water and agriculture, followed by industry and sea farming. The cases in this study deal specifically with emissions from two of these. The EU Urban Waste Water Directive concerns municipal waste water, and its sister directive, the Nitrates Directive, concerns pollution caused by nitrates from agricultural sources. By looking at these directives only, I have an opportunity to make in-depth studies, while retaining the element of comparison. I look at the implementation processes in Norway only, but comments on other countries are made when this may shed light on the Norwegian situation. Although the directives are soon to be included in the new EU Water Framework Directive of year 2000, I will handle them separately since this is the way they have been treated in Norway so far. This framework directive, which is already a part of EU legislation, has gathered regulations on water pollution and hence constitutes a common approach to the environmental challenges.

1.2 Research questions and strategies

To study the Norwegian implementation of EU environmental legislation, I have formulated two research questions. The first one is descriptive:

1. *To what degree has Norway implemented the Urban Waste Water Directive and the Nitrates Directive?*

The next one is explanatory, as its purpose is to explain why there are different degrees of implementation:

2. *What can explain implementation successes and failures of the Urban Waste Water Directive and the Nitrates Directive?*

Hence, the dependent variable of the thesis is the degree of implementation. With *degree of implementation*, I mean the extent to which the directives have been formally transformed into national legislation and practically applied. A formal transformation signifies that the directives have been included in national legislation and hence are to be followed up like Norwegian law. The practical application refers to the behavioural changes of those subject to the legislation, also called the target groups. These two stages of implementation will be treated separately in the analyses, and I will conclude on them individually.

When I have gathered the empirical information on the implementation processes, the next step is explaining the results. I will use three explanatory perspectives, which are based on a general theoretical framework, developed by Johan P. Olsen. These are the institutional environment, the institutions themselves and the interests involved. They are all assumed to influence the implementation of both national and international policy in general, and they will be used complementarily. I start by discussing the institutional environment. If the EU is pressuring Norway on certain issues, and the policy at the same time matches international agreements, this may explain why the directive has a higher degree of implementation than others do. Second, the institutions themselves have a part to play. Several studies have shown how national administrative systems and traditions hinder or promote legislation. However, when using this perspective, my focus will be on the sector level, and not the national. I hope to find out whether or not there are sectoral characteristics contributing to differences between the implementation scores of the directives. Finally, different interests are also known to have an impact on success or failure, because individuals and groups may put pressure on the policy in different directions.

Regarding the institutional environment, my focus is on the significance of pressure from the EU level, or more specifically the European Surveillance Authority (ESA). The importance of international environmental legislation, and especially the North Sea Agreements, is also discussed. The next step is to look at the institutional factors, which include both organisational structure and admin-

istrative culture. The structures consist of different principles of specialization that can influence the processes, whereas the administrative culture refers to the logic of appropriateness in the institution, meaning the norms and rules that are followed. As for the interests, I study both those in the administration and among the target groups. The latter are believed to evaluate the policy in question according to its costs and benefits, and by looking at this, I combine the more traditional organisational theory approach with elements from regime theory. This is necessary to study the degree of behavioural changes, and it may also be fruitful to combine and integrate different theoretical traditions.

1.3 Composition of the thesis

In the following chapter, I develop the theoretical framework for my analyses. I elaborate on the dependent variable and on the explanatory perspectives that will be used before I go on with a thorough discussion of methodology and challenges confronted. I then continue with a description of the implementation processes of the two directives, both the formal transformation and the behavioural changes among the target groups. The chapter ends with a comparative part and a categorisation of the directives' degree of implementation. In the analysis, I discuss the significance that the three perspectives have had for both the formal and practical implementation of the directives. Every section ends with a comparison of the cases and preliminary conclusions. Finally, I make my conclusions and sum up the results. I also discuss whether there are explanations for the implementation that have not been covered by the three main perspectives. Moreover, I take a look at the expected complementarity of the independent variables.

2 Theoretical framework

The purpose of this chapter is to design an analytical framework for evaluating and explaining the implementation of EU environmental directives in Norway. The chapter contains three main parts. First, I elaborate on the dependent variable and look at important concepts. I then present the theoretical perspectives that will be used for analysing and explaining the degree of implementation, and deduce theoretical propositions on them. The last section looks at methodology and the data material used for the empirical information.

2.1 Defining the dependent variable

In the first part of the research question, I ask to what degree Norway has implemented two environmental policy directives from the EU. Consequently, my main dependent variable is implementation, or more specifically, degree of implementation.

2.1.1 What is implementation?

Implementation in its widest form can be described according to Weale as 'to carry something into effect' (Skjærseth 1999:37). In my thesis it is the directives that are the subjects of analysis. But what does it mean to carry them into effect? Since the literature offers a variety of ways to approach this issue, it has been an important task to find the most appropriate one for my purpose. Traditionally, implementation studies of EU legislation have mostly paid attention to what might be called policy output. There is high degree of implementation output when 'the formal transposition and the practical application of institutional and instrumental changes correspond to the objectives defined in the European legislation' (Knill and Lencshow 2000:11). The statistics from the research centre in Brussels, which concluded that Norway had almost fully complied with the environmental legislation, was based only on the transposition part. However, it is interesting to also look at the institutional and instrumental changes carried out in the administration to comply with the requirements. For example, have any new policy tools for compliance been introduced? Have plans been made for

following up on the target groups? Has the administrative structure in some way been adjusted to the new policy? This first definition will be the main focus of my study, as the EU depends on the countries themselves for incorporating the directives into national legislation. However, a high score on the output does not necessarily mean that a policy has carried something into effect. This depends also on behaviour change of the target groups of the policy. Although there have been quite a few studies on output, we still know little about the impact on the target groups (Skjærseth and Wettestad 2002). My study therefore takes one step further and includes the outcome dimension. Implementation at this stage has taken place if there is a 'change of behaviour of those subject to the provisions of the regime' (Skjærseth and Wettestad 2002:14). Further on the implemental chain is the impact the directives have on the state of the environment, meaning whether or not the environmental situation has in fact improved or not. I have chosen not to discuss this in my analysis because it is extremely difficult to measure such effects. Nor is it normally covered in studies of implementation in political science, as it is necessary to have a background in natural science to understand these connections.

2.1.2 Measuring output and outcome

To operationalize the *output* of the directives, I look at goal achievement. Both the Urban Waste Water Directive and the Nitrates Directive have been registered with ESA as 'transformed' into Norwegian legislation, and this was also a precondition for studying an implementation process in Norway. My main focus will then be on 'the practical application of institutional and instrumental changes'. Each directive has a number of main requirements, and I will make a qualitative evaluation of whether or not these have been met in legislation and administrative initiatives. Time limits and to what extent they have been kept is also of importance. By only looking at the main requirements, I have conducted a delimitation, as the directives are rather long and complex. They contain numerous minor demands, which in my opinion contribute less to an understanding of the directive's degree of implementation. I have consequently chosen not to include them in my analysis. A more natural delimitation concerns time frames. The

Urban Waste Water Directive includes several deadlines, where the last one is 2005. The requirements for that year will not be discussed.

The implementation scores of the directives can be measured in different ways. For simplicity and comparison, I have chosen to define output as a dichotomous variable with the categories 'success' and 'failure'. This will be similar to a 'high' and a 'low' score on the implementation. In my further discussion and analysis, I will use these concepts synonymously.

Accordingly, my two categories of output are based on the definitions by Knill and Lenschow (2000:11), and are as follows:

- 1) There is successful implementation if the directive has been transformed into Norwegian legislation, and the practical application of institutional and instrumental changes have taken place within the deadlines or without too much delay.
- 2) There is failure of implementation if the directive has been transformed into Norwegian legislation, but not has been followed up with institutional and instrumental changes. Hence, it is also delayed.

There is some general criticism of including the outcome in the analysis, as it includes an assumption of causal relationship between policy output and policy outcomes (Knill and Lenschow 2000). The behaviour of the target groups will be influenced by numerous factors, and studying the outcome is therefore often avoided in literature about public administration. To avoid spurious fallacies caused by other factors than the directives, it is then very important to establish a causal link between the directives and the outcome (Skjærseth and Wettestad 2002). The important question to ask is therefore whether or not changes in outcome could have been caused by other factors than the EU legislation such as economical, technical and political processes. However, previous research on agricultural pollution and municipal waste water in Norway has found that the changes are very likely due to either national or international policy (Skjærseth 1999:147-152). I therefore assume that other factors are of little significance for

changes in outcome, and concentrate my analysis on national- and international legislation and initiatives.

To study the *outcome*, I will rely on evaluation criteria which are much used in explaining regime effectiveness. According to Underdal (1992), there are two ways of approaching the issue. One is to evaluate the achievements compared to an 'ideal' solution, while the other is to look at what would have happened in a hypothetical situation without the policy. Since the directives include concrete requirements, the ideal solution is a question of goal achievement and will be qualitatively discussed. However, because the target groups are a large number of farmers and municipalities, it is impossible to measure whether or not all of them have followed up on the demands. One way of coping with this problem is to look at statistics for discharges, as these may indicate whether or not a behaviour change has taken place. The discharges of nitrogen into water do not, however, change over night, and it is therefore an advantage that the directives are from the beginning of the 1990s.

The evaluation of goal achievement must in these cases be combined with the second approach, since neither of the directives states any specific goals for reductions. The reduction of discharges therefore should be compared to a 'hypothetical situation'. To use the method, I have to determine a point of reference against which the actual achievement is to be compared (*ibid.*). I have chosen the year 1990 as my baseline, which is the year before the directives were adopted, and I will compare it with data from 2002. I will look at whether or not there has been a reduction in the discharges from the different sectors in the given period of time. For the Urban Waste Water Directive, I will look for changes in discharges of Nitrogen, phosphorous and organic material. For the Nitrates Directive, I only look at nitrogen. Changes early in the period are, however, less likely to have been caused by the directive than changes at the end of the decade. I then compare the goal achievement with 'a hypothetical state of affairs' without the directive (*ibid.*). This is interpreted as a situation where the policy in the sector was based only on national targets and initiatives. It is the

close connection between requirements of the directives and other initiatives in accordance with the North Sea Declarations that makes such a definition necessary.

As with the output, I have made outcome into a dichotomy with the values 'low' (success) and 'high' (failure). Hence, I have the following categories based on the above mentioned definitions:

- 1) There is successful implementation if there has been a reduction in the discharges, and there is a difference between the hypothetical 'business as usual' situation, and the situation present today.
- 2) There is failure of implementation if there is no reduction or increase in the discharges, and there is no difference between the hypothetical 'business as usual' situation, and the situation present today.

The previous elaboration can be summarised in the table below (table 2.1). The table contains four different combinations of output and outcome, and high or low degree of implementation. This gives us four ideal types.

Table 2.1 Implementation scores

		OUTPUT	
		LOW	HIGH
OUTCOME	LOW	(1)	(2)
	HIGH	(3)	(4)

1. Low output – low outcome

The directive has been transformed into Norwegian legislation, but has not been followed up with practical institutional and instrumental changes. Little or no reduction in the discharges has been achieved, and there might even have been an increase. The situation today is no different from a hypothetical 'business as usual' situation.

2. High output – low outcome

The directive has been transformed into Norwegian legislation and followed up with institutional and instrumental changes. However, there have been little or no reductions in the discharges. They may also have increased. Moreover, the situation today is no different from a hypothetical 'business as usual' situation.

3. Low output – high outcome

The directive has been transformed into Norwegian legislation, but has not been followed up with practical institutional and instrumental changes. Reductions in the discharges have occurred, and the situation today is different from a hypothetical 'business as usual' situation. Other factors and processes than the directive have probably had an influence on the changes.

4. High output – high outcome

The directive has been transformed into Norwegian legislation and followed up with institutional and instrumental changes. Reductions in the discharges have occurred, and the situation today is different from a hypothetical 'business as usual' situation.

Because the categories represent a simplification, it is difficult to make perfect matches with reality. However, to analyse and compare the cases, such choices have been necessary. In the following chapter I will discuss the processes of implementation and place the directives in one of the table's four squares for further analysis. To do so, I need to answer the following questions:

- ~~☞~~ How has the administrative processes of implementing the directives been?
- ~~☞~~ To what degree have the requirements of the directive been followed up by practical application of institutional and instrumental changes in Norway?
- ~~☞~~ Have there been reductions of discharges from the target groups of the directives?
- ~~☞~~ To what extent have the target groups changed their behaviour in accordance with the requirements of the directives?

2.2 Explanatory perspectives

Three different perspectives are elaborated for the purpose of explaining the directives' degree of implementation, and I will compare the directives by using various factors of the explanation variables. My analysis is based on a theoretical framework elaborated by Johan P. Olsen, and has been chosen because it covers the important elements of my presumed explanations. Explanatory factors are located in:

- a) the objective characteristics of an institution's environment,
- b) the characteristics of individual decision-makers: their intentions, subjective views of the situation, and relative power and
- c) institutional structures and processes (Olsen 1992:248).

Explanation (b) is extended to also include a discussion of rational actors at sub-national level, evaluating their options in term of costs and benefits.

The implications of the three perspectives must be balanced in relation to each other in order to produce a good explanation. By looking at the tension and interplay between them, I hope to single out determinants for successful or unsuccessful implementation. The perspectives also have different explanatory focus for the output and outcome, which will be commented on in their presentations.

2.2.1 The institutional environment

The institutions in charge of implementing the directives exist in an institutional environment. This context influences them and the behaviour of their decision-makers. Behavioural changes of the target groups may also be affected by this factor. The institutional environment is hence expected to have an impact on the directives' degree of implementation for both output and outcome.

The institutional environment I will focus on here, is the EU system and international environmental agreements. It is important to pay attention to the pressure from above. For example, EU may threaten Norway with sanctions if

their directives are not implemented in time or in the correct manner. This is again assumed to have an influence on the degree of implementation. To measure the institutional environmental pressure from the EU level, you can look at the work of the surveillance authority, ESA. How often and in what way have they approached Norway in connection with the directives?

International environmental agreements are also important, as they often regulate the same fields as the EU legislation, and hence may partly overlap. Such overlaps can be an advantage, if there is a match, or a disadvantage, if the requirements are somehow contradictory. The Urban Waste Water Directive and the Nitrates Directive were adopted after the North Sea Conference in London (1987), and have later been used as policy tools for reaching the goal in the North Sea Declarations of 50 per cent reduction of nitrogen (Bergen Declaration 2002). Failure at the international level has been seen in connection with the delays in implementing the directives in the member states. I will therefore specifically look at the North Sea Declarations and how the interplay between these and the EU directives have influenced the implementation process.

Due to the previous sections, I have deduced the following proposition, which applies for both stages in the implementation processes:

1) If there has been substantial pressure from the EU, and the requirements of the directive have matched the North Sea Declarations, a high degree of implementation is expected. If the pressure has been insignificant, and there has been little match with the North Sea Declarations, a low degree of implementation for the directives is assumed.

2.2.2 Institutional factors

International commitments are implemented through domestic institutional structures and administrative culture. A main question is the role these national factors play, and how they affect the results. Although the perspective often is used to compare nations with different administrative structures and traditions,

my focus will be on sectors within the country. I have chosen cases that represent two different pathways of implementation. The Urban Waste Water Directive has been a vertical process between the Ministry of Environment (ME), the counties and the municipalities, whereas the Nitrates Directive has rather been a horizontal process between the ME, the Ministry of Agriculture (MA) and the State Pollution Control Agency (SPCA). The municipal waste water and the agricultural sector may also be seen as examples of different administrative traditions. It is therefore interesting to look for explanations of implementation among the institutional factors such as the organisational structure and the administrative culture.

I will only use this perspective to analyse the output of the directives, as this is where it is assumed to have its main explanatory powers.

Organisational structure

Administrative structures are believed to explain the implementation processes. In this analysis, the significance of vertical (centralisation/decentralisation) and horizontal (concentration/fragmentation) distribution of administrative competencies is assumed to be of special importance as it influences the policy by leading to different patterns of administrative co-ordination and control (Knill and Lenschow 1998:597). Decentralisation and administrative fragmentation are structures that split administrative tasks, and this may in turn lead to implementation difficulties (Knill 1998). Furthermore, the structures open up for various conflicts between actors and interests.

The Urban Waste Water Directive is an example of decentralisation of responsibility. This means that the implementation has to go through different levels, opening up opportunities for actors lower down in the system to resist the policy with reference to their interests. Further, geographical elements such as local self-government will increase the possibility for local adjustments to take place, because different considerations will be confronted and prioritised. Such things may in turn hinder a standardised policy and hence a successful implementation.

The Nitrates Directive illustrates administrative fragmentation, and is hence an example of horizontal specialisation. Co-operation between different sectors is necessary for the implementation, and increases the possibility of conflict.

To measure the possible effect of the organisational structure, I will look at the division of labour and the process of co-operation between the different units, vertically and horizontally. Decentralisation and fragmentation make co-operation between the units involved in the implementation process essential for a standardised implementation and goal achievement. Co-ordination, conflicts, contact patterns and information exchange are therefore important indicators. Accordingly, my second assumption is:

2) A hierarchical structure with close co-ordination and contact between the administrative units increases the possibility for a mutual understanding of the content of the directive, the initiatives necessary to implement it and consequently a standardised solution. It is therefore assumed to lead to a high degree of implementation. On the other hand, little co-ordination and contact increases the possibility of conflicts, disagreements and adjustments, and is assumed to result in a low degree of implementation.

Administrative culture

Organisations are believed to be infused with values, as they have their own goals, objectives, norms and ways of doing things (Selznick 1957). Such organisations are then considered to be institutions, and they influence the behaviour of the persons making decisions on implementation. Persons act in accordance with their role expectations, which is a part of the institutions' 'logic of appropriateness' - existing norms, rules and standards.

The way the administrative traditions affect the implementation also depends on the pressure for adaptation the EU exerts. New legislation is more likely to be implemented effectively if it matches the 'local' logic of appropriateness (Knill 1998:2). Knill talks about this as change *within* the core of national administrative

institutions. Differences in traditions can then contribute to explaining a high or low degree of implementation. So how is it then possible to measure administrative traditions and core values of an institution? The concepts are rather vague, and illustrate values that are often implicit. Moreover, core values can be found both at national and sector level, but since I am trying to identify differences, my main focus is on the sectors. To study the core, I look at routines, norms and values in the two fields. Models of governance, such as sector-integration, and principles of governance such as the precautionary principle are good indicators, as are policy traditions on for example the use of different instruments and existing legislation on the subject. The model's explanatory power will be weakened if the two sectors illustrate almost similar core values with the same degree of pressure, and yet have a different degree of implementation.

One may distinguish between three levels of pressure, which in different ways can influence the degree of implementation. Pressure is classified as *high* if the new directive is in conflict with core elements of administrative arrangements. If the adaptation required is possible to do with changes within the core of the administration, the pressure is *moderate*. This means that the core itself is not challenged. Finally, the pressure is *low* when the member-states can rely on their existing provisions to implement the directive. Focusing on the *institutional factors*, there are three general propositions concerning the degree of implementation (Knill 1998):

- a) The directives in accordance with the core values of the administration, are expected to have been implemented successfully (low pressure).
- b) The directives in conflict with the core values are expected to have met resistance. Implementation failure is most likely (high pressure).
- c) The directives which demands change within the core, can both lead to success or failure. It depends on the nature of the specific actor constellations (moderate pressure).

Whether or not the directives are in accordance with the core values is therefore an important aspect of the discussion. I have developed this assumption:

3) If there is a low degree of compatibility between EU legislation and the policy at sector level (conflict with core values), there will be high adaptation pressure and a low degree of implementation (output). If there is a high degree of compatibility (accordance with core values), low pressure and a high degree of implementation is assumed. A medium degree of compatibility (change within the core possible), can turn out both ways depending on other factors.

2.2.3 Individual decision makers – or an interest-based perspective

A possible explanation for different degrees of implementation of the Urban Waste Water directive and the Nitrates Directive may also be that there are differences in their costs and benefits, and the distribution of these. For example, the Urban Waste Water Directive is a very expensive piece of legislation, and in such cases, strong interests are often confronted. Furthermore, there may be various opinions and interests at the administrative level, influencing the processes. In this study, the size and distribution of costs and benefits are assumed to have an impact on the outcome, whereas the administrative interests are assumed affect the output.

For the purpose of analysing the two processes, I will first look at the interests of sub-national actors. Those are the target groups of the policy that cause pollution and must change their behaviour in order to fulfil the requirements of the EU legislation. There are also other types of sub-national actors, like the environmental non-governmental organisations. However, they will not be included because previous research has shown that in Norway, they hardly involve themselves in cases concerning agriculture and municipal waste water (Skjærseth 1998). This is also supported by my own investigations (interviews).

The target groups are believed to be rational and evaluating their options in terms of costs and benefits. They will chose the options that are believed to maximise

net gains, and they will have incentives to comply with the policy requirements 'as long as its marginal costs of compliance are lower than (or at most equal to) the marginal benefits it expects to receive from fulfilling its obligations' (Underdal 1998:8). I therefore have to identify the relevant target groups and their incentives. In addition, I have to find out to what extent they are affected. This depends on the distribution of costs and benefits. According to Underdal (1998:14), '...the policy measures that are most easily implemented will be those which offer tangible benefits to some specific sector of the economy or organised segment of society while costs are widely dispersed throughout society. Conversely, the commitments that are hardest to implement are those where costs are concentrated to specific actors or segments while benefits are indeterminate or widely dispersed...' Hence, I have the following proposition for the outcome:

4) If the implementation costs at the sub-national level are higher than the benefits, a low degree of implementation is assumed. The opposite is believed to cause a high degree of implementation. However, if the benefits are concentrated and the costs distributed, I assume a high degree of implementation. If costs are concentrated and benefits distributed, the implementation is likely to face resistance and failure. A distribution of both costs and benefits is not assumed to cause any specific assumption.

In addition to the sub-national actors, the units at the administrative level also have different incentives. It is especially when the adaptation pressure is moderate that the interest-based perspective becomes important in explaining degree of implementation for the output. When the pressure is moderate, the situations are 'institutionally more open' (Knill 1998:25). However, this is not a condition for the interest-based perspective to be used in explaining policy or politics. It can also have significance when the pressure is low or high, but perhaps to a lesser extent.

At the administrative level, the interest-based perspective pays attention to different interests, intentions and resources in the bureaucracy. The implementa-

tion is to be seen as a result of bargaining between actors having various interests and preferences. However, the interests of the divisions and offices are not assumed to have the same relevance as private interests at sub-national level. This is because interests in the organisations are assumed to be more neutralised by the logic of appropriateness. Yet, the output is assumed to be strengthened or weakened by interests and preferences in favour of or opposite to the directives at the administrative level. My fifth proposition is therefore that:

5) Opposition at the administrative level is assumed to cause a low output score, whereas support for the directives may result in a high degree of implementation. Other combinations of opposition and support can lead in both directions. If the adaptation pressure of the directives is *high* or *low*, the impact is likely to be less than if the pressure is *moderate*.

2.3 Methodology

The purpose of my research questions is to *describe* and *explain* two processes of implementation. In the following chapter I elaborate on the methodological strategy chosen, and the data material I rely on. Methodological challenges are also discussed.

2.3.1 Methodological approach

This implementation study has a qualitative approach, as I want to understand and explain distinct processes (Andersen 1990). Doing a case study is the preferred strategy when making in-depth studies of contemporary phenomenon within a given context (Yin 1994:9). My work focuses on EU environmental directives, where the context is the national system with its specific characteristics. It is therefore necessary to make a thorough study of the different processes that have taken place and the actors who have been involved.

The analysis is conducted as a multiple case study, which gives me a chance to add an element of comparison. There are two main strategies for doing comparative studies, called 'the most different systems design' and 'the most similar

systems design' (Ragin 1987). The first method compares cases where the results of the dependent variables are similar. Finding the factors that lead to this similarity is then the study's object. The second method starts with cases that have a different result on the dependent variable, yet their context is very similar. The purpose then is to look for that little difference that might explain the different outcome (ibid.). In this analysis, I look at two cases which were assumed to have a different implementation score. They were also rather similar, as they both concerned water pollution and were adopted in 1991. Accordingly, they could be said to fit the second approach.

To explain the variation, one must find factors that are different for the cases. Since their contexts are so complex, this is often challenging. A general analytic strategy is then to use theoretical perspectives, and develop propositions. They will guide the analyses by focusing attention on certain data, and make it possible to isolate those variables that might explain the variation (Yin 1994:103-104). Accordingly, this thesis has three theoretical perspectives as a starting point for explaining the degree of implementation.

If I had studied more than two cases, the causal mechanisms in the material might have become clearer. This was difficult to carry out though, as there were no other directives concerning water pollution that were comparable when it came to date and type. It was also a question of capacity and priorities. However, if several case studies are conducted over a period of time, the knowledge will improve, as there will be a possibility for analytical generalisation. In other words, the result of the study may strengthen theoretical explanations found in earlier empirical studies. My work may therefore be seen in connection with other studies of Europeanisation in Norway (see for example Berg 2000 and Bræin 1998).

2.3.2 Describing the processes – sources of information

By basing the data collection on multiple sources, the possibility of gathering different types of information increases and the research questions can be illustrated from several angles. It is also possible to compare the data and consequently identify differences in the material. This can help improve the construct validity of the study (Yin 1994). Furthermore, it is crucial to be critical towards the different sources, as the description of the processes forms the background of my later analysis.

My main sources of information have been documents, reports, statistics and interviews. In archival records, I have gained access to officially available documents from the different ministries and directorates. These documents have mainly been internal correspondence within the bureaucracy and included those classified as confidential. Various reports from the Parliament, ministries and directorates have been used as supplementary information, as they describe background and general policy in the area (green papers and white papers). This written documentation is believed to be of high reliability, but it reflects the position of the administration and it is difficult to find other opinions in the material. However, some of the documentation in the archival records was external letters from the municipalities and private actors, and they sometimes illustrated a different attitude than that of the bureaucracy. Opinions have also been found in professional literature on waste water and eutrophication, such as 'Vann' (Water), published by Norsk Vannforening (The Norwegian Water Association). In addition, I have used earlier science reports and articles. Neither of the directives had been subjects of hearings when I conducted my study, and I have therefore had no written information on different actors' views of the directives' content and their expressions of interests. For this information, I have had to rely on interviews. Statistics have also been supportive to get a picture of the behavioural changes, and the development over time. I have mainly used material from Statistics Norway (SSB), the SPCA and a review from the OECD on Norwegian Environmental Performance. Using the different material has

given me an opportunity to check the correspondence between the numbers given, which in turn has increased the validity.

Interviews and more informal conversations have been a very important source of information. Conducting interviews raises several methodological questions concerning validity and reliability. The information is likely to be biased, and this increases the importance of trying to balance the interviews with other sources of documentation. In my case this has been difficult due to lack of hearings, discussions in parliament or newspaper material. Moreover, 'the logic of appropriateness' and core values of the administration are implicit phenomenon, and information on such issues will always be methodically difficult to obtain.

I have conducted nine interviews with representatives from the ministries, the SPCA, the ESA, the EFTA, the Norwegian Delegation to EU and several organisations which represent the target groups. In addition, I have had informal conversations with a number of people, both professionals and bureaucrats. Some of the persons I have interviewed have also been participants in such conversations prior to the interviews. The informants have been persons involved in the processes or with responsibility for the directives today. A problem here is that the directives are more than 10 years old, and none of the informants had followed the entire process. Such a long period of time is also a problem for the memory of the informants. They are likely to remember more from the latest years than from the beginning of the 1990s. However, this has partly been compensated for by the use of archival records. Another problem has been that the directives have been complex, and not all the informants have fully understood the processes themselves. Furthermore, not many people have actively taken part in the process, so I have not had many informants to choose between. Neither are the processes all finished, and this means that it is impossible to include everything in the analysis.

The interviews have been conducted with an open interview guide, which gave me the necessary flexibility when talking to the different persons. They lasted

from one to two hours, and I used notes to record the information. Several of the interview-objects wanted to read the final version of the empirical chapter for comments, and have therefore had the opportunity to correct misinterpretations or misunderstandings. Because some of the informants wanted to be anonymous, I have chosen not to use any names when referring to the interviews.

2.3.3 Some specific methodological challenges

Data collection and the measurement of causal influences in explanations are the most common methodological challenges in social sciences. In the previous sections, I have discussed how I will go about them. But in this study, there are also more specific methodological challenges.

Primarily, there is a common problem in studies of implementation that the time span is too short. Results of laws and initiatives may develop over time and it is often difficult to track effects and changes at an early stage. By focusing on directives with a history of approximately 10 years, I have tried to avoid this problem. But I do need to pay attention to the different time limits of the directives.

Then there are two problems concerning the outcome. One is how to measure it, whereas the other is how you can establish a causal relationship between the directives and their outcome. Behaviour changes are hard to observe and measure, especially since the target groups of the directives are so complex. However, they can be measured indirectly by using emission statistics. This is possible since both directives concern pollution by specified nutrients into waters (see part 1.1.2). Natural variations in discharges, problems of information gathering and estimations are issues to be aware of however. I have relied on statistics from the OECD, the SPCA and SSB, all of which are considered to be of high reliability. I have also discussed behavioural changes with representatives from the target groups (interest-organisations) in my interviews. This may be controversial, as one assumes that an organisation such as the Norwegian Farmers Union, know what their members are doing and to what degree they are

following up on the policy. This approach must therefore be used with precaution and in close connection with the other sources of information.

Measuring causal influences is always difficult. In this study, it has been of specific importance to pay attention to the context in which the directives have been implemented. Other initiatives and legislation have made the processes confusing and the lines unclear. The Urban Waste Water directive has, for example, been part of a strategy of improving the Norwegian treatment plants, which again partly is a consequence of the commitments of the North Sea Agreements. The Nitrates directive is not implemented as a directive itself, but is considered implemented through many other initiatives. Hence, the perspective on institutional environment becomes very important. In the discussion on its significance, I have tried to account for the other ongoing processes and legislation. I have then chosen to look at the initiatives caused by institutions outside of Norway collectively, and compare them against a hypothetical situation where the policy was only based on national initiatives.

3 Implementation of the directives

The target for this chapter is to answer the first part of the research question: To what degree has Norway implemented the two environmental directives? I start with an elaboration of the Urban Waste Water Directive, before I go on with the Nitrates Directive. In the last section, I sum up the results and place the directives in the table which I developed in chapter two. Subsequently, I compare the empirical scores on the output and the outcome.

3.1 The Urban Waste Water Directive

The implementation of the Urban Waste Water Directive has been a long process, and much still remains to be done. In this section, I review empirically what has happened since the adoption of the directive in 1991 and up to the present time (February 2003). I start with a short introduction to the environmental problem the directive addresses, and a presentation of the directive's content. I then describe the implementation process.

3.1.1 Pollution from municipal waste water

Municipal waste water from the population contains among other things nutrients, and therefore has a negative effect on the environment if discharged. It often leads to eutrophication of rivers, lakes and coastal waters. The consequences are reduced water-quality and a number of problems for people or animals using the recipient waters. Treatment plants are therefore necessary to reduce the discharges and improve the environmental condition of the recipient bodies of water (SSB 1999a). In 2001, discharges from municipal waste water accounted for 19.0 per cent and 27.6 per cent, respectively, of anthropogenic inputs of phosphorous and nitrogen to coastal areas in Norway (NIVA 2001).

To overcome pollution problems caused by discharges from waste water, the European Union adopted the Urban Waste Water Directive in 1991: *Council directive 91/271/EEC concerning urban waste water treatment* (EU Commission 1998). The directive 'concerns the collection, treatment and discharge of

urban waste water and the treatment and discharge of waste water from certain industrial sectors'. In the object clause, it is stated that 'pollution due to insufficient treatment of waste water in one Member State often influences other Member States' waters; whereas in accordance with Article 130r, action at community level is necessary'. Hence, the EU wants to prevent the environment from being affected in a negative way by the disposal of insufficiently treated urban waste water.

The directive uses various treatment requirements, which are 1) appropriate treatment, 2) secondary treatment, 3) tertiary treatment and 4) primary treatment. The requirements are dependent on the type of recipient (water), the condition of the recipient (sensitive, normal or less sensitive) and the size of the urban area where the plant is located. Within 1993, sensitive- and less sensitive areas were to be classified in accordance with specified criteria. For sensitive areas, tertiary treatment is necessary, while primary treatment usually is good enough for the less sensitive areas. Since the directive is highly technical, I will not elaborate further on these specific demands. The member states shall ensure that all urban areas are provided with collecting systems for waste water within year 2000 or 2005. For areas classified as sensitive, the deadline was by the end of 1998. Monitoring is to be done by competent authorities or appropriate bodies, who shall ensure that the discharges from the treatment plants are in compliance with the requirements. Every two years, the relevant authorities or bodies shall publish situation reports on the disposal of urban waste water and sludge in their areas.

Among the EU countries, the implementation has far from been a success. In 2001 Environment Commissioner Margot Wallström launched a 'name and shame' seminar on the directive. Ten years after its adoption, the vast majority of the member states showed major delays and shortcomings in the implementation. Not a single member state, for example, met the first major implementation deadline. Furthermore, almost all the members have been very slow in providing the Commission with information required. The EU court condemned Italy in

2001 for failing to ensure sewage treatment from the city of Milan, but also others are facing infringement procedures (EU Commission 2002b).

3.1.2 The formal implementation

The Urban Waste Water Directive was formally implemented in Norway through an implemental regulation in 1996. This incorporation was based on an interpretation of the directive as uncomplicated for Norway. Policy could continue as before, and no major changes were necessary. However, about three years later it became obvious to the authorities that the directive required stricter implementation where the requirements were followed up more literally. Work on a new regulation concerning waste water then started, and it is expected in January 2004. According to my definition of output, the Urban Waste Water Directive, at present (February 2003), cannot be considered correctly implemented. To explain why the Urban Waste Water Directive has failed on the output, I need to take a closer look at the process that has taken place. The following part therefore includes a thorough description of the administrative process for implementing the directive from 1991 until February 2003.

The administrative process

The Norwegian administration started to evaluate the Urban Waste Water Directive the same year as the EU adopted it. An internal note was written in the ME already in 1991 on the consequences of following up on the directive, and at that stage they were considered to be unacceptable (archive 13 Mar 1991). The costs of required new treatment were estimated to be 3-4 billion NOK, and result in only a marginal environmental profit. The goal for nitrogen reduction was also believed to be very difficult to achieve. Furthermore, it was highlighted that Norway was relying on different techniques and methods than what were usual in central Europe.

The difficult situation was discussed in an expert meeting between EFTA and the Commission the same year (1991) (archive 20 June 1991). The Commission at that time seemed to be flexible on the Norwegian policy, even though it slightly

deviated from some of the requirements of the directive. When Norway entered into the EEA Agreement in 1994, the opinion of the administration was therefore that they already fulfilled the requirements of the directive through existing legislation. The license system of the Pollution Act, the North Sea Declarations, use of economic instruments, circular letters and more were considered to be sufficient for compliance (interview). However, the administration expected a reaction from ESA with a request for a more concrete implementation. Accordingly, they started the process of creating a regulation to formally implement the directive. At the same time, the directive also contained more specific requirements like the classification of sensitive areas. The work with these was carried out by the SPCA at an early stage, and the results reported to ESA in 1994 (archive 23 June 1995).

While working with the new regulation and the classifications, the SPCA called for technical assistance from the county environmental governors to get an overview of the consequences (archive May 1994). Many of them were clearly confused by the directive. Some found it difficult to answer the questions because they did not have the competence, they were critical to the requirements and had many questions. Others found that the information they had received was incomplete and they did not agree on the classifications. Furthermore, there seemed to be some frustration concerning the fact that the new classification of sensitive areas differed from previous ones that were designed for similar commitments. They feared that it would be very unfortunate and demotivating for politicians and taxpayers if doubt arose about the professional background for the evaluations. However, the counties that at this stage seemed not to be affected by the directive were contented and had few comments.

The comments did not really influence the work of the SPCA. On their advice, the ME then decided on using an implemental regulation. This meant that the Norwegian regulation only referred to the directive as existing legislation, with the argument that 'An adjustment of Norwegian policy in this area is not being considered' and 'A change in the division of responsibility between ME, SPCA

and Environmental County governors is not being considered' (archive 14 Aug 1996 – my translation). The work with the regulation was also delayed, and the ME had to notify ESA twice that the work would take more time than planned. The regulation was finally adopted in 1996. It was excepted from hearing procedures because it did not 'involve any administrative or economic consequences'. Furthermore, the directive was considered to be recipient orientated and therefore in accordance with Norwegian principles. The implementation of the directive was therefore to be done through national initiatives that were yet to be carried out as a part of the more general Norwegian policy on the area (archive 12 Sept 1996).

The end of days of glory

It was an easy solution for the environmental administration to use an implemental regulation, but it made the directive more difficult to access for the target groups. Local water and sewage authorities in Norway have been used to waiting for more direct instructions before they change their actions, and therefore they just continued their normal policy after the regulation was adopted (interview).

In 1998-1999 the process of implementation entered into a new phase, as the need for a more literal implementation arose. A realization dawned that the national policy was not good enough to comply with the requirements. A combination of three factors caused the new development. First, ESA received an anonymous complaint from someone in Norway who strongly disagreed with the Norwegian interpretation of the directive. This clearly made the ESA more attentive to the way the directive had been implemented in Norway. Second, the city of Trondheim refused to follow the treatment requirements, which had been imposed on them by the county governor for a new plant. These relied on the new guidelines for the license treatment by the county governor that had been developed by the SPCA in 1997, which were based on the requirements of the directive. After a lengthy discussion and much back and forth between the municipality, the county, the SPCA and the MA, this case also ended up on ESA's table. In the process that followed, the ME realised that they had to

change their interpretation of the directive. Finally, this was combined with the need for sending reports to ESA. A change of action was then simply forced upon the administration (interviews).

Towards a new regulation

Although the ME had been made aware of the insufficient implementation, it took some time before they acted. It was not until 2001 that the ME asked the SPCA to make a proposition for a new regulation to implement the directive, based on a literal interpretation (archive 4 Apr 2001). The work with impact assessment started, and the evaluation was to be sent out for hearing in late 2002. At present, however, (February 2003), the report still has not left the administrative offices, and the new regulation is not expected to enter into force until January 2004 (interview). This will be a major step towards a complete formal implementation of the directive, but the delay will be substantial. For example, the requirement for secondary treatment within 2000 will have 2005 as deadline for the municipalities. This means five years later than what was set in the directive (interview).

Norway has also been delayed regarding other requirements of the directive, but this must be seen in connection with the more general problem Norway has with time frames. The EEA countries have to follow the same time schedules as the EU members, although the directives are approved by their governments much later than in the EU countries. Consequently, Norway has 'speculated that delays would be accepted' when running out of time (interview).

Preliminary conclusion

The conclusion on the output part of the Urban Waste Water Directive is that the directive has been transposed into Norwegian legislation. However, it has not been followed up with practical application of institutional and instrumental changes. The creation of a new regulation more than ten years after the administration started the evaluation of the directive, clearly illustrates this.

3.1.3 Behavioural changes

Behavioural change in the waste water sector can be traced by looking at statistics on discharges, and these figures can be complemented by using documentation on investments among other things. Interviews can also contribute to support or attenuate the consequences drawn from the data. However, a change of behaviour in accordance with the directive is closely connected to the output. In other words, there must be a causal chain between the formal implementation and the practical following up. In the case of the Urban Waste Water Directive, I have earlier concluded that there is a low degree of formal implementation. Nevertheless, the directive was formally adopted in 1996 and has been legally binding for about six years. Before the implementation regulation was issued, the directive was believed covered by existing provisions. Hence, behavioural change in accordance with the directive may have taken place. The problem is that some of the changes have been based on an interpretation of the directive that has later turned out to be incorrect.

I will now review what has happened in the waste water sector since the adoption of the directive at EU level in 1991. I will then discuss whether or not the changes can be seen as results of the directive.

Discharge reductions

Already in the 1970s, the Water Pollution Control Act was adopted as a basis for regulating municipal sewage, agriculture and industry (Skjærseth 1999:5). Then in 1988-1989 it was stated that a main target of the government was to reduce the discharge of nutrients, that is nitrogen and phosphorous, by 50 per cent before 1995, using 1985 as a baseline (Stortingsmelding nr. 46). This was in accordance with the commitments of the North Sea Conference in London in 1987. The work on reducing the emissions therefore started before the EU adopted its directive. In the waste water sector, the government planned on building approximately 100 treatment plants along the coast. They had in addition initiated a development project for finding solutions for removal of nitrogen and sludge. As

a result, many treatment plants for waste water were built during the last 20 years (OECD 2001).

Looking at the situation in the 1990s, the discharge of nitrogen and phosphorous from municipal waste water to coastal waters was reduced by 15 per cent and 24 per cent respectively (OECD 2001:54). There was in addition an increase in the total hydraulic capacity of the municipal treatment plants, and in the share of the population connected to them. In 1990, 59 per cent of the population was covered, while the share rose to 80 per cent in 1999 (OECD 2001:54). Also secondary waste water treatment (Norwegian definition) increased significantly, yet around 9 per cent of municipal waste was discharged untreated in 2001. Still, discharges from waste water accounted for 19.0 per cent of the total supply of phosphorous and 27.6 per cent of the nitrogen into marine waters in 2001 (SSB 2001:161). When it comes to removal of organic material, this has not been focussed upon for upgrading of treatment plants and new initiatives. There have therefore not been any significant reductions of these discharges.

The new plants have mainly been chemical or chemical/biological, and have hence achieved a good cleaning capacity for phosphorous. Norway has in fact managed to comply with the 50 per cent target in the North Sea Declaration on phosphorous in the waste water sector. Initiatives regarding nitrogen treatment have also been given priority in some of the larger treatment plants in Eastern Norway, and these are necessary to fulfil the requirements of the directive on tertiary treatment. Over time, they are likely to contribute to a reduction of nitrogen discharges to the sensitive areas. Low investments and delays are causing problems however, and there is still a long way to go. At the end of the 1990s, the building of two important plants was delayed due to high expenses, the need for a new evaluation of different technical alternatives and smaller state subsidies than expected (SSB 1999:129).

EU policy, or business as usual?

There is no doubt that many things have happened in the waste water sector during the 1990s. The question though, is whether the action that has been taken is in accordance with the specific requirements of the directive. Would the reductions of nitrogen, phosphorous and organic material have taken place from 1990 to 2002 if the sector had only been subject to national targets and initiatives?

The Urban Waste Water Directive has to a small extent been decisive for the demands from the county governors on municipal waste water treatment. Local and regional situations have been emphasized for giving discharge permits. According to the ME though, the initiatives within the Norwegian waste water sector have mostly been identical with the demands in the directive, since both the Norwegian waste water policy and the EU directive are recipient-orientated (archive 4 Apr 2001). This opinion is clearly based on the former comprehension of the directive however, because a more literal interpretation of the directive does not support such a conclusion.

Given the strict interpretation of the directive, the municipalities will face new costs when the regulation is adopted in 2004. This means that many of the municipalities that have already invested in upgrading their plants will have to rebuild and change the treatment practice. In 2001, the SPCA gave the private company 'Aquateam' an assignment to evaluate the discrepancy between the situation in 2001 and the EU requirements for primary and secondary treatment. Their preliminary findings were based on several assumptions, but showed that about one third of the chemical treatment plants could manage the requirements. This means that about two thirds would probably not do so. If certain conditions are present, primary treatment is accepted instead of secondary treatment in less sensitive areas. The discrepancies here were also investigated, and the preliminary results were that 18 densely built-up areas only have filters, sludge separators or no treatment at all. None of these would manage to fulfil the secondary treatment requirement, and most of them would not manage the requirement for

primary treatment either. Eight plants with chemical treatment that possibly could live up to the primary treatment requirement were also registered. However, they were likely to have problems with the secondary treatment. Obviously, Norway is facing implementation difficulties (archive 30 Apr 2002).

When asked directly whether or not they think that the Urban Waste Water Directive has had significance for the Norwegian waste water sector in the 1990s, none of my informants have said yes. The policy would have been the same without the directive. Nitrogen removal and the building of new plants in the Oslofjord area is explained with reference to national initiatives to comply with the reduction targets of the North Sea Declaration. However, awareness is increasing, and in some of the big cities authorities have started gathering information and evaluating initiatives that will be required (interview).

To conclude on behavioural change, it is obvious that the efforts that have been taken are not a result of the directive. Nor have many of the initiatives been in accordance with the requirements of the directive. On nitrogen removal, the directive may have had a small effect on some of the more technical issues, but the new plants would most likely have been built also without the Norwegian transposition of the directive (interview). Given my definition, the directive therefore has a low score on implementation outcome.

3.2 Implementation of the Nitrates Directive

The content of this section will be very similar to the previous one, as I look at the empirical process of implementing the Nitrate Directive in Norway from 1991 to 2002. The problem of run-offs from agriculture and the content of the directive are shortly accounted for in the first part, before I go on with the formal and practical implementation.

3.2.1 Nitrogen pollution from agriculture

Run-offs from agriculture are a major source of nutrient inputs to the marine environment, and this is mainly due to more intensive agricultural production and an increase in the use of cheap inorganic fertilizers (SFT 2002). The run-offs are the largest source of anthropogenic nitrogen inputs to coastal waters, which again causes eutrophication. This is especially a problem in local recipient waters in areas with much agriculture. One of the nitrogen substances in the fertilisers is nitrates, and excessive nitrates are detrimental in drinking water and surface waters, where they cause ecological damage and algal blooms by using up stored oxygen (ENDS, Environment Daily 2000a). However, eutrophication in general is not a great problem in Norway compared to the rest of Europe.

3.2.2 Directive on nitrates from agriculture

Facing the problems of agricultural pollution, the EU adopted the Nitrates Directive in 1991: *Council directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources*. The purpose of the directive is 'Reducing water pollution caused or induced by nitrates from agricultural sources and preventing further such pollution'.

The member states were required to identify waters which could be affected or already are affected by pollution. Within two years, vulnerable zones were to be designated, meaning all known areas of land draining into waters and causing pollution. These lists of zones shall be reviewed and if necessary revised or added to if necessary at least every four years. The changes must be reported to the Commission or ESA.

Further, and also within a period of two years, the member states were to 'establish a code or codex of good agricultural practice, to be implemented by farmers on a voluntary basis' and 'set up where necessary a programme, including the provision of training and information for farmers, promoting the application of the code(s) of good agricultural practice'. Reducing or preventing water pollution from the use of organic and inorganic fertilisers are important elements

here. Information on these codes was to be submitted to the Commission or ESA. Mandatory action programmes, with a specified content on different initiatives, were to be established in respect of designated vulnerable zones within two years after the designation. They were to be implemented within four years. The effectiveness of the action programmes should be assessed by the implementation of suitable monitoring programmes.

Seven years after its adoption, the directive was described by a commission official as 'one of the worst implemented pieces of EU environmental law' (ENDS, Environment Daily 1998). At this time, infringement procedures were being pursued against 13 of the 15 member states. UK was condemned in the European court of justice in December 2000 and the situation in 13 of 15 states was described as 'extremely unsatisfactory' (ENDS, Environment Daily 2000b). One year later, Italy was condemned and France followed in 2002 (ENDS, Environment Daily 2001 and 2002b). Sweden and Denmark are the only countries that seem to have implemented the directive correctly. In August 2002, the Commission published its second Synthesis report on member states' implementation of the directive, and it was here concluded that pollution of the EU ground waters by agricultural nitrates is on the rise despite ten years of action. However, the report found that surface and coastal water contamination was largely stable or declining (ENDS, Environment Daily 2002c). The Commission also stated that the member states in the last two years had shown a real willingness to improve implementation (EU Commission 2002a).

3.2.3 From directive to Norwegian legislation

There are different ways to carry out EU directives in Norwegian legislation. The transformation may be done with a reference to the directive in a piece of legislation, or by making a Norwegian version of it. It is also possible to conclude that there is harmony between national law and EU law. This means that the government only states that the content of the directive is already covered by existing legislation, and no further action is needed. The implementation process of the Urban Waste Water directive actually exemplifies all these methods during

different stages, whereas the Nitrates Directive has been formally incorporated with the help of the last method. Transformation like this often implies both juridical problems on later interpretations, and practical challenges on the implementation (Sejersted et al. 1995). The Ministry of Justice does therefore not recommend it. In the case of the Nitrates Directive, a consequence has been that there is still confusion today in the ministries concerning whether or not the directive has in fact been implemented correctly.

'Implemented by accident'

Although Norway did not enter the EEA until 1994, the administration started to evaluate the contents of the directive and its consequences already in 1992 (archive 20 Feb 1992). The evaluation resulted in an interpretation of the directive as 'uncomplicated and acceptable', given assumptions that existing legislation and ongoing projects would cover the requirements. In the EU, many countries have problems with their drinking water due to nitrates. Further, the density of farm animals in Europe causes environmental problems with nitrates because there are many animals on relatively small areas. Neither of these are issues in Norway, and pollution from nitrates is hence less of a problem (interview).

Since Norway was not allowed specific postponements, formal implementation was expected without delays after the EEA Agreement came into force (archive 8 Apr 1992). A preliminary notification was therefore sent to ESA in 1994 on the following up of the directive, which rested on the above-mentioned evaluation: Both the vulnerable zones and the action plans were equivalent to the ones designated for the North Sea Declarations. The county environmental departments were carrying out monitoring on watercourses polluted by agricultural sources under the supervision of the SPCA. The regulations concerning storage and land application of livestock manure were under revision and finally, economic instruments were integrated in the agricultural policy through subsidies, among other things (interviews).

A year later (1995), in a summary record from the sixth meeting of the Nitrates Committee in Brussels, Norway was registered on transposition as 'already covered by national legislation'. The directive had pretty much been 'implemented by accident' (interview).

Designating vulnerable zones

In 1995, the first status report on the directive was required. It was to especially concern the designation of the vulnerable zones, and at this stage it had become clear that only referring to the areas already defined for the North Sea Declarations was not sufficient. In the ME, it was the Pollution division that had the responsibility for what turned out to be a professionally long and difficult process (interview). The report was delayed by a year, and it then turned out to be incomplete. It related only to freshwater bodies, whereas the situation in estuaries, coastal waters and marine waters was not included (archive 5 Feb 1997).

The incomplete report resulted in a reaction from ESA. The Norwegian delegation to EU was approached in late 1997, and made aware of the fact that the time limit for reporting had run out (archive 7 Nov 1997). Norway was orally requested to implement the directive as soon as possible (archive 9 Mar 1998). In 1997 the ME designated two coastal areas as vulnerable for nitrogen according to both the Nitrates directive and the Urban Waste Water directive. This was a natural result of ongoing work on this issue, and was not specifically related to the implementation of the directives. The designation process was, however, characterised by delays, both professionally and administratively. And in the end the zones were sort of defined as preliminary, with many reservations (interview). The zones were not reported to ESA however, until the Norwegian delegation to Brussels contacted the MA in 1998 and told them to do so.

To sum up on the designation of the zones, it is quite clear that it was a long process with quite a few challenges. Many actors were involved, and tried to find their role in the new system, which combines both Norwegian and EU legisla-

tion. For example, the SPCA was indirectly in contact with the MA through the ME, which turned out to be an unnecessary chain causing waiting and delays. In spite of this, the contact between the units was described as good (interview). That Norway would be able to meet the time limit for the zones was an unrealistic expectation, since it was only two years after the adoption of the directive and the EEA Agreement was not signed until 1994. However, the fact that the final report on the zones was not sent to ESA until 1998, shows a serious delay.

Agricultural requirements

While the ME and the SPCA in co-operation handled the vulnerable zones, the agricultural requirements of the directive were and still are the responsibility of the MA. This is due to the sector responsibility approach, and the delegation of responsibilities. However, the administrative fragmentation has clearly had implications for the implementation of the requirements that are specifically connected to agricultural initiatives.

The MA has from the beginning co-ordinated work on reducing pollution from the agricultural sector. National targets on the quality of water bodies and international commitments such as the North Sea Declarations and the Nitrates Directive have therefore been addressed through *one* set of instruments and administrative systems (interview). This has resulted in goal achievement on most of the requirements of the Nitrates Directive. Changes in the regulation on livestock manure is actually the only concrete action done to comply with the directive. For the rest of the demands, the initiatives in connection with the North Sea Declarations have been used as references.

However, the process with the designation of the zones seems to have led to awareness in the ME of the need to follow up on the directive more literally. Since the ME is the ministry in charge of the directive, they suggested in a letter that the MA within 1998 prepared separate action programmes in accordance with the directive to reduce the loss of nitrogen in the areas affected with the problem. Action programmes are required to be established within two years

after the zones are established. The MA was also asked to follow up on other possible requirements concerning the agricultural sector (archive 9 Mar 1998). Hence, the situation in 1998 indicates a change in the previous attitude of the ME that existing legislation and initiatives were sufficient as implementation of the directive. This is a parallel to the Urban Waste Water Directive, where it also became clear to the administration that the EU would not approve of implementation unless all the requirements were fulfilled in detail. Furthermore, the EU had been very clear on the fact that they require own programmes for a full implementation of their directive (interview).

The MA did not understand why they had to create, among other things, new action programmes, which they described as doing the work twice. Their reaction was therefore as earlier; they were already dealing with the requirements through their work with the North Sea Declaration and the ongoing work on reducing the pollution from agricultural areas in general. This should therefore be reported to ESA. The nitrogen sensitive area in the North Sea is covered by the Convention, and there is a national action plan going on to reduce the supply of nutrients to this area. This was perhaps not the correct way of following up on the directive, but it was 'according to common sense' (interview). However, the MA felt that there was a need to go through the issue to find out where there was correspondence and where further supplements were required (archive 29 Apr 1998).

Once again, the Norwegian delegation in Brussels was involved, as they told the MA that separate reports to ESA on the implementation were required (archive 7 May 1998). The ME was then approached by the ESA in August the same year, and notified that they would now follow up on the Norwegian implementation of *both* the Nitrates- and the Urban Waste Water Directive.

However, in the case of the Nitrates Directive, not much has happened since. The ME and SPCA are still waiting for the MA to create the specific action programmes and codes of good agricultural practice (2002) (interview). They

have also persistently asked the MA to prepare the reports on the measures taken, which is their responsibility (interview). The MA is, however, not working on these issues. They believe that existing initiatives, together with minor changes in the regulation on livestock manure, qualify as sufficient implementation, and this is what they intend to report to ESA in 2003. The date for finishing a report was set by the MA themselves, as reports are required four years after the designation of the vulnerable zones. Although the zones were reported to ESA in 1998, MA is counting from 1999 because they were awaiting the ESA evaluation of the zones (interview).

Preliminary conclusions

To conclude on the agricultural requirements, it seems as if the directive is mostly covered by existing legislation, initiatives, agreements and plans. What is needed though, is a collocation of the requirements and the initiatives, and a report (interview). In addition, some of the more specific requirements have not been incorporated. As long as the ESA not has received any reports and accepted them, one can not be sure of the actual status on the agricultural demands either. Based on the experience with the Urban Waste Water Directive, one should also be careful about assuming success before the achievements have been evaluated by the ESA. I have therefore classified the formal implementation with a low score.

3.2.4 The outcome – changes in behaviour

As with the Urban Waste Water Directive, I have to rely on statistics and support them with interviews to trace behavioural change among the target groups. Emission statistics from the agricultural sector on nitrogen then become important. A problem when studying the discharges from this sector is that there has been a lack of data for the latest years. The models used for estimating the situation have not been good enough. At present, the last data collected is from 1996, and these were used for calculations until about 1999 (interview).

The statistics tell one side of the story on behavioural change. I have tried to get another by asking representatives from the farmers organisations whether or not they believe their members have been following up on the different initiatives and plans issued since 1990. A similar question has also been asked representatives from the environmental- and agricultural administration. The answers I got do not have a high degree of reliability, but they express attitudes and shed some light on the practical parts of the implementation.

Discharges in the 1990s

The agricultural sector was responsible for about 35 per cent of the anthropogenic supply of nitrogen to the coastal areas in 2001, and there was only a negligible reduction in the period from 1990 to 1998 (SSB 2001:55). Looking at the inputs to the North Sea (the Swedish border to Lindesnes), the numbers were more positive. In this area, which was defined as vulnerable according to the directive, agriculture accounts for more than half of the nitrogen inputs (SSB 2001:161). Initiatives to reduce the discharges have especially been focused on here, and as a consequence, nitrogen emissions were reduced by 14 per cent in the same period of time (1990-1998) (OECD 2001:52).

Behavioural changes on agricultural initiatives

The requirements of the directive for reducing nitrate pollution from agriculture mostly concern the use of manure. Both the action programmes and the codes for good agricultural practice are primarily concerned about practice here, and I will therefore start by looking at these changes. This section will rely both on statistics and interviews. However, it has not always been possible to get data specifically for the years 1990 to 2002. In most cases, I rely on numbers which roughly cover the same period of time.

Commercial fertilizers are a major source of nitrogen causing pollution in the agricultural sector, and the use of these peaked at the beginning of the 1980's. Then the situation stabilized, and continued to do so in the 1990's (OECD 2001:52). However, there have been signs of changes also here. In the period

from 1997 to 1999, the sales of nitrogen in commercial fertilisers were down 5.6 per cent. This change happened after the introduction of mandatory fertilizer programmes, and is very likely to have been an effect of the initiative. Moreover, in 2000/2001 a decrease of 6.3 per cent was registered from the previous season. These figures need to be interpreted carefully however, as the reductions may be due to a number of factors other than fertiliser programmes (Landbrukstilsynet 2002).

Clearly, practice on soil preparation has changed during the 1990s. There are variations annually, but a strong tendency in the right direction. Areas ploughed in autumn decreased from 81.5 per cent in 1989 to 54.0 per cent of grain area in 2000 (SSB 2001:14). However, most of the reduction took place already early in the period and during the latest years the situation has been rather stable. Also the practice for spreading manure has been influenced by the environmental initiatives. There has been a substantial shift from spreading in the autumn to spreading in the growth period, which is positive for reducing nitrogen. Furthermore, the use of catch crops has expanded during later years, especially in the North Sea area (SSB 2001:29). There is however a considerable potential for further change of behaviour both in these and other areas (interview).

To make a preliminary conclusion, the statistics show that there have been reductions of nitrogen discharges to the North Sea area, although not substantial. Numbers on sales of fertilisers, manure spreading, autumn tillage and more also indicates that there has been a change towards more environmentally friendly practices in accordance with the requirements of the directive. Further, representatives from the agricultural administration and interest organisations support these findings. However, the OECD report from 2001 states that agricultural run-offs have not been coherently addressed by policy measures in Norway, and further efforts will be needed to meet Norway's commitments (OECD 2001:52).

Business as usual?

To find out whether or not the directive can be classified as having a high degree of implementation, I need to compare the situation in the agricultural sector

today with 'a hypothetical state of affairs'. *Would the reductions in nitrogen discharges and the other examples of behavioural change have taken place during the 1990s if the sector had only been subject to national targets and initiatives?* It is not possible to look only at the effects of the directive in the evaluation of the outcome, because the entire process of implementation has been closely connected to the North Sea Declarations. I therefore have to look at the effects of the directive and the Declarations together. The farmers are probably not aware that many of the initiatives have their background in a directive or targets in the North Sea Declarations. Their conduct is related to the general agricultural policy, and the information and requirements issued from the government.

The policy for reducing runoffs from the agricultural sector did not start from scratch with the Nitrates Directive, nor from the North Sea Declarations. The directive has in fact only been a small part of the increasing environmental initiatives in the agricultural sector. Already at the end of the 1970s and the beginning of the 1980s, the first national programmes were initiated with the 'Mjøsaksjonene' (actions for the large Mjøsa Lake). They were followed up by an action plan against agricultural pollution from 1984 to 1989, and North Sea plans from 1992 (interview). The North Sea Declarations brought money for environmental initiatives into the agricultural sector, and it brought speed to an ongoing process. Quantitative targets were politically set, and instruments established to fulfil them (interview). Hence, the Declarations pushed the process further, and according to a representative from one of the interest organisations for farmers, we would not have been where we are today without it (interview). He mentioned among other things the changes in soil preparation as an example. The Nitrates Directive and the Declaration have been implemented by common initiatives, but the requirements of the Declaration have been tougher and more comprehensive than the ones in the Directive (interview).

My conclusion on behavioural change then is then that the development that has taken place and the reductions in discharges of nitrogen to a large extent has been caused by a combination of the North Sea Declarations and the Nitrates Directive. National initiatives alone would probably not have achieved the same

reductions in discharges. Hence, there has been a reduction in discharges, and there is a difference between the ‘business as usual’ situation and the situation today. The Nitrates Directive therefore has a high degree of implementation on the outcome part. This was not expected given the logical connection between the output and the outcome. However, in this case the result seems to have been different due to the close connection between the requirements of the directive and the North Sea Declaration.

3.3 Summing up on both directives

I have now evaluated two implementation processes in two stages. The degree of implementation of the Urban Waste Water Directive and the Nitrates Directive can be described by the use of the table which I developed in chapter two (table 2.1). As shown in table 3.1 below, the Urban Waste Water Directive fits into category number one. It ‘has been transformed into Norwegian legislation, but has not been followed up with practical institutional and instrumental changes. Little or no reduction in the discharges has been achieved, and there might even have been an increase. The situation today is not different from a hypothetical “business as usual” situation’. The Nitrates Directive is placed in category three. It ‘has been transformed into Norwegian legislation but not been followed up with institutional and instrumental changes. There have been reductions in the discharges, and the situation today is different from a hypothetical “business as usual”’.

Table 3.1 The directives’ implementation scores

		OUTPUT	
		LOW	HIGH
OUTCOME	LOW	The Urban Waste Water Directive	
	HIGH	The Nitrates Directive	

This raises several interesting questions for further analysis of success and failure of the environmental directives. I will use the analytical framework developed in chapter two to search for the explanations for the following questions:

- ✍ What can explain the low degree on both output and outcome for the Urban Waste Water Directive?
- ✍ Can the same explanation variables explain both directives' failure on output?
- ✍ What are the differences between the directives that may have caused the different degree of implementation on outcome?

Before I continue the analysis, I take a closer look at the differences and similarities in the processes of implementation.

3.3.1 Comparing the degree of implementation

The two directives are similar in many ways, yet their processes of implementation have been quite different. They also have different results on their scores for the outcome part. In this section, I compare and contrast the directives' implementation to look for similarities and differences that later can contribute to an understanding of success or failure.

The output

Both the Urban Waste Water Directive and the Nitrates Directive are now registered as having '*full implementation*' at ESA, and have been for quite a while (EFTA 2002a). Nevertheless, they have a low score for my definition of output, due to lack of practical application of institutional and instrumental changes. Failure here has different causes, however. For the Nitrates Directive, the problems have been the formalities more than the substantial requirements, whereas for the Urban Waste Water Directive the requirements themselves have been the main challenge. Further, the implementation of the Urban Waste Water Directive appears to have been subject of more administrative efforts.

The process of implementing the Nitrates Directive can be described as indirect and diffuse compared to the Urban Waste Water Directive. It was registered as covered by national legislation and initiatives already in 1995 in a report at EU level, and little specific work of following up on the directive has been done since. The administration has gradually tried to incorporate the requirements of the directive into the Norwegian legislation. Vulnerable zones have been designated, and some changes have been made to the regulation on livestock effluents. Beyond that, the directive itself has not been the subject of much attention. It has been considered a minor part of the environmental policy in agriculture, which to a large extent has been dominated by the requirements from the North Sea Declarations on the issue of nitrogen.

The Urban Waste Water Directive was first implemented through an implemental regulation in 1996. Like the Nitrates Directive, it was originally believed to be covered by national legislation, but ESA did not find this to be sufficient. This may be due to the fact that the Urban Waste Water Directive has very specified demands which need to be followed up closely. The directive is long, detailed and very complex. It also contains numerous technical definitions and requirements. The Nitrates Directive has a more simple design, although some of the requirements need specific action. However, the regulation of 1996 to implement the Urban Waste Water Directive turned out to be based on a wrong interpretation. Hence, ESA required a more literal implementation and a new Norwegian regulation will therefore be adopted in 2004. An evident difference between the directives is that the Nitrates Directive has not been implemented through new legislation, whereas this has been necessary for the Urban Waste Water Directive.

The outcome

The Urban Waste Water Directive has a low degree of implementation on outcome, whereas the Nitrates Directive has a high degree, according to my definitions. When looking only at the reductions on discharges, the sectors are rather similar. There have been reductions, but they are not great. The discharges of nitrogen from waste water to the Norwegian coast were reduced by 15 per

cent in the 1990s. Looking at the same area in the same period of time, the reduction on discharges from agriculture was minimal. However, an effect was found in the area from the Swedish border to Lindesnes. This area covers the two defined vulnerable areas to nitrogen, which are the target for the directive, and had a reduction of 14 per cent (OECD 2001:52-54). Since most of the reduction took place in the period from 1990 to 1994, it was probably not a direct consequence of the Nitrates Directive. The North Sea Declarations, however, seem to have been important for this change. In the sensitive areas defined for the Urban Waste Water Directive, the nitrogen discharges from waste water were reduced in the period from 1994 to 1999 (NIVA 2001:21). The reduction was most evident for the inner part of the Oslofjord, and can be seen in relation to the building of new plants.

When compared to a 'business as usual' situation, there is a difference between the directives. Behavioural change in the agricultural sector is to a large extent due to the Nitrates Directive and the North Sea Declarations. On waste water, the directive has not had any significant influence on the changes that have taken place.

4 The significance of the institutional environment

In the following chapters, I analyse the empirical results found in chapter three. I start with the institutional environment perspective, and try to find out whether this can contribute to an understanding of the directives' implementation scores: Why do both directives have a low degree of implementation on the output? And why is the Nitrates Directive a success, whereas the Urban Waste Water Directive is a failure on the outcome? I first repeat the main features of the perspective and assumptions made, before I go on to analyse the EU pressure and the degree of matching with international agreements in two separate sections. The chapter ends with a comparison between the directives and preliminary conclusions.

The institutional environment perspective assumes that the context for implementation is very important. It will differ according to the cases in question, but for the environmental directives, the EU system and international agreements are the two most significant factors to study. The EU system can influence both the output and the outcome by pressuring Norway and the administration in particular to implement the legislation. This pressure is often exercised through the ESA, and can also make the government use stricter means to force the requirements on the target groups. Moreover, if the policy is in accordance with international agreements, the implementation may be easier for both the administration and the target groups. Matching requirements can mean double pressure and that the involved parts already have started changing their behaviour. Accordingly, my assumptions were that substantial pressure from the EU, and matching between the directives and the North Sea Declarations, would lead to a high degree of implementation. Insignificant pressure and little matching with the North Sea Declarations would lead to a low degree of implementation.

4.1 Pressure from the EU

Norway is not a member of the EU, but has to follow up on a lot of EU legislation due to the EEA Agreement. The agreement involves a lesser degree of commitment than the EU legislation has for its member states, but once the

legislation has been accepted by the EEA Committee, the obligations are the same.

The EEA countries are monitored by the EFTA Surveillance Authority (ESA). The central task of ESA is to supervise the fulfilment by EFTA states of their obligations under the EEA Agreement. ESA should also ensure that the Agreement is properly implemented in the national legal orders and that the governments correctly apply it (EFTA 2002b). If the policy is not followed up, the ESA can also start infringement procedures against the states for the EFTA court. This is the main instrument for pressuring the states to comply with a directive or regulation. The sanctions are an efficient threat towards the states, which mostly live up to the demands before their cases are taken to court. From 1994 to 2002, there were only six infringement cases in court against Norway, but none of these concerned environmental issues (Magnussen 2002).

It has been argued that the ESA is putting more pressure on the EEA states than the Commission does with the EU members. However, research shows that this is not the fact (Graver and Sverdrup 2002). This has also been confirmed in my interviews with the ESA representative on environmental issues. The ESA is a small organisation with large responsibilities and working pressure. As a consequence, they do not have time to follow up on the countries as closely as they would like to. Nor are environmental issues the top priority, as the EEA Agreement is primarily an economic agreement. Moreover, Norway has a good reputation regarding environmental legislation. There is no doubt though, that ESA can exercise a high degree of pressure if necessary. The control-system has also improved over the years, as the Agreement has become more established (interview).

4.1.1 The Urban Waste Water Directive and EU pressure

The EU Commission has launched a succession of infringement procedures against member states for poor implementation of the Urban Waste Water Directive, and the ESA has also been following up on Norway rather closely

(ENDS 28 Feb 2002). However, their involvement started late in the process, and it was not until 1998 that they really started to engage themselves. This was most likely due to the fact that ESA does not have enough resources to start their own investigations. The member states give notification on their implementation, but it is only when their mandatory reports are turned in that ESA can take a closer look at what has been done.

When ESA received both reports and a private complaint from a Norwegian actor in 1998, their focus was naturally drawn to Norway. They became aware of the failure of implementation, and started to put pressure on the Norwegian administration. Since then, the ESA representative on environmental issues has been in contact with the SPCA several times, and she has also participated in meetings where the directive has been discussed. Although the relationship could be described as one of co-operation rather than conflict, the ESA has been very strict on the requirements and they have made it clear that they only accept a full and literal implementation of the directive.

Involved informants have described the significance of the ESA on the Norwegian output as substantial. They have been just as tough as the Commission, and put a high degree of pressure on Norway and the municipal waste water legislation. It may seem as if the ESA understands the Norwegian frustration about implementing a directive that is assumed to have so little effect, but this has not influenced the demand for following up. Since the Commission has not accepted that any national discretion be exercised, the ESA cannot either. The pressure has also been regarded as high because the administration has feared infringement procedures (*ibid.*).

It is obvious that the ESA has influenced the implementation with their formal and informal pressure, but can it explain the directive's scores? According to my assumptions, substantial pressure from the EU level would cause a high degree of implementation. This has not been the case with the Urban Waste Water Directive. The ESA has put a lot of pressure on the Norwegian administration,

but there is still a low degree of output. It seems as if the pressure can lead to changes in behaviour, but the administration needs time to turn a failure into a success. In this case, the EU pressure cannot explain the present situation, but I will not say that that it has been insignificant. If the ESA had not pressured Norway, we would be much further away from a literally correct implementation than we are today. The reactions from ESA made the Norwegian government start work on drafting a new regulation based on the concrete requirements of the directive. In this way, a 'successful implementation' moved one step closer.

The explanation of outcome failure cannot be found by looking at the ESA pressure either. My assumption was that a lot of pressure would have an impact on the target groups through the administration. However, I have no indications that this has happened.

4.1.2 EU pressure in the case of the Nitrates Directive

Also regarding the Nitrates Directive, the Commission has been closely following up on their member states. There have been many infringement procedures due to implementation failures, and some states have also been ruled against by the Court of Justice (Europe Environment 2002). The ESA has not been as much involved in this process as they have been with the Urban Waste Water Directive. Their engagement however, started at about the same time. Norway had not fulfilled the requirements on designation of vulnerable zones, and was late in meeting the deadlines. In 1998, ESA then asked for orientations and reported that they were to follow up on both the Norwegian implementations of the Nitrates Directive and the Urban Waste Water Directive. As a consequence, the problem regarding the designation of the zones was then dealt with, and the ESA has not done anything on the Nitrates Directive since.

Once again it becomes obvious that ESA depends on reports to make the surveillance possible and that they also have a capacity problem (interview). Norway has been delayed in delivering the reports, and the Norwegian status therefore remains uncertain to the Surveillance Authority. At present (February

2003), they have no concrete plans on following up on the directive, but it will probably be discussed when the reports are turned in. Hence, the pressure from the ESA must so far be described as low. Neither does the administration seem to fear a reaction.

According to my assumptions, insignificant pressure would contribute to a low degree of implementation on both output and outcome. In the case of the Nitrates Directive, the assumption is in accordance with the result of the output. Because the ESA has been so little involved after the problem with the zones was solved, the ME has not pressured the MA to finish the report and create the separate action programmes. Nor has the MA itself felt the need to do so, and the result has been delayed implementation. As for the outcome, the assumption does not fit the empirical finding. Lack of pressure should have resulted in failure here, but this has not been the case. The perspective therefore has little explanation power at this stage of the process.

4.2 The North Sea Declarations

The first International Conference on the Protection of the North Sea was held in Bremen in 1984. The hope was to stimulate and bring further the ongoing work within existing international conventions. The conference in Bremen was the start of a more permanent institution, and since then Regular Ministerial Conferences have been held in London (1987), Hague (1990), Copenhagen (1993), Esbjerg (1995) and Bergen (2002). At each conference, the ministers have made commitments concerning environmental protection of the North Sea (Miljøverndepartementet 2002a). In the London Declaration from 1987, it was among other things decided to reduce discharges of phosphorous and nitrogen to sensitive areas in the order of 50 per cent between 1985 and 1995 (Skjærseth 1999:6).

The Urban Waste Water Directive and the Nitrates Directive were responses from the EU to the London Declaration. Following-up with the directives was later stated as necessary for fulfilling the goals in the Esbjerg Declaration (INSC

2002). However, the Norwegian work on complying with the demands of the London Declaration was initiated before the directives were included in the EEA Agreement. As a consequence, many of the requirements of the directives have partly or totally overlapped with initiatives in connection with the North Sea Declarations.

4.2.1 Match with the Urban Waste Water Directive

The work on establishing sensitive areas for nitrogen and phosphorous was started several years before the directive became part of the EEA Agreement. Planning and building of treatment plants for the removal of nitrogen was also initiated in the eastern part of Norway, which had been defined as sensitive to Nitrogen. This made it easier to comply with the requirements of the directive concerning designation of areas and tertiary treatment. However, the North Sea Declarations did not include specific reduction targets for organic material from municipal waste water. This has been the major obstacle for the Norwegian implementation, and the most difficult part of the directive to comply with.

The question then is whether or not we can talk about a match between the directive and the North Sea Declarations. A high degree of match would mean that the implementation would be easier and success more likely. In the case of the Urban Waste Water Directive, there has been a match on some areas, and the administration has faced few problems with these. However, on the important requirement of secondary treatment, there has been no match at all, and failure on the output therefore came as no surprise given the assumptions of the perspective.

4.2.2 Match with the Nitrates Directive

In the agricultural sector, various measures have been carried out or initiated due to the requirements of the North Sea Declaration requirements on reducing phosphorous and nitrogen. These have included soil tillage methods, catch crops, management of manure and fertilizers, drainage and surface water management, changes in crop composition and technical improvements of point sources in

agriculture (silage and manure storage) (INSC 2002). Furthermore, sensitive areas for both nitrogen and phosphorous have been designated, and the MA has created action plans for the farmers on more environmental friendly farming.

All these initiatives and programmes have led to a good match between the Nitrates Directive and the North Sea Declarations. The match has even been so good that parts of the administration have found no need for a separate implementation of the directive. Hence, the directive has been implemented as a part of the Declarations, and the demands of these have often been stricter than the requirements of the directive itself. According to my assumptions, a high degree of implementation was then to be expected both for the output and the outcome. However, the empirical material has showed success only at the outcome. In this case though, there has been a strong causal link between the Declarations and the successful practical implementation. There is therefore no doubt that the contextual factor of international agreements has strong explanatory value for this phase of the Nitrates Directive.

Regarding the output, successful implementation was also assumed. Although there was a match between the Declarations and the directive, it nevertheless achieved a low score. Hence, the agreements cannot explain the output failure of the Nitrates directive. I need to search further for this explanation with the help of the remaining perspectives.

4.3 Comparative discussion and preliminary conclusions

The ESA has several times been in contact with the Norwegian administration concerning the implementation of the two directives. However, much more pressure seems to have been exercised on implementation of the Urban Waste Water Directive than on the Nitrates Directive. This can be seen in connection with the content of the two directives. The Nitrates Directive concerns issues that are not of great importance for Norway, whereas the Urban Waste Water Directive requires a substantial change of action. A lot of pressure has therefore been put on the Norwegian administration for a literal and total implementation

of the latter. The administration had to start work on drafting a new regulation on municipal waste water some years ago to comply with the demands, but the process has been slow. Hence, the pressure has forced the administration to act, but it has not yet led to a successful implementation. The EU pressure can therefore not explain the low degree of implementation output of the Urban Waste Water Directive. In the case of the Nitrates Directive, the pressure has been almost insignificant, and failure on the output was therefore expected. This also matched the empirical data.

Looking at the outcome, the empirical scores did not fit the assumptions for either of the directives. In the case of the Nitrates Directive, there was low degree of pressure from the EU level, yet the directive turned out to be a success. The Urban Waste Water Directive failed although the pressure was substantial. The EU pressure could therefore not explain why *both* directives had a low score on the implementation output. Neither could it explain their different score on the outcome.

The North Sea Declarations have only partly matched the requirements of the Urban Waste Water Directive, while the match with the Nitrates Directive has been almost perfect. I therefore assumed a low degree of implementation output for the first one and a high degree for the latter. However, the assumption only found support regarding the Urban Waste Water Directive. On the outcome however, the success of the Nitrates Directive has strongly correlated with the significance of the North Sea Declarations. The match has been very good, and this has resulted in a successful outcome for the directive although the output was a failure. This may look odd, because normally a high degree of practical implementation would be dependent upon prior formal implementation. As for the Nitrates Directive, most of the initiatives were already carried out due to interaction with the Declarations. Once again, the explanation for outcome failure of the Urban Waste Water Directive was not to be found with the impact of international agreements. This contextual variable could therefore neither explain the similar score of the directives on output, nor their different result on

outcome. However, the match with international agreement for the Nitrates Directive did have a great significance for its successful outcome.

In sum, the institutional environment perspective can in some cases contribute to an understanding of the degree of implementation. Looking at the cases individually, the output failure of the Nitrates Directive could be explained by a low degree of EU pressure, whereas the lack of a good match with the North Sea Declarations could explain the result of the Urban Waste Water Directive. The strongest correlation was found between the North Sea Declarations and the outcome of the Nitrates Directive. However, I believe that the above mentioned explanations on output should be seen in connection with other independent variables. I also remain aware of the possibility that variables other than the North Sea Declarations can contribute to an understanding of the Nitrates Directive's outcome. Moreover, I will continue searching for explanations of the outcome of the Urban Waste Water Directive.

5 Organisational structure and administrative culture

In the previous chapter, I found that the institutional environment perspective was not sufficient to understand the directives' scores on the output and the outcome. Variables at an institutional- or individual level can sometimes influence the effects of the context, and I will therefore continue analysing the directives' degree of implementation by looking at institutional factors. The target groups and the individual decision makers in the processes will be evaluated in the next chapter. The institutional perspective will only be used to analyse the output of the directives, and my question is then whether or not this can contribute to explaining the failures of both directives.

The significance of the organisational structure and the administrative culture will be discussed separately. I elaborate on the structure through which the directives have been implemented and the administrative culture existing in the sectors. The explanatory value of the perspective is then discussed, before I make my preliminary conclusions.

5.1 Organisational structure

The argumentation of this variable is based on the significance of administrative specialization. The way the administration is organised influences which considerations are taken into account and leads to different patterns of co-ordination and conflict. These are assumed to influence the decision-making process. My assumptions were that implementing directives through an organisational structure with close co-operation and contact is likely to lead to a successful output, while administrative conflicts are likely to cause failure.

Environmental policy and administration

Norwegian environmental policy is based on the sector responsibility approach. According to this, each ministry is in charge of policy goals within its sector. This has led to a need for co-ordination between the ministries and the various divisions and units. Furthermore, the environmental organisation in Norway may

be found at different levels. In the central administration, the ME has a number of subordinate agencies with various responsibilities. These agencies are often delegated responsibility on professional, technical and routine matters. At the regional administrative level there are County Environmental Departments acting as instruments for the central authorities for regional implementation. These departments have responsibilities regarding the enforcement of the Pollution Control Act on municipal sewage treatment, municipal waste and regulation of smaller industrial pollutants (Jansen and Mydske 1998). The Norwegian municipalities have a certain degree of autonomy and are assigned tasks from the national level. Examples are pollution abatement, the planning of water supply and water management, land use and other aspects of physical planning (ibid.).

5.1.1 The significance of structure for the Urban Waste Water Directive

Vertical distribution of responsibilities

The Urban Waste Water Directive is classified as an environmental directive, and is therefore primarily the responsibility of the ME. Since the directive for a long period of time was considered to cause no major changes in an existing policy, few actors other than the ME, its subordinate agency SPCA and some professional agencies were involved in the process. The work of the administration was mainly concerned with the classification of sensitive areas. County Governors were to a certain degree involved, but only to give comments on policy and proposals.

The Urban Waste Water Directive has been, and is going to be, implemented through a structure of vertical distribution of administrative responsibility. The Norwegian municipalities have been given responsibility for water management, including waste water, but it is the central administration which issues the guidelines on environmental policies. Several levels of governance cause more veto points, and a successful implementation of the Urban Waste Water Directive is dependent on the compliance of the municipalities. In Norway the municipalities have a strong tradition of self-governance, rooted in values of democracy and the principle of subsidiarity. Hence, the decentralisation of the

application of Community law brings in elements of autonomy that may hinder a smooth implementation. A main feature of municipal environmental politics also seems to be that local problems are more of a concern than global ones (Jansen and Mydske 1998). Looking at a more general picture, there has been a lot of local opposition towards implementing EU directives in general, and also towards expensive upgrading of treatment plants.

Agreement and little conflict – so far

The implementation of the Urban Waste Water Directive has so far mostly been handled by the central environmental administration. When the proposal for a new regulation is ready it will be sent out for comments, and different actors at different levels (local and regional) are expected to become more involved. However, this study only examines what has happened up to the present (February 2003).

Obviously, implementing legislation is easier when there is only one ministry involved. The opportunity to push things forward is then greater, as there are less actors with interests and preferences involved. This can be illustrated by the co-operation between the ME and the SPCA, which has been described as very good throughout the entire process (interview). Formally, they have the same goals and intentions, which is following up on the commitments from the EEA Agreement and improving the environmental state of Norwegian recipient waters. Furthermore, the SPCA is a subordinate unit of the ME and is obliged to follow directions from their ministry. The waste water sector also has a reputation for being very centralised in Norway, although water management is a local task (interview).

Nevertheless, the central administration has needed to include the municipalities in the transformation process of the Directive. The county governors were involved at an early stage because they have controlled the environmental policy of the municipalities on waste water through a licence system for discharges. They were contacted by the SPCA as early as 1994 and asked to give technical

assistance on the requirements and consequences of the directive. Although there was some confusion and frustration in their responses, no direct resistance was stated. This was most likely due to the fact that the directive was not believed to cause any major changes to the existing policy in the areas. Nor was a readjustment of the division of responsibility between the ME, the SPCA and the Environmental County Governors deemed necessary.

The municipalities and the counties also stated their opinions on the directive after being asked by the central administration. Although they did not actually oppose the policy, they were reluctant. A lot of money has therefore been used during the last years on making impact assessments, in order to qualify as an exceptions to the rules in the directive (interview). This has been done although the SPCA specifically has asked the municipalities not to, because they expect that few dispensations will be approved.

There have been few conflicts between the local and central administrative levels regarding the directive, but the 1990s were in general characterised by many challenges and arguments on municipal waste water. Especially the building of new plants for the removal of nitrogen was controversial. However, these were requirements Norway had to follow up due to the North Sea Declarations and the aim of reducing the discharges of nitrogen by 50 per cent within the year 1995 (Skjærseth 1999:113). Consequently, the articles of the directive concerning nitrogen removal have caused less conflict between the ME/SPCA and the municipalities than they might otherwise have done.

In the early stages of the process, the relationships between the administrative units were unproblematic because there really was not much to disagree about. However, the implementation of the new regulation is expected by the involved parties in the administration to cause resistance and disagreement. One of the reasons is that both the municipalities and the professionals on the subject share the opinion that today's policy is good enough. Implementing the directive literally is not expected to lead to an improved environmental state of the

recipient waters. This naturally influences the motivation for following up on the Community law at the local levels (interview). A good illustration of what to expect is the city of Trondheim and its refusal to follow treatment requirements imposed on them by the County governor (see part 3.1.2). This was originally one of the factors that initiated what may be described as the second phase of the implementation process. Because protests from the municipalities are anticipated, the SPCA and the ME have deliberately chosen to implement the directive through a regulation, as opposed to continuing with the license system. In this way, less pressure is put upon the county governors and less discretion that deviates from the requirement of the directive is possible.

To sum up, the co-operation between the actors involved in the implementation of the Urban Waste Water Directive can be described as agreeable and involving little conflict. According to my assumptions, a successful output was then expected. The empirical evaluation shows that the directive has a low degree of implementation, and a natural conclusion is therefore that the institutional perspective on organisation structure cannot explain the directive's score at this stage in the process.

5.1.2 The significance of structure for the Nitrates Directive

Administrative fragmentation

Whereas the Urban Waste Water Directive is an example of vertical distribution of responsibilities, the Nitrates Directive has had a horizontal division of responsibilities. Hence, the work on the directive has been divided between two ministries and one directorate. This is because the directive concerns agricultural issues, but is classified as 'environmental' by the EU. Hence, according to the sector-responsibility approach, both the ME and the MA have been involved, and so has the SPCA. The ME has been in charge of the bureaucratic following up of the directive, including co-ordination and contact with ESA, whereas the MA has dealt with the professional parts and how to fulfil the requirements with existing or possible instruments.

The responsibility in the ME has also been split between different divisions. The Pollution division in co-operation with the SPCA has handled the designation of the vulnerable zones. The Nature Management division has been in charge of co-ordination with the agricultural sector. The administrative structure for dealing with the directive is also a result of the organisational structure of the agricultural sector. Until the summer of 2001, when the Norwegian Agricultural Authority was established, the MA did not have any subordinate directorates. They had therefore been more accustomed to working with technical issues than other ministries. During the implementation process of the directive, the SPCA in a way worked as a subordinate division both for the MA and the ME. This structure has been more complicated than responsibility which only goes through *one* line.

Shared responsibilities and delayed results

The organisational structure seems to have been an important explanation for the Norwegian failure to formally implement the Nitrates Directive. The directive has from the very beginning been the shared responsibility of many actors and units, and this has created a need for co-ordination.

The work with the implementation has been co-ordinated through working groups, direct contact and meetings in the EU Nitrates Committee (interview). However, according to an informant, the co-operation has been a bit difficult. The number of participants in the process and chains of action have caused delays and made the process complicated. It has for instance been slowed down because contact between the SPCA and the MA has been going through the ME. Disagreement has also been the result of different approaches of the ministries to the implementation. The MA has been interested in following up on the directive as a part of the North Sea Declarations. By doing so, it was expected to be easier for the farmers, as they would not have to conduct themselves according to numerous requirements that were partly about the same things. The ME has been interested in a literally correct implementation. Furthermore, the ME/SPCA and the MA disagree on the necessity of making separate action programmes.

Although the ME has asked the MA to do so, the MA has no intention of following up on this issue. The MA is also delayed on issuing the reports because they operate with their own interpretation of the deadline (interview). These are the main factors that have given the directive a low score on the implementation output, and hence the correlation between administrative structure and output failure is evident.

To sum up, the Nitrates Directive has been implemented through a fragmented system of horizontal specialization. Many actors have been involved in the process. Combined with professional challenges, this has caused delays in the output. The two ministries and the directorate involved have co-operated well, but they disagree on some issues. A consequence has been that the MA has not followed up on some of the requirements, and the directive has therefore not been successfully implemented. This is combined with the fact that the designation of the vulnerable zones was not done within the time limits. Hence, the failure of output is in accordance with the theoretical assumptions, and the organisational structure can be said to be an important explanation variable for the low degree of implementation of the Nitrates Directive.

5.2 Administrative culture

I have now found that the organisational structure seems to be the main explanation for the low degree of output of the Nitrates Directive. However, the investigation of the Urban Waste Water Directive needs to continue. The question then is whether the administrative culture and core values can explain its failure? Furthermore, can the variable be a common factor accounting for both directives' low score on the output?

This part of the perspective focuses on values and traditions, which are infused in organisations and believed to affect the output of the implementation. More specifically, there are core values, expressed in for example different principles, routines and instruments. If the new policy contradicts them, a high adaptation pressure and difficult implementation is the result. My assumptions were that

directives in accordance with the core values of the administration would lead to low adaptation pressure and successful implementation, whereas directives in conflict with the core values would lead to high adaptation pressure and failure.

Environmental policy traditions in Norway

There are some general principles of governance that are being used in the environmental sector in Norway. Different ones have been in fashion for the last decades, but paramount now is sustainable development. Others worth mentioning are the precautionary principle, the notion of critical loads on nature's carrying capacity, the polluter pays and principles related to cost effectiveness (Jansen and Mydske 1998:195).

Because these principles are so vague that they cover almost all environmental legislation, it is important to look at how they are carried out in practice. Norway has a tradition for using economic instruments, and has therefore based the policy more on voluntary compliance and incentives than what is normal in the EU. The community law has to a larger extent relied on legal instruments with mandatory requirements (interview). I now continue by taking a closer look at the principles and instruments in municipal waste water and the agricultural sector.

5.2.1 The significance of core values for the Urban Waste Water Directive

Norwegian waste water policy

Norway's policy on waste water is recipient orientated. This means that the requirements for the plants are decided in accordance with estimated absorption capacity of recipient waters. Local cost-benefit evaluations are also used, while the polluters pay- and the precautionary principles have formed the background of the initiatives (archive 1991/1). The polluters pay through fees on municipal waste water, and in 1999 the incomes from the fees constituted 94 per cent of the total costs for the municipalities (SSB 2001:172). Economic subsidies are given to certain municipal treatment initiatives and environmental technology for the development of new treatment methods.

National regulations have been adopted on 'Separate treatment plants', 'Treatment of sewage sludge' and 'Training of personnel for assuring high quality and uniform practice in the treatment processes'. The government also initiated a project called 'Cleaning up the waste water sector within year 2000' in a white paper from 1988-1989, a goal which has been repeated in later white papers (Stortingsmelding no. 46, 1988-1989, and no. 58, 1996-1997). The policy has mostly been based on chemical treatment and the removal of phosphorous. In later years, installations for nitrogen removal have also been installed in some places to reduce the discharge of nitrogen into the North Sea. However, the main requirement in the Urban Waste Water Directive is secondary treatment, and the definitions and removal targets here are based on biological treatment and the removal of organic material. Hence, the requirements of the directive mean not only an upgrading of the Norwegian plants, but a re-adjustment of the practice. The same problem applies for so-called primary treatment. Along the Norwegian coast there is an extensive use of filters, but these do not remove enough organic material to satisfy the requirements of the primary treatment in the directive. Accordingly, large efforts are needed also here. When it comes to tertiary treatment, further treatment of phosphorous and nitrogen is necessary. This has not been a problem for Norway to fulfil because of the new plants built in connection with the North Sea Declarations. There is some uncertainty though, on whether or not the tertiary treatment in the directive also should include organic removal as in secondary treatment.

Little match and high adaptation pressure

There is no doubt that administrative culture and core values have been of great importance for the Norwegian implementation of the Urban Waste Water Directive. Already in the first Norwegian evaluation from 1991, it was written that Norway was relying on different techniques and methods than what was usual in central Europe. The fact that the directive has requirements concerning the discharges themselves, whereas Norway traditionally has focused on the water recipients when setting the standards, has been one of the main challenges.

The formal transformation in 1996 was based on an interpretation of the directive that accepted the Norwegian way of treating waste water. At an expert meeting in Brussels in 1991, Norway was orally told by a representative from the Commission that chemical treatment and the use of filters would be good enough to fulfil the requirements (interview). But when ESA later handled the case, they have only been able to rely on the EEA Agreement itself and its specified exceptions in their evaluation of the Norwegian implementation. Hence, the statement from 1991 has no juridical basis (interview). Because of the way it was interpreted, the directive was considered to be recipient orientated and hence in accordance with Norwegian principles of waste water treatment. Requirements that were not already covered, were planned to be implemented as a part of the more general policy in the area. A successful implementation seemed to lie ahead. There is however, reason to ask whether the administration really thought that they would not have to follow up on the directive literally. The EU Commission has been very strict on the member states' implementation of the Urban Waste Water Directive, and has not accepted poor follow-ups. Hence, the administration may actually have delayed the process on purpose because of the high degree of adaptation pressure (interview).

When using the literal interpretation, the directive has clearly deviated from Norwegian traditions on municipal waste water. As a consequence, the adaptation pressure has been strong and causing problems for the administration. Regarding principles, the directive is in accordance with the Polluter Pays Principle, but in the case of Norway it has not complied with the cost effectiveness principle. The directive has been considered to be far more expensive than what is necessary to protect the recipient waters. Furthermore, neither Sweden nor Finland was EU-members at the time when the directive was adopted. The directive was therefore only adjusted to the challenges and problems of the central European countries. Also regarding nitrogen removal, the traditions may have had an influence. Norway has mainly focused its efforts on removal of phosphorous, which causes local damage to a larger degree than nitrogen. The efforts here have been successful, and Norway has managed to

reduce the emissions of phosphorous into marine waters. Accordingly, removal of organic material and nitrogen has not been an issue, and the attitude has been that Norway's discharges are very small compared to other countries.

To conclude, the Urban Waste Water Directive has been in conflict with administrative core values. It deviates both from the cost effectiveness principle, and more specific principles of recipient-orientated waste water policy based on the capacity of the recipient waters rather than a strict regulation of the discharges themselves. Failure of implementation output is therefore in accordance with my assumption on high adaptation pressure.

5.2.2 The significance of core values for the Nitrates Directive

Policy traditions in the agricultural sector

Voluntary agreements and the use of 'carrots' as instruments dominate the Norwegian agricultural policy. Furthermore, subsidies have often been employed to make the farmers change their actions. These are distributed as a part of the annual settlements between the central government and the agricultural organisations (The Agricultural Agreements). Although the Polluter Pays principle is the basis principle, it has its own way of being applied in the agricultural sector. Polluters do not actually pay, but they are given less subsidies if they do not follow up on the environmental initiatives. The instruments are supposed to be positive incentives for change of behaviour, and the subsidies are part of a total amount of money from the government that regardless of initiatives are to be distributed among the farmers (interview). Initiatives are also meant to match the cost effectiveness principle.

Matching traditions and low adaptation pressure

Just as for the Urban Waste Water Directive, the Nitrates Directive was considered uncomplicated for the Norwegian government in the beginning of the 1990s. Existing legislation and initiatives were assumed to match the requirements of the directive. The small changes that had to be done, were also

in accordance with the policy in the area. Therefore, the administrative traditions created no problems for the output part of the implementation.

The good match between the directive and Norwegian policy was partly due to a prior variable. The North Sea Declarations were signed before the adoption of the Nitrates Directive, and created a need for improved environmental efforts in agriculture. Several initiatives resulted. Many of these were the ones which have later contributed to a match between the directive and the Norwegian policy.

Although the directive and the policy traditions in the agricultural sector have been rather similar, the fit is not perfect. The EU has, for example, been sceptical to references on more diffuse projects and plans. The distinction here goes between the juridical 'should do' which is the policy tradition in the Norwegian agricultural sector, and 'have to do' which is practised by the EU. There have also been some differences in the instruments applied. Norway has combined the legal requirements with economic subsidies, and in this way made it easier for the farmers to comply. The subsidies have been given to farmers in the vulnerable zones for the implementation of specific initiatives. Whether or not this is an example of the Polluter Pays principle is, as already mentioned, a subject of discussion. Furthermore, Norway has given more priority to reduction of phosphorous than to reduction of nitrogen. Since nitrogen has not really been an issue in Norwegian agriculture, it has been a bit complicated to comply with the requirements. Whether or not the following up is actually good enough depends on the ESA evaluation of the final reports. Given the example of the Urban Waste Water Directive, there might be a surprise awaiting.

Summing up on the Nitrates Directive, it has not really been in conflict with core values in the administration. Hence, the adaptation pressure has been low and a high degree of output should be expected. However, the Nitrates Directive scored low on output, indicating little explanatory value of the perspective. But it is then important to pay attention to my reasons for defining the directive with output failure. The MA has not created new action programmes and not sent

reports to ESA. If looking at the more substantial parts, there have hardly been any problems. My conclusion is therefore that the Nitrates Directive illustrates the significance of the administrative culture as an explanation variable. However, combined with other variables the effect may be changed. In this case, the administrative structure hindered a successful implementation following from the low adaptation pressure. Administrative culture should therefore be used in connection with other variables when explaining the degree of implementation.

5.3 Comparative discussion and preliminary conclusions

5.3.1 The organisational structure

Both directives have been implemented through fragmented administrative systems. The Urban Waste Water Directive is an example of a vertical distribution of responsibilities, whereas the Nitrates Directive exemplifies a horizontal structure. Therefore, the challenges of the implementation have to some degree been different. So far, the process for the Urban Waste Water Directive has been characterised by consent between the national level and the counties. The municipalities have to a small degree been involved, with the exception of Trondheim. I believe that this is because the directive up to now has not had any specific implications, and conflicts are expected when the new regulation is sent out for comments. Hence, the structural variable can therefore not explain the output failure of the Urban Waste Water Directive at present.

Implementing the Nitrates Directive has been a shared responsibility between the environmental and agricultural units in the administration. The work has been coordinated, but there have been some elements of disagreement between the ME and the MA. These discrepancies have mainly concerned the formalities required in the directive, but as long as no reports on the agricultural initiatives have been turned in, one cannot be sure about the compliance on all the substantial requirements either (interview). For instance, there are some specific requirements on the use of manure which Norway has chosen not to follow up. The MA expects this to be accepted by the ESA, but the implementation of the

Urban Waste Water Directive showed that one cannot take such things for granted. It is therefore clear that the structure is a very important variable for explaining the failure of the Nitrates Directive. However, the organisational structure can not explain why *both* directives had a low score on their output. It did account very well for the score of the Nitrates Directive though, and I believe it to be the main explanatory variable for its output failure.

5.3.2 The administrative culture

The Nitrates Directive has to a large extent matched the administrative traditions in the agricultural sector, and the pressure for adaptation has therefore been low. The policy has relied on existing provisions, which have been a combination of national initiatives and the following up of the North Sea Declarations. Given my assumption, this should have led to an easy output process. For the Urban Waste Water Directive, the situation has been the opposite. The EU legislation has not been in accordance with Norwegian policy on waste water, although both are defined as recipient orientated. The directive uses different standards and instruments, and the pressure for adaptation has therefore been high. Administrative culture and adaptation pressure then seem to be the main reason for failure of the Urban Waste Water Directive, whereas the Nitrates Directive matched the core values and still was not properly implemented. Nor can the adaptation pressure explain both directives' score on the output.

5.3.3 Preliminary conclusions

The comparison above indicates that the two institutional variables must be used complementarily in order to understand the implementation processes of the cases. While the implementation of the Nitrates Directive shows that structural hindrances can prevent a successful output although the core values are matching, the Urban Waste Water Directive exemplifies that structural variables should also be combined with adaptation pressure. In the latter case, it was the adaptation pressure that was the most important factor. For the Nitrates Directive it was not the substantial part of the requirements that was the obstacle,

but the formal ones. This seems to be the reason why the directive scored low on the output although the adaptation pressure was insignificant.

This chapter has also revealed that there are internal differences when it comes to administrative core values. This variable is normally used in comparative studies of countries, where the countries' administrative traditions are seen as a whole. However, the EU legislation seems to meet different degrees of adaptation pressure according to which sector it is to be implemented in. This ought to be taken into consideration in future analyses of implementation.

6 Influence of interests

I have now identified the main explanations for the directives' low score on the output. The successful implementation of the Nitrates Directive has been explained by the North Sea Declarations. However, finding the reason for outcome failure of the Urban Waste Water Directive remains, and I will search for the cause with the help of the interest-based perspective. Since the perspectives of this study are considered to be complementary, I will also examine whether or not the explanations of the output failures and the successful outcome of the Nitrates Directive can be used complementary.

The structure of the chapter is as follows: After a short introduction, I go on to identify the target groups of each directive and their incentives for behavioural changes. I then continue with their reactions, to see whether these have influenced the processes. In the last section, I study the influence of the administrative incentives on output.

6.1 How interests affect implementation

This perspective focuses on individual interests, intentions and resources. At the administrative level, this can have an influence on the output, as the degree of implementation becomes a result of bargaining between different actors with various preferences. The sub-national target groups can have an influence on the final outcome, as their change of behaviour is dependent on costs and benefits implied and the distribution of them.

My assumptions for the outcome were that if there were higher costs than benefits at sub-national level, low degree of implementation was expected. The opposite should result in success. However, if the costs were concentrated and the benefits distributed, I assumed a low degree of implementation. For the output, opposition at administrative level was assumed to result in low implementation output, whereas support for the directives should give a high degree of implementation.

6.1.1 The significance of interests for the Urban Waste Water Directive

The target groups in municipal waste water

Identifying the target groups of municipal waste water is a bit complicated. According to my definition, target groups are actors who cause pollution and must change their behaviour to fulfil the requirements of the policy in question (Skjærseth and Wettestad 2002). In this case however, there are different actors in different parts of the process. The main producers of waste water are private households and industry. They also pay for it, and are therefore indirect target groups. However, it is the municipalities who are responsible for preventing the pollution through the treatment plants. It is also the municipalities who need to change their behaviour in order to reduce the pollution. They will therefore be considered as the target group in this analysis. The interests of the municipalities regarding water- and treatment plants are attended to by an organisation called NORVAR (the Norwegian Water and Wastewater Works Association). Although this is a small and not very well-known organisation, its involvement is considered to be of some importance and therefore included in the analysis.

Incentives for behavioural change

The Urban Waste Water Directive is an extremely expensive piece of legislation. Almost all of the EU member states have faced problems of implementation, and they have mostly blamed it on the expenses. In Norway, the costs have been difficult to estimate precisely because the municipalities so far do not have a complete overview of which plants that are affected by the directive, which initiatives that will be necessary and whether dispensations will be allowed. However, the private company 'Aquateam', which I referred to in chapter three, has estimated the cost of upgrading chemical treatment plants to the requirements for secondary treatment to be close to 360 million NOK. This estimation has a high degree of uncertainty however. The SPCA expects that the total costs of upgrading plants to secondary treatment in sensitive and less sensitive areas will be about 400-500 million NOK (archive 30 Apr 2002). It is also worth noticing that an upgrading of smaller plants will cost more per customer than an equivalent upgrading of a bigger plant. The costs of fulfilling the requirements of

primary treatment in less sensitive areas are very difficult to estimate. The municipalities along the western coast of Norway are assumed to face new investments of between 1 and 1.5 billion NOK. In turn, this means an increase in the fee for the average customer of 400-900 NOK per year. All these numbers are only rough estimates because there is still much uncertainty concerning the documentation and requirements (archive 30 Apr 2002). When it comes to the environmental benefits, they are expected to be minimal (interviews). It is, however, always more difficult to measure environmental effects than to make estimates of the costs, as they tend to be more diffuse and uncertain.

Both the costs and the benefits of the directive are widely distributed throughout society. In accordance with the Polluter Pays principle, the upgrading of the plants means increases in the fees, and future costs will therefore be distributed among the private households and industries, as the municipalities must build or improve the treatment plants. No governmental subsidies are to be distributed, as opposed to the following up on the North Sea Declarations. Furthermore, the incentives for paying are likely to be low because the Declarations already have resulted in higher water charges. The areas defined as sensitive face stricter requirements than less sensitive areas, and this should indicate a concentration of costs. However, in the case of Norway it seems to be the other way around. Due to the 50 per cent reduction of nitrogen requirement in the North Sea Declarations, Norway has already built new plants in Eastern Norway. The costs are then mostly covered here, and this makes the total costs of implementing the Urban Waste Water Directive more dispersed.

The benefits are also distributed, as improving the environmental state of the recipient waters in general is the aim of the directive. Furthermore, the benefits are diffuse and have few local effects. One exception though is the disposal of sludge. Reductions in emissions are required here, and increased primary treatment is assumed to give concentrated positive effects at several beaches along the coastline (interview). Local problems of eutrophication may also to some extent be solved.

Consequently, the size of the costs and benefits, and their distribution, should point in the direction of a low degree of outcome.

Reactions from the target groups

The Urban Waste Water Directive was for a long period of time assumed to not cause any need for important changes of behaviour. There were therefore few parties involved and interests expressed. However, the change in interpretation that was forced upon the Norwegian administration gave rise to protest from among others NORVAR. They contacted the ME and the SPCA in 2001 and expressed their discontent with the Urban Waste Water Directive (archive 14 June 2001 and 27 Aug 2001). Their main arguments were that using a strict interpretation of the directive meant taking a step backwards from the recipient-oriented policy that had been followed for the last 15-25 years, towards a measure-oriented policy. Full implementation of the directive would mean an expensive up-grading of Norwegian plants to satisfy the requirements for organic material, and it would have little or no effect on the water environment. They found a future change of practice to be 'little meaningful, a waste of resources and an unnecessary increase in the fee paid by customers' (ibid.). These points of view were to a certain degree shared by the involved parts of the administration, and with professionals working with the issues (interviews). A report from the Norwegian Institute for Water Research (NIVA) written in 2002 supported the conclusion. One exception though, concerned the upgrading of filters along the West Coast and up north. This was expected to lead to further reduction of contamination of the ocean floor, waters and beaches, and reduce the conflicts of interests between the polluters and the users of the recipient waters (archive 30 Apr 2002).

Although NORVAR has been discontented, the municipalities have so far not really opposed the directive. But they have not changed their behaviour either. This may be explained by lack of knowledge. Because the administration for a long period of time communicated that little had to be changed, the

municipalities did not pay attention to the directive. Neither did the distribution of costs and benefits indicate problems. However, the implementation costs of the directive are estimated to be much higher than the benefits for households and municipalities. The costs can therefore have prevented an adaptation to the requirements by the municipalities. Future outcome difficulties are also to be expected due to the substantial costs of the implementation.

Administrative interests and their influence on the output

The above mentioned arguments have influenced the process of implementation at the administrative level. High implementation costs and low benefits are not strong incentives to create new legislation. Although resistance from the sub-national level has not been expressed very strongly, the SPCA has co-operated with NORVAR and others, and has been conscious of the implications. They have also been reluctant to put pressure on the municipal economy.

In general, the central authorities have been aware that municipal resistance is to be expected when the new regulation is to be carried out. However, because of the vertical specialization this is difficult to avoid. The decision-makers have also had in mind the way the municipalities reacted on the demands for nitrogen removal following the North Sea Declarations. There was fierce opposition at local level, and all municipalities involved sent appeals to the ME (Skjærseth 1999). This 'shadow of opposition' is not a good basis for forcing even stronger requirements on the municipalities, and can to some degree explain why the administration was hesitant towards a literal implementation of the directive in 1994. According to informants, the administration was not sure that their interpretation of the directive would be accepted by the ESA. They hoped for the best, but the necessity of a new regulation did not come as a shock to them. It was also in the interest of the administration to find an easy solution to the directive, since it was just one of many in a busy period of incorporating the EEA Agreement into Norwegian law.

The significance of the new Water Framework Directive of year 2000 from the Union should also be taken into consideration. This directive is still under evaluation in the EFTA/EEA states, but is most likely to be incorporated into Norwegian legislation in the near future. The Framework Directive is to establish a common approach to the question of water pollution in the Union, and it introduces clean-up and maintenance efforts based on river basins rather than political boundaries. Its main goal is for all waters to achieve 'good quality' status by 2015 (ENDS, Environment Daily 2003). Both the Urban Waste Water Directive and the Nitrates Directive are now parts of this new directive, which has far reaching targets and involves many actors at different levels in society. It is assumed to be of great importance for Norway, and is most likely to be very expensive to implement (Miljøverndepartementet 2003). Hence, the delays in the implementation of the Urban Waste Water Directive may partly have been caused by administrative reluctance, as they might have believed it was possible to wait for the new directive before they carried out the requirements.

In sum, the Urban Waste Water Directive is extremely expensive to implement, and the benefits are considered to be very small compared to the costs. This is likely to cause opposition among the target groups, and the administration has been aware of this. The memory of earlier protests has also made it in their interest to avoid future conflicts. Moreover, they have to some degree found the directive to be a waste of resources. The administrative interests can therefore explain why the implementation of the directive was first based on a wrong interpretation, and why the implementation work during later years has been so delayed. However, the explanation must be seen in relation to the high adaptation pressure which was discussed in chapter five.

6.1.2 The significance of interests for the Nitrates Directive

The target groups in the agricultural sector

The main target groups in agriculture are the farmers. They are the ones who are polluting, and who will have to change their behaviour in order to reduce agricultural pollution. They are represented by two organisations: the Norwegian

Farmers' Union and the Norwegian Small-Holders' Union. Because it is methodologically impossible to look at the behaviour of all farmers, I concentrate on these organisations and the way they have responded to the directive on behalf of their members.

The agricultural sector was traditionally described as an 'iron triangle', with close contact between private organisations, public administration and parliament. Although there still are connections, the relationship has changed in the last decade. The system is not as segmented as it used to be, and the farmers' organisations do not exercise as much influence. I will therefore not pay particular attention to segmentation (Skjærseth 1999). However, it is important to be aware that the contacts have remained tight, and this naturally influences co-operation. It may also be reflected in the administrative interests.

Incentives for behavioural change

Since the directive has been implemented as a part of the North Sea Declarations, the costs and benefits of the directive itself are hard to measure. I have chosen to go around the problem by looking at costs and benefits of the initiatives that have been carried out in accordance with the directive. These have to a large extent been entirely or partly subsidized by the government, and loans have also been given. Because the farmers have more or less been paid to change their practices in a more environmentally friendly direction, they have not directly faced the costs. However, some of the initiatives have required funding by the farmers and hence put some pressure on them. Overall, the directive has not been as expensive in Norway as in the EU countries because nitrates pollution is less of a problem.

Costs must be measured against benefits. In general, the change of practices seems to have had positive consequences for the farmers. It is also expected to give financial gains over a period of time. However, it was a challenge to get the farmers to consider manure as a resource. A while ago they used both inorganic fertilizers and manure on top of each other on the fields. This was very expensive

and hostile to the environment as well (interview). Measuring the benefits is difficult though, and it is hard to say whether or not they can match the costs.

The costs of the directive have been concentrated because the directive aims towards the farmers themselves. In addition, initiatives are only required in the vulnerable zones. The farmers in these areas have therefore faced tougher financial strains compared to farmers in the rest of Norway. The subsidies have, however, levelled much of this difference. The benefits have been dispersed, as water pollution from nitrates seldom affects the farmers themselves. Run-offs influence the environmental state of the recipient waters in general, but some of the initiatives have had local beneficial effects for the farmers. For example, change of soil practices leads to development in a more profitable direction, as the soil is better preserved (interviews).

Given my theoretical assumptions, concentration of costs and distribution of benefits could cause implementation problems. In this case though, the costs have been small and I would therefore assume a co-operative attitude among the farmers. In the following section I take a look at their reactions, to see whether these are in compliance with the assumptions.

Reactions from the target groups

There have hardly been reactions from the target groups specifically towards the Nitrates Directive. The discussions have concerned initiatives and instruments in general, and the focus has been on the North Sea Declarations. Most of the farmers have probably not even been aware of the existence of the directive. Many of the requirements have also been included in the Agreements on Agriculture. The farmers' organisations have been involved in these processes, and there seems to be general agreement on the need to reduce agricultural pollution. The distribution of the costs and benefits did not assume for such a positive attitude, but the cause for this is probably to be found in the subsidies. Willingness to change behaviour has almost been proportional with the economic support given. As long as the government has paid for the initiatives, the changes

have not been so difficult to follow up. However, this does not mean that all the farmers in the vulnerable zones have been pleased with the initiatives and followed up on them. There has been reluctance, and some have also opposed the new practises. But overall, the result has been positive (interview). This may be partly because there have been threats of sanctions against those who did not follow the new requirements.

In sum, the importance of the costs-benefits assumption is clearly shown. Although the costs were concentrated and the benefits distributed, this was compensated by the fact that the costs were low to the farmers because of subsidies. The perspective, together with the strong influence of the North Sea Declarations, can then be said to have contributed to a successful outcome of the Nitrates Directive.

Administrative interests and their influence on the output

There has been some opposition in the administration against implementing the directive. The work has been considered as both a waste of administrative resources and to give little consideration to the farmers who for example would have to conduct themselves according to several almost identical action programmes. There are also some specific requirements that the MA has not included in the Norwegian instructions and legislation because they would cause problems for the farmers and would have little environmental effect (interview).

Administrative opposition was assumed to cause output failure. In this case, the MA has opposed parts of the requirements, and the individual interests in the ministry have caused delays and failure. The output failure of the Nitrates Directive can then mainly be seen as a result of both structural hindrances (see chapter 5) and administrative interests in the MA.

6.2 Comparative discussion and preliminary conclusions

The Urban Waste Water Directive and the Nitrates Directive have been very different in regard to implementing costs and benefits, and this has clearly been

of significance for their different score on outcome. Implementing the Urban Waste Water Directive would mean great expenses for the target groups, whereas the Nitrates Directive has been an economic burden for the farmers only to a small extent. Their necessary behavioural changes have been covered by governmental subsidies.

The empirical elaboration showed that the farmers implementing the Nitrates directive have been rather positive to the new environmentally friendly requirements. They seem to have realised that changes are needed to improve the water quality, and because of the subsidies, the changes have not been very heavy on them either. Concentrated costs and distributed benefits should have caused implementing problems, but this has been outweighed by the fact that the costs have been very low and that there have also been some local benefits. This shows that it is the size of the costs that really matters. Successful outcome has not been too great a challenge, and the perspective can be said to contribute to the explanation of success for the Nitrates Directive. In the case of the Urban Waste Water Directive, the municipalities in charge of the waste water are not very pleased with the new demands that are soon to be issued by the administration. Tension is bound to rise when the new regulation with its implied costs is introduced, and problems are likely to occur. This seems to have contributed to the lack of adaptation so far, and it will probably take time to turn the failure into a success.

Both directives have shown that administrative reluctance is important for the output. In the case of the Urban Waste Water Directive, the administration has been hesitant due to earlier opposition. They have also found the directive to have an insignificant environmental effect. In the agricultural sector, the MA has not been interested in creating separate action programmes and following up on more specific requirements, as they are believed to be covered by other initiatives. It is uncertain whether the effect of the administrative interests would have been stronger if the adaptation pressure had been moderate, and not high

and low as with the Urban Waste Water Directive and the Nitrates Directive respectively (see part 2.2.3).

The conclusion on the interest-based perspective is then that the cost-benefit dimension can explain the low output of the Urban Waste Water Directive. It can also support the North Sea Declarations on explaining the success of the Nitrates Directive. As for the administrative interests, they have contributed to the low output score of both directives.

7 Summing up and concluding

In this last chapter of my thesis, I sum up the empirical scores of my two cases, especially focusing on the similarities and differences between them. Furthermore, I conclude on the independent variables and their explanatory value for degree of implementation. The complementarity of the perspectives is also discussed, together with other possible explanations for the directives' success and failures.

7.1 Main empirical findings of the two cases

My first research question concerned the degree of implementation of the two directives. I found that both the Urban Waste Water Directive and the Nitrates Directive had a low degree of implementation on the output part. The Urban Waste Water Directive was transposed into Norwegian legislation, but it was based on an erroneous interpretation and therefore not carried out correctly by the administration. A new regulation is expected in 2004, but this implies a substantial delay. The requirements of the Nitrates Directive have mostly been covered by existing legislation and initiatives, but some of the requirements have not been followed up properly. Nor has ESA received the required reports within the deadlines. The output was therefore defined as a failure.

As for the outcome, the Nitrates Directive had a high degree of implementation whereas the Urban Waste Water Directive scored low. There have been behavioural changes regarding municipal waste water, but not as a consequence of the EU directive. A process of reducing discharges has been started, yet many of the initiatives are not in compliance with the requirements of the directive. Because of this, several of the investments have been in vain if the directive is to be interpreted and implemented literally. A complete change of action will be needed, and this is expected to be very expensive. There have also been behavioural changes and reductions of discharges in the agricultural sector. These were results of processes which primarily were started to comply with the reduction targets of nitrogen and phosphorous in the North Sea Declarations,

but the implementation of the Nitrates Directive has later been combined with the ongoing initiatives and plans. Because of the positive tendencies in both discharge reductions and behaviour, the outcome of the Nitrates Directive has been defined as a success. The degree of implementation for both directives was summed up in a table (see table 7.1 below):

Table 7.1: Implementation scores

		OUTPUT	
		LOW	HIGH
OUTCOME	LOW	The Urban Waste Water Directive	
	HIGH	The Nitrates Directive	

7.2 Summing up the explanatory perspectives

The second part of my research question was how to explain the successes and failures of the implementation of the directives. I now go through the three perspectives which I used for my analysis, and conclude on their explanatory value.

7.2.1 Does the institutional environment matter?

The first perspective I discussed was the one concerning the institutional environment. I looked at the significance of pressure from the EU level and the degree of matching with international agreements. In both cases, the context seemed to have influenced the process, but there were different variables that affected their low scores on the output. For the Urban Waste Water Directive, the match with the North Sea Declaration was not very good, and this might have caused some of the difficulties. However, there had been substantial pressure from the ESA over the last years, something which should indicate success and not failure. For the Nitrates Directive, it was the other way around. The directive matched the North Sea Declarations and had experienced little

pressure from the ESA. The low ESA pressure may then have contributed to the failure. As for the North Sea Declarations, the match assumed for success whereas the reality turned out to be the opposite.

The North Sea Declarations are a main explanation for the successful implementation outcome of the Nitrates Directive. The directive strongly correlates with the requirements of the Declarations, and many initiatives had therefore been started already. Hence, the implementation of the Nitrates Directive was more or less incorporated in the work with the Declarations. Together they caused behavioural change among the Norwegian farmers. This happened even though the requirements of the Nitrates Directive had not been followed up on literally, and is the background for the directive's combination of low score on the output and high score on the outcome. The lack of ESA pressure did not cause any problems. For the Urban Waste Water Directive, it was of certain significance that the directive had such a low match with the North Sea Declarations. It was especially a challenge that many of the initiated projects in the field actually were headed in other directions than the demands of the Directive. This contributed to problems for the municipalities.

After analysing the directives' degree of implementation with the help of the institutional environments, I found that this was not sufficient to explain their outputs. Also remaining was a good explanation for the outcome failure of the Urban Waste Water Directive, and possible complementary explanations of the Nitrates Directive's high outcome score.

7.2.2 The significance of institutional factors

The next perspective of my analysis was the institutional, which included both organisational structure and administrative culture of the organisation. Its focus was only on the output, and it turned out to have high explanatory powers. For both the directives, the main cause of failure was to be found within this perspective. However, there were different elements that were decisive. A low degree of implementation of the Nitrates Directive could be explained by the

structure, due to differences of opinion between the ME/SPCA and the MA. The cultural assumptions were not met though. There was a low degree of adaptation pressure, but the directive still ended up as a failure. However, the reason for this was that the failure was due to formal obstacles rather than substantial. If the adaptation pressure had been higher, the directive would most likely also have faced other kinds of problems.

In the case of the Urban Waste Water Directive, the assumptions on the structure did not fit the empirical material, as there was close co-operation between the actors and yet the result turned out to be a failure. On the other hand, the administrative culture had a great impact, and was the main reason for the low score. Since the directive was in conflict with core values, the adaptation pressure became high and led to problems and delays. These cases clearly show the importance of combining the structure and administrative culture when studying implementation processes.

The institutional factors had then to a great extent explained the output failures of the directives. Finding the primary reason for the low outcome score of the Urban Waste Water Directive remained, and I continued the analyses by using the interest-based perspective.

7.2.3 Interests influencing the process

Interests, costs and benefits actually seem to have influenced all the implementation processes in my study. In both cases, the assumptions regarding administrative opposition matched the low degree of output. With the Urban Waste Water Directive, the ME and the SPCA were reluctant to implement the directive literally, and therefore used an interpretation that would mean less change of action for the target groups. In the case of the Nitrates Directive, the MA did not want to create another set of action programmes. This would mean doing the work twice, and at the same time they feared confusion among the target groups. Low implementation score became a natural consequence.

For the outcome, the cost - benefit assumptions did not quite match with the successful implementation of the Nitrates Directive. There were concentrated costs and distributed benefits, and this was expected to cause problems. However, in this case the costs turned out to be very low for the farmers because of subsidies. Furthermore, there were also estimated local benefits from changing the practices in a more environmentally friendly direction. This seems to have outweighed the consequences of the distribution of the costs and benefits. Together with the match with the North Sea Declarations, the cost dimension then could explain the successful outcome of the Nitrates Directive.

The Urban Waste Water Directive was quite the opposite of the Nitrates Directive regarding costs. Behavioural changes in the waste water sector are extremely expensive for the target groups, and this has contributed to a lack of adaptation so far. The significance of these aspects is also likely to increase in the future, when the new requirements to a larger extent are forced upon the municipalities.

7.3 Complementarity of the perspectives

With the help of the three perspectives I have managed to explain the directives' low score on the output. I have also found the reasons for failure of the Urban Waste Water Directive and success of the Nitrates Directive on the outcome. However, it was not always the same variables that explained their implementation, and they also had different explanatory powers. The main explanation for the output failure of the Urban Waste Water Directive, was the high adaptation pressure. However, this was supplemented by a reluctant administration and lack of match with international agreements. The cultural conflict of the Urban Waste Water Directive would not have been as important if it was not for the administrative incentive for choosing an easy process, combined with negative experience with forcing new treatment requirements on the municipalities. As for the Nitrates Directive, the reason for a low degree of output was primarily to be found with the organisational structure. The horizontal division of labour between the ME and the MA resulted in

disagreement and delays on several requirements. Also in this case, the structural problems had to be seen in connection with administrative interests. Low incentives in the MA for a literal implementation was a problem. The fact that the ESA did not pressure the Norwegian administration must also be mentioned as contributing to the failure.

With the Urban Waste Water Directive, the low implementation score on the outcome could be seen as a result of great costs. Little match with international declarations was also of significance. These were the same variables that could explain the success of the Nitrates Directives at this stage in the process. The main reason for its high degree of implementation was the close match with the North Sea Declaration. Moreover, this was supported by the cost-dimension. Since the requirements to comply with the Nitrates Directive were mostly covered by governmental subsidies, changing behaviour was not so hard for the farmers.

Hence, my analysis clearly shows that the perspectives should be used complementarily. Sometimes though, there seem to have been elements of competition between them. It is evident that the impact of the structure caused output failure of the Nitrates Directive, although match with international agreements and low adaptation pressure assumed for success. However, this had to do with the reason for defining the directive as a failure. It was more a question of formalities than one of content. The conflict of core values and therefore high adaptation pressure for the Urban Waste Water Directive was so strong that administrative co-operation and EU pressure was not sufficient to secure a success.

7.4 Other explanations of degree of implementation

It seems as if the perspectives have had good explanatory value for my cases, and that they have contributed to an understanding of the directives' implementation scores. But are there still any explanatory variables of significance that have been left out? After thoroughly scrutinising of the cases, I have found a few elements

that are worth mentioning. Perhaps the most important one concerns the outcome failure of the Urban Waste Water Directive. One of the causes for lack of behavioural changes was that no institutional or instrumental changes had been carried out by the administration. The target groups therefore had no incentives to change their behaviour, and many were not aware of the new requirements either. This connection was not explicitly described in any of the perspectives, yet it was an underlying assumption.

The second explanation also concerns the Urban Waste Water Directive, but focuses on the output failure. Since the directive is highly technical and complicated, there are few persons in Norway who have actually managed to totally understand its contents. The cause for the delays might therefore partially be found in professional difficulties and misunderstandings. My supplementary explanation number three, concerns the Nitrates Directive. The organisational structure and the co-operation between the different actors seem to have been important not only for the output, but also for the outcome of this case. The environmental initiatives on water pollution in the agricultural sector have pretty much been the result of bargaining between the involved actors in connection with the Agreements on Agriculture. The farmers have a strong influence on the framework of the policy, and there is a tradition for not carrying out legislation or demanding behaviour change without information and even co-operation in advance. This makes the policy easier to implement, and if an agreement has been reached between the farmers' organisations and the government, the policy is likely to be followed up (interview). In this case, the initiatives implementing the Nitrates Directive were subject of discussions and disagreement due to the North Sea Declarations. The policy was therefore rather easy to follow up by the target groups, because their interests had been taken into consideration in advance. It was also of significance for the outcome of the Nitrates Directive that the Norwegian zones were designated in the southeastern part of Norway where there is more grain cultivation than livestock. These areas are to a lesser extent affected by the directive, which is mainly concerned about livestock manure

(interview). Hence, there were not many farmers who were affected by the requirements, and there was naturally less opposition.

A last explanation worth mentioning is that both directives were adopted before the EEA Agreement was signed. The directives from this early phase are likely to have met different challenges than EU legislation of a more present date. The period around 1994 was characterised by much work for the administration to incorporate all the EU legislation into Norwegian law. The administration therefore had little time to make sure that everything was done correctly. In some cases they took a chance and hoped that ESA would not mind. This could have had an impact, especially for the output of the Urban Waste Water Directive.

All these factors should, however, be used complementarily. It is likely that they have either strengthened or weakened the ongoing process, but the main explanations are still to be found within the perspectives.

7.5 Concluding remarks

With my analyses of the Urban Waste Water Directive and the Nitrates Directive, I have sketched a rather negative image of the Norwegian implementation of environmental directives. The question then, is whether the study can contribute to an enhanced understanding of the effect of implementation of EU environmental policy in Norway. Moreover, is it possible to say anything about what encourages and what obstructs a successful implementation?

It seems as though the Urban Waste Water Directive is a rather deviant case, whereas the process around the Nitrates Directive has been more typical for implementation of EU legislation. My impression is that most of the environmental directives coming to Norway face few problems, and that they together with national initiatives and legislation contribute to behavioural changes among the target groups. However, since the EU legislation mostly requires literal interpretations, some challenges are bound to arise within the administrative units which are accustomed to more flexibility. The perception of

what constitutes successful implementation may therefore be somewhat different in the ESA than with the national authorities.

Regarding the explanations for degree of implementation, focus has often been upon the significance of national factors such as the administrative systems (Knill et al.). This study has found that explanatory variables must also be sought at sector level, as the characteristics of various sectors can explain why legislation ends up with a high or low degree of implementation. The EU legislation is implemented through an organisational structure and an administrative culture, which combined with different interests influences the empirical results. The institutional environment can also be of significance, but the impact is often filtered through the sector administrations. Because of this, the policy is likely to face different challenges, depending upon which sector it concerns.

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