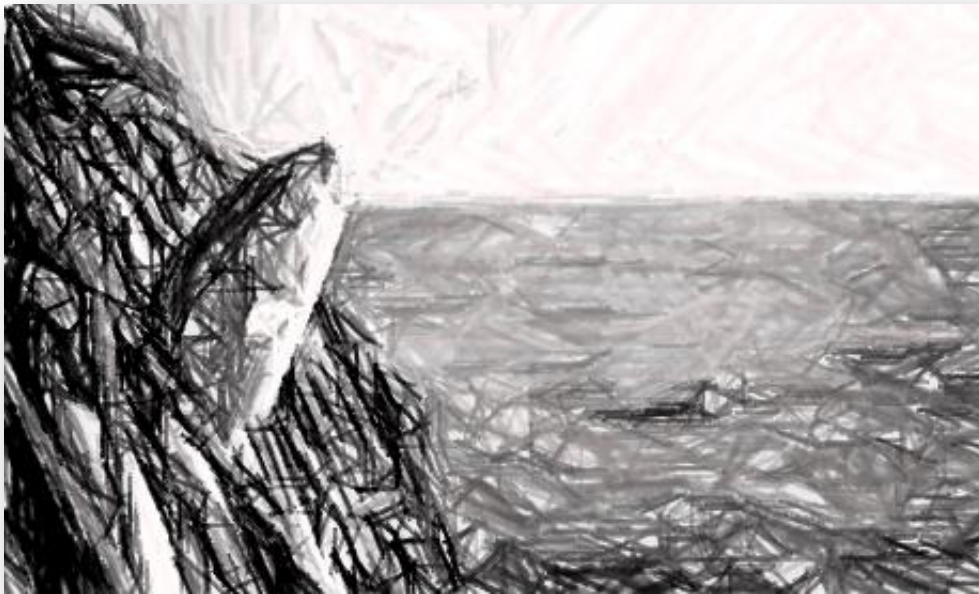




Swimming against the current?

An exploration of the conditions for a successful implementation of the landing obligation in fisheries policy



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Abstract

The landing obligation is an article within the European Union Common Fisheries Policy (Regulation 1380/2013) that will be introduced in the demersal fisheries from 2016 onwards. The policy intends to end the wasteful practice of discarding fish by-catch in the European Union. The exact implementation is subject to discussion and negotiation. The discussion takes place amongst government representatives of different European Union Member States and stakeholders at the international and national level.

This thesis contributes to this discussion as it gives recommendations for a successful implementation of the landing obligation in the Netherlands. These recommendations are based on in depth analysis of the presence of conditions that could lead to successful implementation of the landing obligation. The analysis is based on a step by step approach. First a review of policy implementation and fisheries management literature has led to an initial selection of beneficial conditions in the implementation of the policy in the Netherlands. Second, an investigation of a similar landing obligation in Norway has been used to verify and refine these conditions. Consequently, the presence of these conditions in the Netherlands has been studied by studying policy documents and interviewing key informants.

The most important finding of this assessment is that several key conditions seem to be absent in the Netherlands:

- 1) The problem as identified by the European Union, to end the wasteful practice of discarding, is not shared by all stakeholders;
- 2) Consequently, there is no shared vision on the need for the policy;
- 3) There is no urgency felt to implement the policy by fishermen nor by the general public;
- 4) No enforcement mechanism that would enhance the compliance of fishermen is expected to be in place;
- 5) The decision-making process is not considered transparent by the stakeholders.

Based on the literature, it is expected that if these conditions are not met, it is unlikely that the landing obligation will turn out to be a successful policy in the Netherlands.

The research results in a number of recommendations for the Dutch government and industry in order to secure successful implementation or find different solutions. A selection of the recommendations is:

- 1) Encourage discussions on the reasons for the landing obligation instead of focusing only on how to implement the landing obligation;
- 2) Identification of market opportunities for by-catch species such as dab.

Keywords: Landing Obligation, Fisheries management, Discards, Policy implementation, Common Fisheries Policy



Preface

During the summer of 2014 my friend Floor gave me an edition of the magazine 'Vrij Nederland'. The article of Thijs Broers of June 2014 caught my attention. This article quickly sketched some of the problems fishermen face. The introduction of policies that, from their point of view, were a real impediment for the practices they exercised. The fishermen in the article did not understand why first policy was being implemented and only after the implementation, research was being carried out on the usefulness of the policy. The implementation of policy seemed to have such a big impact on the practices of those fishermen, that I asked myself if it really was possible that the government would be unable to see the problems encountered by the implementation of those policies. I figured that it would not be that black and white and wanted to find out in which context fisheries policy was developed and implemented. I was able to combine my thesis with an internship at the Fisheries Department of the Ministry of Economic Affairs (EA) and get additional supervision from the Institute for Marine Resources and Ecosystem Studies (IMARES).

The interface between science, policy and politics is what interests me. It is my sincere hope that they will be more aligned with one another so the environment can be sustained and protected as a primary aim and second, fishermen can make their living from fishing. After diving into the fisheries world, I gained more understanding about the complexity of the choices that need to be made from not only an environmental-, but also from an economic and societal point of view.

Acknowledgements

I would like to give a special thanks to my three supervisors, who all provided me with very valuable knowledge, feedback and motivation. Carel Dieperink from the University of Utrecht, for his positive attitude and feedback throughout the project. Carian Emeka from the Ministry of EA, for the insights in the policy world I gained, the chances and freedom I got joining in all activities and her trust in me as an intern. And Marloes Kraan from IMARES, as she was always ready to help and provide me with valuable research-advice and insight.

I also would like to thank my interviewees in Norway, Denmark, Belgium and the Netherlands for their time and effort talking with me about fisheries, policies and governance. Furthermore, the people I met at the Ministry of EA and the researchers at IMARES have been of considerable help and guidance during the research. Their knowledge contributed to a quick plunge into the wonderful world of fisheries. Furthermore, my gratitude goes to my dear friends and brother for proof-reading and supporting me throughout the whole process. I also would like to thank my parents for their trust in my capabilities throughout my studies. Last but not least, I want to thank my friends from the Environmental Governance program for their support, company and energy. It is very inspiring being part of a group of people who are motivated to make this world a better place.

Enjoy reading,
Noortje Brookhuis
9th of July, 2015





Table of Contents

ABSTRACT	I
PREFACE	II
ACKNOWLEDGEMENTS	II
LIST OF FIGURES	V
LIST OF TABLES	V
LIST OF ABBREVIATIONS	VI
1 INTRODUCTION	1
1.1 PROBLEM DEFINITION.....	1
1.2 RELEVANCE	6
1.2.1 <i>Societal and practical relevance</i>	6
1.2.2 <i>Scientific and theoretical relevance</i>	6
1.2.3 <i>Applicability of the results in policy</i>	6
1.3 RESEARCH DESIGN	7
1.3.1 <i>Research Framework and Research Questions</i>	7
1.3.2 <i>Research outline</i>	8
2 A LITERATURE REVIEW OF POSSIBLE CONDITIONS FOR SUCCESS	9
2.1 INTRODUCTION.....	9
2.2 AN INTRODUCTION TO SUCCESS IN POLICY IMPLEMENTATION.....	10
2.3 AN INTRODUCTION TO NATURAL RESOURCE AND FISHERIES MANAGEMENT	11
2.3.1 <i>Common pool resource management & Complex Environmental Commons</i>	12
2.4 POSSIBLE SUCCESS CONDITIONS FOR SUCCESSFUL POLICY IMPLEMENTATION IN A FISHERIES CONTEXT	13
2.4.1 <i>Institutional design</i>	13
2.4.2 <i>Communication</i>	15
2.4.3 <i>Policy design</i>	15
2.4.4 <i>Common goals</i>	16
2.4.5 <i>Participation and legitimacy</i>	17
2.4.6 <i>Monitoring and enforcement</i>	18
2.4.7 <i>Rights</i>	18
2.4.8 <i>Trust</i>	19
2.4.9 <i>Nature conservation measures</i>	19
2.5 CONCLUSION.....	20
3 METHODS EMPIRICAL PART	21
3.1 INTRODUCTION.....	21
3.2 CASE STUDY	21
3.3 DATA COLLECTION.....	22



4	LESSONS FROM NORWEGIAN PRACTICE.....	25
4.1	INTRODUCTION.....	25
4.2	NORWEGIAN EXPERIENCES WITH A DISCARD BAN	26
4.3	RESULTS OF THE INTERVIEWS.....	28
4.4	CONCLUSION.....	30
5	PRESENCE OF THE SUCCESS CONDITIONS IN THE NETHERLANDS.....	31
5.1	INTRODUCTION.....	31
5.2	ORGANIZATIONAL STRUCTURE OF FISHERIES IN THE NETHERLANDS	31
5.3	PRESENCE OF THE SUCCESS CONDITIONS IN THE NETHERLANDS	32
5.4	CLARIFICATION OF THE RESULTS.....	33
5.4.1	<i>Institutional design</i>	33
5.4.2	<i>Communication</i>	35
5.4.3	<i>Common goals</i>	36
5.4.4	<i>Participation and legitimacy</i>	40
5.4.5	<i>Monitoring and enforcement</i>	44
5.4.6	<i>Nature conservation measures</i>	45
5.4	CONCLUSION.....	47
6	DISCUSSION	48
6.1	INTRODUCTION.....	48
6.2	VALIDITY.....	48
6.3	THEORETICAL IMPLICATIONS OF THE RESEARCH	49
6.4	SUGGESTIONS FOR FUTURE RESEARCH	50
7	CONCLUSION.....	52
8	RECOMMENDATIONS.....	54
8.1	INTRODUCTION.....	54
8.2	RECOMMENDATIONS FOR PUBLIC AND PRIVATE INSTITUTIONS	54
	LITERATURE	58
	APPENDICES	65
	APPENDIX 1 INTERVIEW QUESTIONS NORWAY	65
	APPENDIX 2 RESULTS OF THE INTERVIEWS IN NORWAY.....	68
	APPENDIX 3 INTERVIEW QUESTIONS THE NETHERLANDS.....	72



List of Figures

Figure 1 Catch and by-catch in demersal fisheries (Financieel Dagblad, 2015).....	2
Figure 2 Pelagic School (Swann, 2013)	3
Figure 3 Demersal fisheries (Deep Sea Charter fishing, 2015).....	3
Figure 4 Problem identification in policy implementation of landing obligation	5
Figure 5 Research framework	7
Figure 6 Ideal management of fisheries resources (Gezelius & Raakjaer, 2008 p.3)	11
Figure 7 Success conditions on different governance levels (Gezelius & Raakjaer, 2008 p.5)	19
Figure 8 Norwegian fishing areas (Arctic Focus, 2015).....	25
Figure 9 Fishing areas of Dutch demersal fleet (EUbusiness, 2015).....	31
Figure 10 The LO through the eyes of a fisherman (Visserijnieuws, 2015)	43

List of Tables

Table 1 EU Regulation 1380/2013 Article (15).....	4
Table 2 Outcome operationalisation	10
Table 3 Success conditions from the category: Institutional design.....	14
Table 4 Success conditions from the category: Communication.....	15
Table 5 Success conditions from the category: Policy design.....	16
Table 6 Success conditions from the category: Common goals	16
Table 7 Success conditions from the category: Participation and legitimacy	18
Table 8 Success conditions from the category: Monitoring and enforcement	18
Table 9 Success conditions from the category: Rights.....	18
Table 10 Success conditions from the category: Trust	19
Table 11 Success conditions from the category: Nature conservation measures.....	20
Table 12 Interviewed actors Norwegian case.....	23
Table 13 Interviewed actors the Netherlands	24
Table 14 Results of the Norwegian interviews	30
Table 15 List of success conditions important for the implementation of the landing obligation.....	30
Table 16 Presence or absence of the success conditions in the Netherlands.....	32



List of Abbreviations

CCTV	Closed Circuit Television
CEC	Complex Environmental Commons
CFP	Common Fisheries Policy
CPR	Common Pool Resources
CVO	Cooperative Fisheries Organisation
DB	Discard Ban (Norwegian)
Discard	Part of the catch that is returned into sea
EA	Economic Affairs
EC	European Commission
ELVV	European Agricultural & Fisheries Policies & Food Security
EP	European Parliament
EU	European Union
High-grading	Marketable sized fish that are discarded
ICES	International Council for the Exploration of the Sea
IMARES	Institute for Marine Resources and Ecosystem Studies
ITQ	Individual Transferrable Quotas
LEI	Agricultural Economics Institute
LO	Landing Obligation
MRI	Marine Research Institute
MS	Member State
MSY	Maximum Sustainable Yield
NVWA	Netherlands Food and Consumer Product Safety Authority
PO	Producer Organisation
RAC	Regional Advisory Committee
RTC	Real Time Closures
RVO	Netherlands Enterprise Agency
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch from a given fish stock
Target species	Type of fish the fishermen intends to catch

1 Introduction

1.1 Problem Definition

Fisheries management

The European seas are under pressure of exploitation and pollution due to human activities (Salomon, 2009) Activities both on land (industries and waste/litter-production) as well as in the water (fishing, freight, oil and gas exploration) impact on the marine ecosystem, some of which in a detrimental way or resulting in pollution. As a result of those activities, fish stocks decline, water is polluted and benthos is being destroyed or damaged. Apart from human activities, also nature induced events can disturb or change the environment (e.g. a storm can damage the benthos of the ocean, or differences in currents can have an effect on the migration of fish). Salomon (2009) attributes the deterioration of the fish stocks partly to the failure of the Common Fisheries Policy (CFP). The CFP is solely focused on temporary developments and successes, not taking long-term sustainability issues into consideration.

The Common Fisheries Policy

The CFP of the European Union (EU) Member States (MSs) has been introduced in 1970 and has been revised on a regular basis ever since. The aim of the CFP is to guarantee that fishing practices are economically, socially and environmentally sound and sustainable. The CFP stipulates management of the European fishing fleets and conservation of the European fish stocks in the waters as a European common pool. The management of fishing fleets comprises, amongst others, equal access to- and maximisation of- fishing opportunities. At the same time, overfishing is avoided, thereby enabling the fish stocks capacity to reproduce (European Commission, 2014a). The latest reform of the CFP entered into force at the 1st of January 2014. The banning of discards is one of the key elements of this reform and seems to fundamentally change fisheries management. A shift in management from monitoring fish that has been landed, into monitoring the fish that has been caught will take place with the introduction of the landing obligation (LO) (Damalas, 2015).

The landing obligation

Discarding of fish means that the undesirable catch, that can be either dead or alive, is being thrown back into the sea. There are various reasons for returning the catch back into the sea. The caught fish might be too small (juvenile) or damaged, the fisher might have no quota for the fish, certain catch composition rules might apply or the economic value of the fish might be too low. Those reasons oblige, or in case of the latter example incentivise, fishermen to discard their by-catch (European Commission, 2014a). The discard ban of the CFP stems from the general dissatisfaction of the waste of fish (European Commission, 2014c). Discarding is a “substantial waste of resources and has a negative impact on the sustainable exploitation of resources as well as the economic viability of fisheries” (European Commission, 2014c). The figure at the next page displays an image of catch and by-catch.



Figure 1 Catch and by-catch in demersal fisheries (Financieel Dagblad, 2015)

The LO, or Discard Ban (DB), is seen as an appropriate way to end discarding (European Commission, 2014a, European Commission, 2014b). According to the European Commission (EC), the LO ensures better data on fish stocks, better management support and improved resource efficiency, by landing all commercial species caught. The LO would incentivise fishermen to reduce by-catch and develop technical solutions (e.g. develop and use more selective fishing gear)(European Commission, 2014b).The reform of the CFP further seeks to increase regionalisation, alignment of rules and replace fisheries micromanagement in the EU. Increasing regionalisation should warrant specific needs of different fisheries in different areas.

Pelagic and demersal

There are two types of industrial fisheries, namely pelagic and demersal fisheries. Pelagic fish swim in the water column, mostly in fish shoals, such as mackerel, herring and blue whiting (The European Parliament and the Council of the European Union, 2013). In the demersal fisheries, the fish does not swim in those kinds of shoals but swim or lie individually or in smaller groups nearby the sea bottom. Different species are caught together in demersal fisheries. The average by-catch in pelagic fisheries is relatively low in comparison to the average by-catch in demersal fisheries: 2% in pelagic against 40% in demersal (Ministerie van Economische Zaken, 2014; Quirijns et al, 2014 p.23). The LO came into effect on the 1st of January 2015 for pelagic species. The by-catch problem is bigger for demersal fisheries. Therefore, the focus of this thesis is on demersal fisheries.



Figure 2 Pelagic School (Swann, 2013)

The figure above shows that the pelagic fish shoal consists of the same species (in this case Mackerel). Accordingly, it is rather easy to catch the shoal that is relatively free of other species. Demersal fish is dependent on the proximity of the ocean floor for its survival, as this proximity provides them with the availability of food resources, possibility to hide in the sand, or a strong water current (Haedrich, 1997). One can imagine that it is easier to separate target species from non-target species in pelagic fisheries than it is in demersal fisheries.



Figure 3 Demersal fisheries (Deap Sea Charter fishing, 2015)



Planning

In 2016, the demersal fishery sector will face the introduction of the landing obligation. In 2019 at the latest, all demersal fisheries species that have a catch limit will be subject to the landing obligation (The European Parliament and the Council of the European Union, 2013).

The reason for a gradual implementation of the discard ban is that it will give:

- 1) The fisheries sector time to adapt to the new regulation;
- 2) Scientists time to do relevant research and;
- 3) Government bodies' time to elaborate on the implementation of the policy.

A detailed plan for the phasing of the landing obligation is currently (May 2015) one of the key targets of the negotiations between MS. Conflicting wishes with regard to the species that are of national importance shape the discussions. Most MS try to implement the landing obligation on a national scale in such a way that their most important industries are not being hit excessively hard in 2016. The MS discuss and consult with their fishing industries and other national stakeholders, after which international negotiation on the preferences takes place. For MS bordering the North Sea this is done in the Scheveningen Group. This platform consists of all coastal EU MS of the North Sea (The United Kingdom and Scotland, France, Belgium, The Netherlands, Germany, Denmark and Sweden¹).

Table 1 EU Regulation 1380/2013 Article (15)

The LO entails that all discards of regulated species will have to be landed. Species that do not have a catch limit, are not part of the LO and do not have to be landed. Exceptions of the LO are

- 1) species that are prohibited to be caught according to the legal acts of the CFP
- 2) species that have demonstrated to have a high survival rate after discarding and
- 3) Catches under the de-minimis exemptions (The European Parliament and the Council of the European Union, 2013).

The landed species will be deducted from the catch- quota of the target species.

The exceptions of the landing obligation will briefly be described

- 1) The landing obligation does not apply to species "for which scientific evidence demonstrates high survival rates, taking into account the characteristics of the gear, of the fishing practices and of the ecosystems" (1380/2013, article 15 4(b)) (The European Parliament and the Council of the European Union, 2013).
- 2) The survivability of species is studied by independent research institutes. However, the decision-making on what a high survival rate might mean in practice is subject to negotiations on a rather political level as well. The process of research and decision-making is currently still ongoing.
- 3) The de-minimis exception allows for discarding certain percentage of the catch. This exception has to be requested and can only apply to 1) cases in which scientifically can be proven that a greater selectivity is very hard to realise or 2) the costs of landing and processing of the 'to be landed fish' are disproportionately high. Once granted the de-minimis allows for the first two years an exception of maximum 7% of the total yearly catch of the species. The subsequent two years 6%, and afterwards a maximum of 5% (Ministerie van Economische Zaken, 2014). Discarding the de-minimis will not be reduced from the quota, yet those discards have to be fully recorded. The discussion on the yearly catch quota, the exact percentage that can be discarded and the scientific underpinning thereof still need further research. The de-minimis exception was developed to avoid the closure of certain fisheries because the quota is filled with by-catch species that are very difficult to avoid. Thus, this exception gives fishermen some time to adapt to the regulation as well as to avoid an insurmountable burden on their income.

¹ As Norway is not an EU MS, it is not taking part in the meetings of the Scheveningen Group.



Uncertainties

The consequences of the new regulation for the practices of fishermen and the effect on their livelihoods, the ecosystem, as well as the fish market remain largely unclear. The goal of the LO is to end discarding by fishing more selectively. This would mean that those species that are not the target-species of fishermen will remain alive and in the sea.

Knowledge Gap

Circumstances that could be beneficial to the implementation of the LO have not been researched before. The aim of this thesis is therefore to reduce this knowledge gap and contribute to the implementation of the LO.

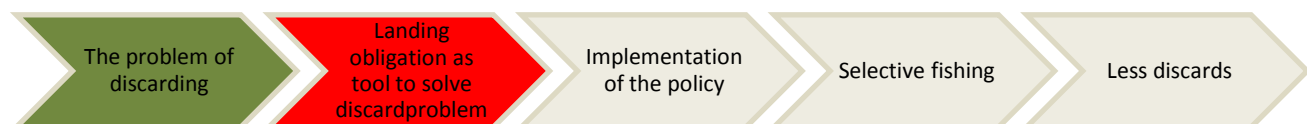


Figure 4 Problem identification in policy implementation of landing obligation

The figure above shows the encountered problem on the left side, and the end goal of the policy on the right side. The five steps indicate the steps that are necessary to be taken in order to put a halt to the discard problem (European Commission, 2015). The landing obligation is seen as the instrument to solve this problem. Yet, the different stakeholders have opposing ideas on the appropriateness of the landing obligation to solve the problem. Moreover, in the first place discarding is not regarded a problem by everyone. The Ministry of EA has to implement the landing obligation. This leaves the discussion on the landing obligation as the most appropriate tool aside. The Ministry of EA could benefit from recommendations on how to implement the policy. The discussion on the landing obligation as an appropriate tool to solve the problem does, however, feed into the difficulties encountered. It is not my intention to provide a sound overview of successful implementation of fisheries policy. However, it is my sincere wish to contribute to the advancement of sustainable fisheries management whilst respecting the interests of all stakeholders.



1.2 Relevance

1.2.1 Societal and practical relevance

About 70% of the earth's surface is covered by oceans that are a vital resource for human lives. It is important to protect the oceans' ecosystems. The CFP is aimed at a sustainable use of the EU waters. The landing obligation as subject of study in this thesis has a direct effect on the fisheries management as it fundamentally changes the current system. This policy will affect the ecosystems, the work of fishermen, and the current maintenance and control regulations. The landing obligation is a salient topic for stakeholders, due to the big impacts the regulation presumably will have on their practices.

1.2.2 Scientific and theoretical relevance

The research aims to contribute to theory of successful fisheries management and policy implementation and more specifically to the implementation of the LO. No research to the implementation of the LO has been done yet. Implementation research in fisheries management has been an overlooked and unused field of study. Social science has focused mainly on effective enforcement as the main driver for resource conservation policies (Gezelius and Raakjaer, 2008).

Two bodies of literature, namely policy implementation and fisheries management, are scrutinised for the implementation of the LO in the Netherlands. The results of this investigation led to a number of success conditions that can be beneficial for the implementation of the LO. The results of the availability of the success conditions of the LO in the Netherlands and the ways in which success can be achieved, will contribute to the theories of the aforementioned literature. The application of and comparison to the selected literature on the implementation of the discard ban in the Netherlands will lead to theory building on the topics of successful fisheries governance and policy implementation. Many of the conditions that are identified for successful fisheries can be applied in the wider context of fisheries management and not solely for the implementation of the landing obligation in the Netherlands.

1.2.3 Applicability of the results in policy

The results of this thesis might advance the further implementation of the LO in demersal fisheries for 2016 and onwards. Moreover, it will identify success conditions for policy implementation in general. Also, it will provide more insights in the complexity of the policy-implementation process at different levels (national and EU). The landing obligation for demersal fisheries will be implemented in phases in the time span of 2016-2019². Hopefully, the results of the thesis will be taken into account in the further implementation of the regulation in the demersal fisheries. This research will focus on a case study in order to go into depth into the factors that could enhance the policy implementation in the Netherlands. The research will also be relevant to other MS, as the beneficial conditions are applicable to all MS implementing the LO.

² Note: The landing obligation for pelagic fish has been introduced in 2015.



1.3 Research design

1.3.1 Research Framework and Research Questions

This research aims to provide insight in the current state of affairs in the implementation of the landing obligation and find promising possibilities to improve the implementation process by:

- Identifying success conditions that could contribute to a successful implementation of the landing obligation;
- Making a comparison between the current circumstances and the desired situation by means of testing the success conditions

The organisation of the research will be explained below the following figure that illustrates the research framework.

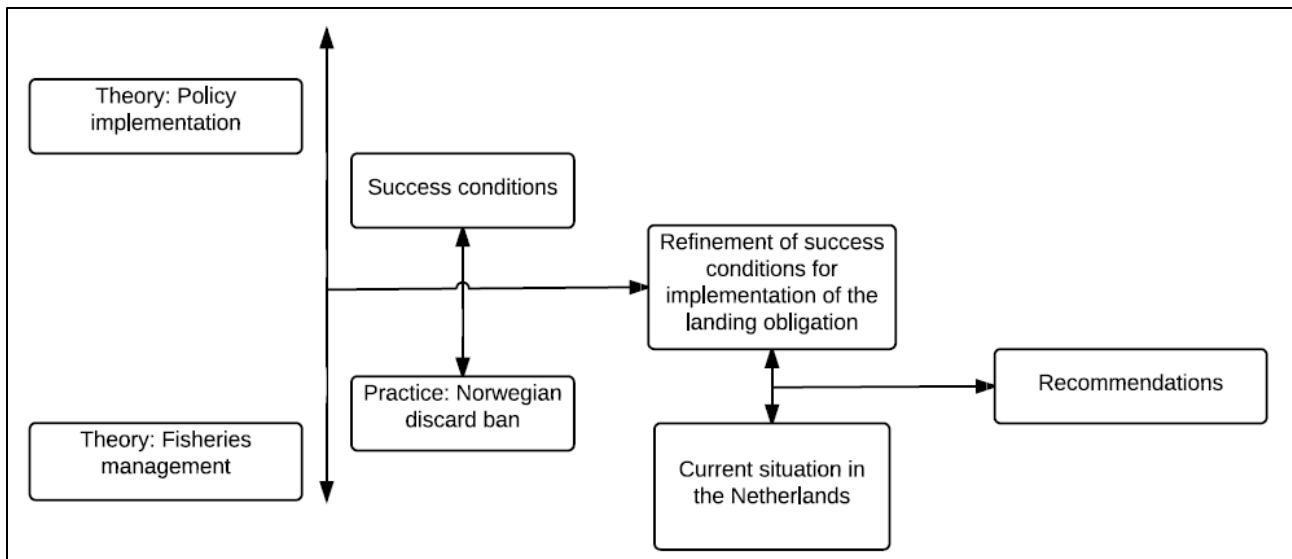


Figure 5 Research framework

The left part of the framework shows the bodies of literature that were deemed relevant for the identification of success conditions. They provide the theoretical framework of conditions that, according to existing literature, are desirable for the implementation of a policy in a fisheries context. Literature on policy implementation has been used in order to gain information about the specific conditions for the introduction of new policies in the EU in a context of conflicting interests and institutional requirements. Literature on fisheries management has been studied. This has been done to embed the policy implementation of the LO in a context of fisheries governance and the broader management of natural resources by studying design principles for Common Pool Resources (CPR) and Complex Environmental Commons (CEC).



- **RQ1:** Which success conditions from fisheries governance and policy implementation can be extracted from literature?
Chapter 2

The relevance of the compiled conditions for success will be tested on their relevance by analysing the case of Norway, where a DB is already in place. This step in the research serves as an examination of the literature research and allows for a better representativeness of success conditions for fisheries governance and specifically the introduction of the LO. This test will result in a refined list of success conditions for the applicability on the implementation of a discard ban.

- **RQ2:** Which success conditions regarding the implementation of a discard ban can be extracted from experience in Norway?
Chapter 4

Consequently, the Dutch situation will be explored. This will be done by analysing the presence of the success conditions in the Netherlands according to the stakeholders involved in the implementation of the LO.

- **RQ3:** Are the success conditions for the implementation of the landing obligation present or absent in the Netherlands?
Chapter 5

By answering all of the above sub-research questions, the following main research question will be answered.

- **To what degree are conditions contributing to a successful implementation of the EU landing obligation present in the Netherlands?**

Consequently, the possible lack of previously identified success conditions will serve as a basis for the recommendations.

1.3.2 Research outline

The following Chapter (2) will give an overview of the conditions that are beneficial in the implementation of fisheries policy, based on a literature review. Chapter 3 will describe the empirical methods used in this thesis. Subsequently, the success conditions will be refined by testing their relevance for the DB case in Norway and by adding conditions from practice that were found to be crucial in the implementation of the DB in Norway (4). Afterwards, the refined conditions will be tested on their presence in the Netherlands by conducting interviews with experts and stakeholders (5). The limitations and other topics for discussion will be reviewed in Chapter (6). A conclusion answering the main research question will be provided in Chapter (7). Finally, recommendations for the implementation of the policy and related issues will be given (8).



2 A literature review of possible conditions for success

2.1 Introduction

This Chapter will focus on the following research question in order to find theoretical conditions for a successful implementation of the landing obligation:

Which success conditions for fisheries governance and policy implementation can be extracted from literature?

First, a description of the term of success and of implementation of a policy will be given. Afterwards, the conditions that could lead to this success are described. These conditions stem from the following bodies of literature:

- 1) Policy implementation
- 2) Fisheries management

Policy implementation literature is useful in order to describe specific implementation related benefits and identify the areas of deficiencies. Fisheries management literature gives insight into fisheries specific issues, and puts the implementation in a wider perspective of the management of global commons.

Coding concepts was at the basis of the research during the analysis. The following coding methods are employed:

- Open coding. This method was used to conceptualise patterns during the literature research.
- Selective coding. This method was used to select the core variables. The success conditions after the synthesis of Norwegian practice were the core variables for the test in the Netherlands.

The search for success conditions for the implementation of the LO is the major focus of the thesis. The analysis is based on the identification of, and testing the presence of those conditions in practice. NVIVO, a program to analyse quantitative data, has been employed for this matter.

The following categories were created in order to describe the different conditions that result from both policy implementation literature as well as fisheries management literature in a structured way:

- 1) *Institutional design;*
- 2) *Communication;*
- 3) *Policy design;*
- 4) *Common goals;*
- 5) *Participation and legitimacy;*
- 6) *Monitoring and enforcement;*
- 7) *Rights;*
- 8) *Trust;*
- 9) *Nature conservation measures.*



Those categories were found to be helpful in structuring the bodies of literature and provided a good guideline for the preparation of interview questions for the Norwegian case. The conditions have been divided amongst the different categories based on their prime relation to the category. This has only been done in order to be able to make an analytical distinction. Each of the subsections of those categories results in a list of conditions regarded beneficial in the implementation of policies in a fisheries context. The literature review will be supplemented with more practical conditions for success in Chapter 4. Those conditions are the result of experiences in Norway with the DB. Subsequently, a refined list of conditions beneficial for the implementation of the LO will be tested on their presence in the Netherlands in Chapter 5.

2.2 An introduction to success in policy implementation

Policy implementation is the process between the intention to make something happen or stop something from happening and the impact of the action in the environment (O’Toole, 2000). Policy needs to be put in practice through several instruments and strategies including the involvement of a variety of stakeholders (Dimitrakopoulos & Richardson, 2001). The implementation of a policy is a continuous process. One can distinguish between the output and the outcome of a policy, resulting in different approaches with regard to the analysis of a policy. According to Goggin (1986 in Dimitrakopoulos & Richardson, 2001) only the output of the policy should be evaluated since it is hardly ever certain whether a policy could solve a certain problem. Furthermore, the theory that is supporting a certain policy direction might be inappropriate or false leading to the fact that the implementation of a policy in a theoretically perfect manner would not result in the desired outcome.

Determining a successful implementation is at the base of the research. Top-down and bottom-up scholars of policy implementation literature have opposing beliefs about the determination of success. The top down school regards ‘reaching the objectives’ as a successful implementation and the bottom up supporters are more concerned with the larger effects of a program. A positive effect that not necessarily is the outcome envisioned, may also be considered a success (Palumbo et al., 1984 in Matland, 1995). The hybrid school is combining the analysis on central steering and local autonomy (O’Toole, 2000 in Pulzl & Treib, 2006 p.95).

The focus of this research is on the possible success for the implementation, because the implementation of the policy is still in process. Consequently, an ex-ante assessment of success achievement will be conducted. It is necessary to describe what is indicated as a success in order to draw conclusions about the success of the policy implementation. The success indicator is based upon the degree of goal achievement as set by the EC and will be elucidated in the assessment of the situation in the Netherlands.

Outcome	Operationalisation
<p>1. Goal achievement -The landing obligation “does away with the wasteful practice of discarding” (European Commission, 2015).</p>	<p>1. Unwanted fish is either landed or not being caught. 2. Changes are observed regarding Improvements in selective fishing</p>

Table 2 Outcome operationalisation



2.3 An introduction to natural resource and fisheries management

The degradation of environmental global commons, like overexploitation of fish from oceans, has stimulated the research of common pool resources. CPR are public goods for which exclusion is difficult and joint use involves subtractability (Berkes et al., 1989). Every sustainable common-property resource management needs a mechanism regulating access and level of subtractability of the resource in order to avoid overexploitation from happening. In the European fisheries, Total Allowable Catches (TAC's) have been set on fish species and those amounts have been allocated to MS, that have their own national allocation system. TAC's are set by the Council of fisheries ministers of the EU. A TAC is being established on the basis of scientific advice from advisory bodies like the International Council for the Exploration of the Sea (ICES) and the Social, Technical and Economic Committee for Fisheries (STECF) and is adjusted annually for most stocks. EU countries get a certain percentage of the TAC of species according to a fixed relative stability key. EU MS are allowed to sell or exchange quotas to other MS. The TAC system is in place in the EU since 1983 (Jensen, 2001).

Long term sustainability in fisheries management contributes to marine protection. The goal of fisheries management is to ensure healthy fish stocks over a long term period of time. Fisheries governance is characterised by different actors and institutions interacting on different levels. Not solely the government plays an active role in fisheries management, but also other non-state, private actors fulfil a central role in the management of the fish resources (Kooiman, 2005 p.15). When one tries to regulate the natural resources that provides the basis for the livelihoods of people, it is a valid outcome that those affected by the regulation resist against the change if the uncertainty to secure their livelihood increases (Gezelius & Hauck, 2011 p.435). It is important to understand why users of a natural resource, e.g. fishermen comply with certain rules. The possibility to identify those preconditions can help those governing the resources and those setting the rules, to focus on the preconditions and try to make them accessible.

Advice, implementation of and enforcement of policies converge in fisheries management. Ideally, fisheries management is taking place in the following sequence (Gezelius & Raakjaer 2008):

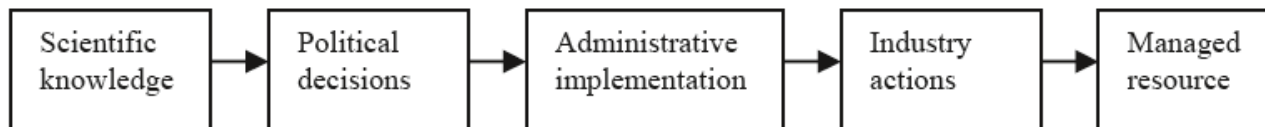


Figure 6 Ideal management of fisheries resources (Gezelius & Raakjaer, 2008 p.3)

First, the scientific community provides information about the status of the stocks. Second, the politicians use this information as the base for their decisions. Third, the institutions implement the policies as developed by the politicians in an efficient manner. Fourth, the industry changes their behaviour and complies with the policy and the resource is managed.



2.3.1 Common pool resource management & Complex Environmental Commons

Ostrom et al. (1994) defined several principles that should be in place to manage a common pool resource in a sustainable manner. Those design principles are based on numerous case studies carried out of different common pool resources that have been found to be sustainable over a long period of time (Ostrom et al., 1994).

Those setting the rules for the management of the resource are not per se the users of the resource and are likely to be external actors (e.g. policy makers). Kauneckis & Imperial (2007) argue that CPR rules are important and observe that some other factors are missing. CPR usually focusses on the users of the common pool and the rules created by them, whereas CEC focuses on common pool resources where rules are created by institutions. CEC describes rules that should be in place, or increase the likelihood of successful governance of complex common pool resources where multiple goals, with multiple stakeholders on multiple levels interact.

The governance of a CEC calls for (a) broad management institution(s) that includes all different users, purposes and goals of the resource. Usually, reaching an agreement on the rules that should be put in place takes a long time of negotiations amongst the stakeholders on different levels of organisation, who all want to have a say in the way decisions are being made and policies implemented. The more diversity there is over the purposes and values of the use of the resource, the more challenging it is to create a well-functioning institution governing the resource. The following paragraph will give possible success conditions for policy implementation in a fisheries context.



2.4 Possible success conditions for successful policy implementation in a fisheries context

2.4.1 Institutional design

Implementation of policies is a complex process requiring effort, knowledge, time, money, human resources, penalties and incentives in the right combination and at the right time (Dimitrakopoulos & Richardson, 2001; Hogwood & Gunn, 1993; Matland, 1995). Apart from those resources, different actors, institutions, their stakes and behaviour have a significant influence on the possibility for successful implementation. Whether they are willing and have the possibility to change their actions is dependent on exogenous as well as on endogenous circumstances. Governance happens in multiple layers, scales and with a multitude of actors. It is necessary that sets of rules, fitting the specific layer and thus may be different in other layers, are nested in enterprises (Ostrom et al., 1994).

Problems are often complex. Securing consensus over the goals of a policy is extraordinarily difficult. Therefore, a policy design that is targeted at solving specific problems can only solve part of the problem, leading to ineffective solutions for the problem as a whole. Scharpf (1988) calls this problem the joint-decision trap. Simultaneously, getting many MS on board is a strength of EU policy making. The process in which consensus is being sought ensures more stakeholders and MS to get involved in the policy formulation. However, differences in interpretation, a wrong transposition from EU level to national level of the policy as well as the unsettled disputes between stakeholders that have been suppressed during the formulation phase can be expected to arise again during the implementation phase of the policy (Matland, 1995; Dimitrakopoulos & Richardson, 2001).

A policy implementation is more likely to succeed if:

- There is a clear structure for implementation; (Mazmanian & Sabatier, 1983 in Dimitrakopoulos & Richardson, 2001)
- The implementers are faithful to the goals envisioned; (Mazmanian & Sabatier, 1983 in Dimitrakopoulos & Richardson, 2001)
- The policy is clearly formulated (Dimitrakopoulos & Richardson, 2001)
- A level playing field is in place. This reduces the chance for free riding. The way in which a level playing field can be created is amongst others by transparency and consensus on monitoring and mechanisms (Dimitrakopoulos & Richardson, 2001).
- The implementation is flexible and allows for adaption (Palumbo et al., 1984 in Matland, 1995)

If several policy instruments are used, different ways of cooperation between stakeholders in different networks need to be established. If more policy instruments are proposed and are under negotiation, it is more likely that stakeholders will get involved and have the opportunity to establish common goals and problems. The chance is higher that several stakeholders will find a solution that creates a positive sum game and it is likely that corporate forms of governance are created beneficial for the environmental commons (Kauneckis & Imperial, 2007).



Success condition	Description
<p>1. Small number of actors involved in policy formulation (Pressman and Wildavsky 1973 in Matland, 1995; Dimitrikopoulos & Richardson, 2001)</p>	<p>Minimise the number of actors during the formulation phase in order to reduce discrepancies of the policy formulation</p>
<p>2. Implementers are sympathetic with goals of the policy (Dimitrakopoulos & Richardson, 2001; Goggin, Bowman, Lester, & O’Toole, 1990; Mazmanian & Sabatier, 1983; Van Meter & Van Horn, 1975)</p>	<p>Place implementation responsibility in an agency sympathetic with the policy’s goals. Complete understanding of, and agreement on objectives throughout the implementation process</p>
<p>3. Implementation design and responsibilities are clear (Hogwood & Gunn, 1993; J. Pressman & Wildavsky, 1973 in Puzl & Treib, 2006)</p>	<p>There needs to be a system of clear responsibilities and hierarchical control to supervise the actions of implementers.</p>
<p>4. The implementation process is well structured (Mazmanian & Sabatier, 1983 in Puzl & Treib, 2006)</p>	<p>The implementation process is structured adequately in a fixed sequence. Adequate program design and clever structuration of the implementation process</p> <p>Note: Hard to achieve control over the policy implementation process (unfavorable conditions can cause implementation failure)</p>
<p>5. Policy is well transposed (Matland, 1995; Dimitrikopoulos & Richardson, 2001)</p>	<p>The success of a program depends largely on the translation from central policy into local implementation.</p>
<p>6. The implementation process is flexible (Dennis J. Palumbo et al., 1984 in Matland, 1995)</p>	<p>“Flexible strategy that allows for adaption to local difficulties and contextual factors” (Dennis J. Palumbo et al., 1984 in Matland, 1995)</p>
<p>7. Resources necessary for implementation are available (Dimitrakopoulos & Richardson, 2001; Hogwood & Gunn, 1993; Matland, 1995)</p>	<p>Implementing agencies should have sufficient resources at their disposal. Those resources need the right combination at the right time in order to secure a successful implementation. Effort, knowledge, time, money, human resources, penalties and incentives.</p>
<p>8. Enterprises are nested (Ostrom et al., 1994)</p>	<p>“Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises”.</p>
<p>9. Diversity of policy instruments to reach a certain outcome (Kauneckis & Imperial, 2007; Hilborn, 2007; Salomon, 2009)</p>	<p>“Cooperation and the development of new institutional arrangements are more likely when a wide range of policy instruments are used to manage complex environmental commons” (Kauneckis & Imperial, 2007). Sustainability objectives should be addressed through different policies (Hilborn, 2007).</p>
<p>10. Level playing field (Dimitrikopoulos & Richardson 2001)</p>	<p>A level playing field reduces the possibility for actors to free ride.</p>

Table 3 Success conditions from the category: Institutional design



2.4.2 Communication

Communication success conditions are closely related to policy design and institutional design. A good communication on all levels (EU, national and local) will advance the implementation. Policy implementation is more likely to succeed if the goals of a policy are clear and the program has a clear cause-effect theory (Mazmanian and Sabatier, 1983). Studying the target population of the policy and hearing their motivations in order to comply or not comply with a policy is a crucial element for the design of a policy (Berman, 1978; Berman et al., 1980; Hjern, 1982; Hjern & Hull, 1982; Hull & Hjern, 1987; Lipsky, 1978 in Matland, 1995; Dimitrikapoulis & Richardson, 2001).

Success condition	Description
11. Goals are clear and consistent (Hogwood & Gunn, 1993; Matland, 1995; Mazmanian & Sabatier, 1983; Van Meter & Van Horn, 1975; Dimitrikapoulos & Richardson, 2001)	Make policy goals clear and consistent so that they are not multi interpretable and have a clear function. The relation between the cause and effect needs to be clear.
12. Stakeholders motivations are well understood (Berman, 1978; Berman & others, 1980; Hjern, 1982; Hjern & Hull, 1982; Hull & Hjern, 1987; Lipsky, 1978 in Matland, 1995; Dimitrikapoulis & Richardson, 2001)	“Understanding implementation processes can be gained by looking at a policy from the view of the target population and the service deliverers” Goals, strategies, activities, and contacts of the actor need to be understood.
13. Good communication & Co-ordination (Hogwood & Gunn, 1993)	There must be perfect communication & co-ordination between participants (multi-level governance on both EU as well as on national level)

Table 4 Success conditions from the category: Communication

2.4.3 Policy design

The designed policies on an EU level are a result of negotiations, often not leading to a perfect solution for a problem. The uncertainty that is a result of a new formulated policy is also a diminishing factor for the effectiveness of the policy implementation (Richardson & Dimitrikapoulis, 2001). A well designed and well formulated policy that fails to be implemented is as worthless as a badly designed policy that is implemented in a perfect manner but does not have the desired impact.

Fisheries efficiency is necessary in order to ensure a long term management of the fisheries. The objective to be achieved with the policy can be evaluated by the efficiency of the process that is leading towards reaching the wanted objective. The indicator for this process is the cost-effectiveness. This can be measured by the costs of the input that need to be given in order to achieve the wanted result. With input the following types of activities are meant: “information costs, coordination costs and enforcement costs” (Hanna, 1995 p.27). The policy should not change the status quo in an adverse way, as small changes are more likely to be accepted by those affected (Mazmanian & Sabatier, 1983 in Pulzl & Treib, 2006).



Success condition	Description
14. Policy should have a minimal change to the status quo (Mazmanian & Sabatier, 1983; Van Meter & Van Horn, 1975 in Matland, 1995; Dimitrikapoulos & Richardson 2001)	Limit the extent of change necessary for successful implementation, and limit detrimental changes in socioeconomic framework conditions.
15. Low level of uncertainty (Dimitrikapoulos & Richardson, 2001)	The uncertainty that is a result of a new formulated policy is a diminishing factor for the effectiveness of the policy implementation
16. Efficient policy (Hanna, 1995)	Benefits of the policy exceed the costs of implementing the policy

Table 5 Success conditions from the category: Policy design

2.4.4 Common goals

CEC often “suffer” from a multitude of related resource problems (e.g. pollution, monopoly access rules and over-exploitation). Because of the diversity in problems that should be tackled, not one course of action is likely to solve all problems. Many problems are interrelated and actor groups might compete over the importance of one problem that should be solved over the other. It is of first priority for an institution governing a CEC to create a common understanding of the problem. Framing a problem in such a way that most actors accept its existence and origins is necessary in order to create support for collaboration. The way problems are perceived may change over time as a consequence of more information, a shift in stakeholders’ interest or because of changes in the local circumstances (Kauneckis and Imperial, 2007).

Establishing mutual interest is an incentive for collective action. Several reasons may account for the establishment of mutual interest. Establishing a positive sum game is one prerequisite for mutual interest. A shared problem, where only a regulation does not suffice and where actors agree to be in need of a policy solution, is necessary for this positive sum game. Next to a shared problem, a factor that can contribute to establishment of mutual interest is time. If, after a certain amount of time, ‘the problem’, is still not solved, policy-oriented learning can be a stimulant for the development of non-regulatory action plans. Another factor stimulating cooperation may be the creation of common goals (note: not just common problems) and collective lobbying for those goals (Kauneckis and Imperial, 2007).

Success condition	Description
17. Shared problem (Kauneckis & Imperial, 2007; Matland, 1995; Van Meter & van Horn, 1975 in Pulzl & Treib, 2006)	Institutional arrangements for managing complex environmental commons are more likely to emerge when those with competing interests develop a shared definition of underlying problems. In this way a shared problem can be solved.
18. Mutual interests (Kauneckis & Imperial, 2007)	“When policy actors view policy choices in terms of positive sum games, cooperation is more likely to result in development of new institutional arrangements for managing complex environmental commons”. Conversely, cooperation is less likely to occur when policy choices are viewed as zero sum games.

Table 6 Success conditions from the category: Common goals



2.4.5 Participation and legitimacy

If a policy has only stipulated a certain outcome, actors are likely to differ in their opinion on how to achieve the outcome. This ambiguity leads to coalition forming. Those coalitions are expected to be influenced by local contextual factors. Coalitions that are opposing the strongest coalition are still able to limit the policy and in this way influence the outcome. Matland (1995) argues that different levels of ambiguity over policy should not be valued in a negative nor a positive way, but rather be seen as an aspect influencing the policy process. Studying ambiguity and conflict is useful for policy makers in identifying where problems can be expected and for researchers to predict outcomes (Matland, 1995). Public support and salience of an issue the policy is aiming to solve is beneficial to the implementation of that policy. Also, if the stakeholders see the policy as a salient topic, compliance is likely to be high (Dimitrakopoulos & Richardson, 2001; Mazmanian & Sabatier, 1983 in Matland, 1995; Palumbo & Calista, 1990 in Puzl & Treib, 2006).

Involvement of the target groups are key (Ostrom et al., 1994) and finding consensus over the policy (Dimitrakopoulos & Richardson, 2001) creates legitimacy. A well-balanced power distribution amongst interest groups has been found to lead to successful negotiations (Amy, 1983; Burkardt et al., 1997 in Kauneckis & Imperial, 2007). Transparency for the stakeholders and participation in the decision-making aids the acceptance of a policy (Hilborn, 2007; Salomon, 2009). The effect, the benefits and burdens, of a policy should be distributed equally amongst the community (Hanna, 1995).

Success condition	Description
19. Negotiated policy goals (Dimitrakopoulos & Richardson, 2001)	Finding consensus ensures that more stakeholders and MS get involved in the policy formulation. At the same time, legitimacy for the policy is being created.
20. Collective choice arrangements (Ostrom et al., 1994)	“Most individuals affected by the operational rules can participate in modifying the operational rules”.
21. Balanced power between stakeholders (Kauneckis & Imperial, 2007)	Institutional arrangements for managing complex environmental commons are more likely to emerge when there is a balance of power among competing interests.
22. Policy leads to Equity (Hanna, 1995)	Equal distribution of the burdens and benefits of the policy. 1. Representation 2. Process clarity 3. Homogeneous expectations 4. Distributive effects (Hilborn, 2007)
23. Transparent and participatory governance (Hilborn 2007; Salomon, 2009)	Key characteristics for governance problems are; the lack of governance, the impossibility to reach consensus over a subject amongst different stakeholders, bribery problems making the system corrupt. Key characteristics for good governance: transparency for the participants, appropriate scale of decision-making for the fisheries to be managed (space for stakeholders to participate in the process). Stakeholders should have access to the full process of management



24. **There is support for the policy and the topic is salient**(Dimitrakopoulos & Richardson, 2001; Mazmanian & Sabatier, 1983 in Matland, 1995; Dennis James Palumbo & Calista, 1990 in Puzl & Treib, 2006) Public support, support from upper-level political leaders, resources and support from relevant constituency groups, the commitment of implementing officials, executive and legislative sovereign are supportive. Level of conflict and level of attention of proponents during the policy formulation process. If there is a low priority of the policy of the interest groups it is not likely that compliance will be high.

Table 7 Success conditions from the category: Participation and legitimacy

2.4.6 Monitoring and enforcement

The success of a policy is partly dependent on the level of enforcement (Dimitrakopoulos & Richardson, 2001; Hilborn, 2007; Salomon, 2009). The monitoring and sanctioning of rules-offense is found in long enduring institutions (Ostrom et al., 1994 p.38). Quasi voluntary compliance (Levi, 1988 in Ostrom et al., 1994), means that users voluntarily comply if they believe that the collective objective will be achieved and other users also comply, even if they experience no direct sanction if they do not comply. Ostrom et al.(1994) found that external enforcement is not the most important factor that makes users obey to rules. Rather the internal enforcement of appropriators is needed to make sure that those trying to 'cheat' are also complying. Offense of the rules can result in social dishonor. Usually, the costs of monitoring are low because of effective rules-in use. Appropriators of the resource know best which rules would hold and therefore, their participation in designing the rules is useful.

Success condition	Description
25. Monitoring and Enforcement system are in place (Ostrom et al., 1994; Dimitrakopoulos & Richardson, 2001; Hilborn, 2007; Salomon, 2009)	"Monitors, who actively audit CPR conditions and appropriator behaviour, are accountable to the appropriators or are the appropriators". Monitoring and enforcing the fishing practices is necessary for compliance.
26. Sanctions are graduated (Ostrom et al., 1994)	"Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both".

Table 8 Success conditions from the category: Monitoring and enforcement

2.4.7 Rights

In order to have clarity about who is able to use which part of a resource, it is necessary to define boundaries. This step also makes sure that external users are excluded, and the efforts of those using and sustaining the resource are not being harvested by those who did not invest. Also, the appropriators of the resource should be allowed to organise themselves (Ostrom et al., 1994).

Success condition	Description
27. Boundaries are clearly defined (Ostrom et al., 1994)	"Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must boundaries of the CPR itself".
28. Rights to organise are recognised (Ostrom et al., 1994)	"The rights of appropriators to devise their own institutions are not challenged by external governmental authorities".

Table 9 Success conditions from the category: Rights



2.4.8 Trust

Trust between actors of different organisations promotes collaboration (Cook, 2001; Fountain, 1998; Leana & Van Buren, 1999; Ostrom & Ahn, 2003; Tsai & Ghoshal, 1998 in Kauneckis & Imperial, 2007). Trust between members in a network, and learning about each other’s wishes reduces the transaction costs of negotiations (Kauneckis & Imperial, 2007 p.531) Trust and participation that has been created in a certain problem area might also lead to trust in another area. Both (preferably repetitive) interpersonal as well as inter-organisational trust increases cooperation.

Success condition	Description
29. Trust is established across organisations (Kauneckis & Imperial, 2007)	Cooperation and the development of new institutional arrangements for managing complex environmental commons is more likely to occur when relationships of trust can be established among individuals in inter organisational networks.

Table 10 Success conditions from the category: Trust

2.4.9 Nature conservation measures

Ecosystems should be well understood in order to make well balanced decisions for fisheries management (Hilborn, 2007). Ideally, science, planning and enforcement coincide (Gezelius & Raakjaer, 2008; Hilborn, 2007). Data collection needs to contribute to this knowledge. A well working fisheries management system can be seen as ‘an instrument’ for collective action (Gezelius & Raakjaer, 2008 p.11). The success factors contributing to fisheries management can be divided into several levels. The figure below shows these levels.

Management level	Condition for success	Academic/public discourse
Science level	Valid knowledge	Uncertainty and the social construction of knowledge
Political level	Science-based target fishing mortalities	Decision-making procedures and willingness to make long-term priorities
Administrative level	Adequate implementation	Enforcement
Citizens' level	Compliance	Motivation and causes of compliance

Figure 7 Success conditions on different governance levels (Gezelius & Raakjaer, 2008 p.5)

The actors in the scientific level need to provide valid knowledge so that those in the political level can make adequate estimates on the way to manage the stocks in the long-term. On an administrative level a decent implementation should take place and those to who the rules apply should comply. Enforcement of the rules is seen as very important to secure compliance. However, realising those goals



in practice is a precarious business. “Legal and administrative implementation is the Achilles heel of modern fisheries management” (Gezelius & Raakjaer, 2008 p.6).

Salomon (2009) proposes that the TAC for those species where sufficient scientific data on stock assessment is missing, should be governed by the precautionary principle. Especially in the field of setting Maximum Sustainable Yield (MSY) on certain fish stocks in which uncertainty is prevalent over the development, the precautionary principle should be leading (Kell & Fromentin, 2006 in Salomon, 2009). MSY has been criticised for its inability as well as its reluctance to include discard numbers into the stock assessments (Salomon, 2009). This lack of data makes a holistic overview of a stock assessment problematic, with possible disastrous effects for the advice given for the TACs.

Success condition	Description
30. Precautionary approach is leading ³ (Hilborn 2007, Salomon 2009)	In cases of uncertainty on the stocks, the precautionary principle should be leading.
31. Knowledge of complex ecosystems (Hilborn, 2007)	As the functioning of ecosystems are complex, it is necessary to understand the interactions within the ecosystems well in order to understand the impact of management. Data-collection in order to provide information about the resource is vital.

Table 11 Success conditions from the category: Nature conservation measures

2.5 Conclusion

This paragraph will give an answer to the following research question.

Which success conditions for fisheries governance and policy implementation can be extracted from literature?

Conditions advancing policy implementation in a fisheries context have been identified. Most of the conditions are sorted under the category of institutional design. Next, the categories of participation and legitimacy and communication contain most of the conditions. Some general patterns in the conditions for success have been found. The inclusion of stakeholders in the implementation process creates legitimacy. Also, the agreement on goals of a policy by implementers and the stakeholders advances compliance with the policy. Furthermore, salience of a problem creates external pressure for implementation. At this stage, it is still difficult to identify which conditions are more relevant than others in the implementation of the LO in the Netherlands. Therefore, Chapter 4 will provide insights in the importance of the different conditions by studying the case of the DB in Norway. The DB has similarities with the LO. In the next Chapter the methods employed will be demonstrated.

³ “The **concept of precautionary action** aims generally at improving conservation of the environment and the resources by reducing the risk of inadvertently damaging them. More specifically, it aims at helping decision-makers and regulators to take a safeguarding decision, when the scientific work is inconclusive but a course of action has to be chosen. In addition, it intends to promote a more equitable balance between the short-term considerations (which led to the present environmental degradation and overfishing) and long-term considerations such as the need to conserve resources for future generations. It aims at promoting inter-generational equity by reducing the cost of our decisions for future generations and by counteracting the effects of current high economic discount rates which provide a strong incentive to overfish, maximizing the discounted net benefits from a stock and, *de facto*, giving preference to present consumption over future consumption. (Garcia, 2015)”



3 Methods Empirical part

3.1 Introduction

After the identification of success conditions from literature for the implementation of policies in a fisheries context, this Chapter will explain the empirical methods employed in this research. These methods include the case study and different types of data collection. Limitations of the method will be discussed in Chapter 6.

3.2 Case study

Two cases have been studied in this thesis. Yet, those cases have not been studied in a similar way.

Norway

The Norwegian DB has been studied, in order to refine the conditions from literature. The choice for Norway is based on the availability of a similar policy to the one to be implemented in the EU, the cultural similarities and the fact that it is a European country. The Norwegian case can be seen as an instrumental case study (Baxter & Jack, 2008) in order to help refine the theory.

The Netherlands

The Dutch implementation of the landing obligation has been chosen for two reasons. Firstly, the internship at the Ministry of EA gives many insights in the organisational procedures during the implementation phase. Secondly, the Netherlands is still in the process of implementing the landing obligation and thus may be able to use some of the results of this thesis. The case of the ex-ante implementation of the LO in the Netherlands has been studied to test the presence or absence of the refined conditions. An analysis of the presence of the conditions that could benefit the implementation has been done based on the perceptions of stakeholders. This method is the so called 'opinion research' (Verschuren et al., 2010 p.53). This method allows for an identification of problem areas and thus reveals areas for improvement.

Characteristics of a case study

Characteristics of a case study are: a small number of research units, an intensive generation of data, in depth research of the selected samples, open observations and qualitative data gathering (Verschuren et al., 2010). "A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 1981). Data is being gathered by making use of the following techniques; literature, interviews, participant observations during meetings, and analysis of those data sources. The combination of sources facilitates triangulation (Verschuren et al., 2010) increasing the reliability of the study. The objective of this case study is to obtain a holistic overview of the current situation of the implementation in the Netherlands. It also creates a realistic view of fisheries governance in practice. The method of a case study is based on a constructivist paradigm, meaning that truth is related to one's perspective and could therefore not be seen as absolute (Stake & Savolainen, 1995 in Baxter & Jack,



2008; Yin, 2013). The “truth” is accrued around the assumption of a socially constructed reality (Searle, 1995 in Baxter & Jack, 2008).

3.3 Data collection

The data used for this thesis is gathered during internal meetings and talks from-and with policy officers of the Ministry of EA in the Netherlands. As an intern at the Ministry of EA I also had the opportunity to attend most relevant meetings with these policy officers, the stakeholders (NGO’s and industry) and scientists. All data for the case of the Netherlands has been gathered in the period between November 17th, 2014 and May 6th, 2015. The data collection from Norway took place between the 16th -20th of March 2015. I have conducted interviews in Norway (Bergen) with professionals from the fishing industry, policy officers and scientists.

The following sources were also consulted in order to understand the developments in fisheries:

- Twitter(because many fishermen are active on social media)
- Official websites of the EP, EC, Ministry of EA & Fisheries organisations
- The magazine Visserij Nieuws (Fishing News) with Dutch news on fisheries
- Internal documents of the Ministry of EA
- Scientific literature of the discard ban in Norway

Snowball Sampling Technique

Snowball sampling is a method used to find referrals who are knowledgeable or have experience with the researched topic (Biernacki & Waldorf, 1981). New respondents were found by making use of so called locators. The locators are in contact with interviewees considered relevant for the research and can be compared to key informants. The locators have been treated in the same way (e.g. interview) as other respondents in the research. The use of those contacts is based on the assumption of an unequal distribution of knowledge about a certain topic due to either experience or knowledge gathering in the past or present (Biernacki & Waldorf, 1981). The policy officers at the Ministry of EA have been the locators in this study for the Netherlands.

Anonymity

The implementation of the LO is a politically sensitive topic. Some of the interviewees have asked to stay anonymous during the research. In order to make people talk freely about the policy, it has been important to guarantee their anonymity. I made the decision to anonymise those interviewees who did not request anonymity as well to be able to make categories of actors. For instance interviewees of the Netherlands Enterprise Agency (RVO), Netherlands Food and Consumer Product Safety Authority (NVWA), Ministry of EA and the Permanent Mission are all categorised as “Government”. Also, if I would not have anonymised all actors, it would have been easy to identify anonymous interviewees as the fisheries world is rather small. All interviews have been recorded (after approval of the interviewees) and transcribed. The records and documents are not publicly available because of the aforementioned reason.



Selection of interviewees Norway

In Norway, respondents for the interviews have been found by both actively looking for an equal distribution of representatives (e.g. NGO/scientist/fishermen etc.), as well as making use of the snowball sampling technique. An event on reducing discards has been organised by the Ministry of EA from the Netherlands and the Norwegian Directorate of Fisheries and the Marine Research Institute (MRI) in Bergen, Norway. This event gave me access to several interviewees (Policy officer 1, Scientist 2, Industry 1).

The other interviewees have been selected through:

- a scientific article on the lessons the EU could learn from the Norwegian ban (Scientist 1);
- a representative of the industry that I found via the auction market in Bergen (Industry 2);
- an NGO and the Danish expert on the discard ban via a contact of the Permanent Representative of the Kingdom of the Netherlands in Denmark.

The people who attended the workshop can be considered experts in fisheries management, the discard ban or selective fishing.

Interviewee	Number
Scientists	Scientist 1 Scientist 2
NGO	NGO
Industry	Industry 1 Industry 2
Policy officer	Policy officer
Expert discard ban	Expert
TOTAL	7

Table 12 Interviewed actors Norwegian case

Selection of interviewees the Netherlands

In the Netherlands, I have conducted interviews with policy officers of the Ministry of EA, the RVO, The NVWA, a project leader, fishermen, foreman (representatives) of the Nederlandse Visserbond and VisNed and scientists of IMARES & LEI (Agricultural Economics Institute) in April and May 2015. In Brussels (April 2015) I have conducted an interview with a policy officer at the EC and an interview with a representative of the Permanent Mission in Brussels. The interview at the EC was not structured and therefore the information of this interview is not treated in the same way (testing success conditions in the Netherlands) as the other interviews. The interview has been used in order to gain more background information.

Sole and plaice are commercially viable species for the Netherlands. Fishing for those species has been the criteria for the selection of fishermen. The other representatives of the fishing industry, the NGO, and the government representatives are selected based on their role in the implementation process.



Interviewee	Number
Scientists	Scientist 1 Scientist 2 Scientist 3
NGO	NGO
Industry	Industry 1 Industry 2 Industry 3 Industry 4 Industry 5 Industry 6
Government	Government 1 Government 2 Government 3 Government 4 Government 5
EC	EC
TOTAL	16

Table 13 Interviewed actors the Netherlands

Interviews

The interviews were semi-structured. The Norwegian interviews were focussed on the identification of critical factors that contributed to a successful implementation of the discard ban. The Dutch interviews, however, were designed to test the presence of the conditions in the Netherlands and identify discourses around the LO. Due to the variety of stakeholders and their expertise and knowledge of certain topics over others, the interviews did not always touch upon all previous established questions. Instead, they went into depth on specific conditions the interviewee was knowledgeable about.



4 Lessons from Norwegian practice

4.1 Introduction

Norway has been one of the few (next to Canada, New Zealand and Iceland) countries in the world with a discard ban. This Chapter provides insights in the Norwegian fisheries management, the implementation of the Norwegian discard policy, the conditions Norwegian interviewees consider crucial for this implementation and the way those conditions relate to, or could be of use in the Netherlands. The following research question will be answered:

Which success conditions for the implementation of a discard ban can be extracted from experience in Norway?

The Norwegian fishing fleet consists of almost 6000 vessels (Directorate of Fisheries, 2015) and most of the landed species, around 75%, is pelagic (European Commission, 2007). The fishing areas of the Norwegian fleet are the Barents Sea, Norwegian Sea and the North Sea. The figure below shows the geographic location of those fishing areas.



Figure 8 Norwegian fishing areas (Arctic Focus, 2015)



A crisis of the cod and haddock stocks in 1983 led to the implementation of the so called discard ban (DB) in 1987 (Gullestad, 2013). Next to the fear for the collapse of those stocks, ethical grounds concerning the waste of fish had been driving the fish management plans. The DB is part of a bigger package of policy instruments aiming to avoid catching unwanted fish. Technical measures imply for example mesh size and use of certain sorting grids. Regulatory measures imply catch quotas, the closure of fishing areas in which a high percentage of undersized fish is found and the reporting of landings. These technical and regulatory measures support each other in order to avoid the catches of unwanted fish. The next paragraph introduces the conditions that lead to successful implementation of the Norwegian DB, by elucidating the highlights of the workshop in Norway.

4.2 Norwegian experiences with a Discard Ban

This paragraph will present the results of the workshop in Norway on the reduction of discards. The following principles for a successful implementation of the DB in Norway resulted from the workshop.

Fisheries management in Norway is based on the following four main principles:

- Research
- Regulatory measures
- Monitoring control and surveillance
- Enforcement and sanctions (Workshop March 2015).

Next to these principles, the workshop provided insights into participation, trust and adaptability of fisheries management. Also, some incentives stimulating compliance are described.

- 1) It is important to have those participating who are most concerned by rules, regulations or control. Participation in designing the system and decision-making creates **legitimacy** and enhances the **functionality of the system** (Johnsen & Eliassen, 2011). Fishermen **participate** in the management of fisheries. Stakeholders are in continuous discussion and negotiation with each other in order to create a common sense and stipulate **common goals** (Workshop March 2015).
- 2) Long term relationships avoid conflicts and tensions to lead to dead ends (Johnsen & Eliassen, 2011). The fishermen's organisations involvement in management stretches over a long time span (Workshop March 2015). This long term relation increases knowledge of dealing and communicating with other actors such as scientists and fishery managers. It is necessary to have a high level of **trust** between the fishermen, the monitoring agencies, ministries and fisheries directors in order to move forward. A strict separation between 'an observer for scientific purposes' and 'an inspector who report infringements' is necessary in order to maintain this trust and avoid conflict of interests (Workshop March 2015).
- 3) Rules are **adaptable to real-world situations**. A continuous dialogue between the fishermen, the Fisheries Directorate and the coast guards leads to a quick identification of problems. An example of fishermen's participation in the management is the following. Whenever many illegal fish is being caught, the area in which the fish is caught is being reported by fishermen to



the authorities. As a consequence, the area is closed or has restricted access possibilities for fishing activities. This is done in order to protect the juveniles and protected species (workshop March 2015).

- 4) It is impossible to expect surveillance and **enforcement** to be a sufficient and realistic means to make fishermen comply with the DB, due to the big scale of the fishing fleet (Gezelius & Raakjaer, 2008). Therefore, the Norwegian authorities employ a **risk-based control system** focussed on sensitive areas (Workshop March 2015). Sensitive areas are those areas subject to previous violations and infringements or areas where high numbers of undersized fish have been identified. Moreover, a level playing field has been emphasised as a necessity in order to align regulations and sanctions with foreign countries.
- 5) Fishermen's **compliance** is the key for successful fisheries management. However, compliance cannot be achieved by legal measures only (Johnsen & Eliassen, 2011). A common code of conduct by those fishing can lead to more compliance, but also to more increasing rule-circumventing behavior. Reasons for non-compliance are investigated in order to find the right instrument to reverse behaviour. Several characteristics of the Norwegian DB that help to advance compliance are:
 - A specific rate of the by-catch (it is to be defined whether this is haul, day or trip) of other species that is not the target-species may be landed and sold. The by-catch can either be marketed for the fishermen's own profit, or the profit may go to e.g. research for collective purposes (Johnsen & Eliassen, 2011).
 - It is necessary that fisherman have enough **time in order to change** their attitudes. It takes time for fishermen to accept and find another way of fishing and handling the catch. In the Norwegian case, this time is secured due to the gradual implementation of the discard ban from the period of 1987 until now.
 - An incentive for Norwegian fishermen to secure sustainable fish practices is the so called '**green label**', a certificate ensuring sustainable fisheries. The market (mainly export) demands this **certification**.
 - Fishermen are allowed to fish in **precautionary areas**, if they use certain selective gears in those areas. Allowing the fishermen to continue fishing in areas that otherwise would have been closed, incentives the use of those selectivity gears. Real time closures (RTC) of an area occurs, if more than 15% of undersized fish are caught in that area. Avoiding this type of area closure can be reached by fishing selective. The RTC has a stronger protection as well as enforcement element.



4.3 Results of the interviews

This paragraph gives an overview of the most important findings of the interviews that have been conducted in Norway. The questions that have been asked are based on the previously identified categories and can be found in Appendix 1. The complete overview of the interviews and the confirmation of the different interviewees on the conditions can be found in Appendix 2. Based on the amount of interviewees emphasizing a certain condition, the condition has been selected for the final list of conditions. At least 3 interviewees or the workshop must have emphasized a condition in order to be selected for the list of conditions. Consequently, the final list of conditions has resulted from the literature on policy implementation and fisheries management, refined with interviews and the workshop on the practice of the discard ban. This final list of conditions will be tested on their presence and serve as a central guide for the search of success conditions in the Netherlands.

The following table shows the synthesis of the most important conditions for successful implementation of the Norwegian interviews with literature. The conditions in *italic* have been emphasized as critical factors by several interviewees and have therefore been added. The other conditions are primarily derived from literature and supported by at least 3 interviewees.

Condition	Definition	Emphasised by
1. The implementation process is flexible (Dennis J. Palumbo et al., 1984 in Matland, 1995)	“Flexible strategy that allows for adaption to local difficulties and contextual factors” (Dennis J. Palumbo et al., 1984 in Matland, 1995)	Scientist 1, Scientist 2, Industry 1, Industry 2 Policy Officer, Expert, Workshop
2. Enterprises are nested (Ostrom et al., 1994)	“Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises”.	Scientist 1, Scientist 2, NGO, Industry 1, Industry 2, Policy Officer, Expert
3. Stakeholders motivations are well understood (Berman, 1978; Berman & others, 1980; Hjern, 1982; Hjern & Hull, 1982; Hull & Hjern, 1987; Lipsky, 1978 in Matland, 1995; Dimitrikapoulis & Richardson, 2001)	“Understanding implementation processes can be gained by looking at a policy from the view of the target population and the service deliverers” Goals, strategies, activities, and contacts of the actor need to be understood.	NGO, Expert, Workshop
4. Certification	<i>Certification can facilitate the motivation of fishermen to opt for sustainability labelling (by economic market driven incentives, rather than regulative incentives)(Johnsen & Eliassen, 2011)). This is aimed at the increase of fishermen responsibility. Certification might also serve as a platform for communication and learning. The possibility for this to happen depends on and impacts both the physical as well as the cultural circumstances.</i>	NGO, Expert, Workshop
5. Shared problem	Institutional arrangements for managing complex	NGO, Scientist 1,



The implementation of the EU landing obligation in the Netherlands

<p>(Kauneckis & Imperial, 2007; Matland, 1995; Van Meter & van Horn, 1975 in Puzl & Treib, 2006)</p>	<p>environmental commons are more likely to emerge when those with competing interests develop a shared definition of underlying problems. In this way a shared problem can be solved.</p>	<p>Scientist 2, Policy Officer, Expert, Workshop</p>
<p>6. Mutual interests (Kauneckis & Imperial, 2007)</p>	<p>“When policy actors view policy choices in terms of positive sum games, cooperation is more likely to result in development of new institutional arrangements for managing complex environmental commons”. Conversely, cooperation is less likely to occur when policy choices are viewed as zero sum games.</p>	<p>NGO, Policy Officer, Expert</p>
<p>7. Transparent and participatory governance (Hilborn 2007; Salomon, 2009)</p>	<p>Key characteristics for governance problems are; the lack of governance, the impossibility to reach consensus over a subject amongst different stakeholders, bribery problems making the system corrupt.</p> <p>Key characteristics for good governance: transparency for the participants, appropriate scale of decision-making for the fisheries to be managed (space for stakeholders to participate in the process). Stakeholders should have access to the full process of management</p>	<p>NGO, Scientist 1, Scientist 2, Industry 1, Expert, Policy Officer</p>
<p>8. There is support for the policy and the topic is salient(Dimitrakopoulos & Richardson, 2001; Mazmanian & Sabatier, 1983 in Matland, 1995; Dennis James Palumbo & Calista, 1990 in Puzl & Treib, 2006)</p>	<p>Public support, support from upper-level political leaders, resources and support from relevant constituency groups, the commitment of implementing officials, executive and legislative sovereign are supportive. Level of conflict and level of attention of proponents during the policy formulation process. If there is a low priority of the policy of the interest groups it is not likely that compliance will be high.</p>	<p>NGO, Scientist 2, Industry 1, Expert, Policy Officer</p>
<p>9. Monitoring and Enforcement system are in place (Ostrom et al., 1994; Dimitrakopoulos & Richardson, 2001; Hilborn, 2007; Salomon, 2009)</p>	<p>“Monitors, who actively audit CPR conditions and appropriator behaviour, are accountable to the appropriators or are the appropriators”. Monitoring and enforcing the fishing practices is necessary for compliance.</p>	<p>Scientist 1, Policy Officer, Workshop</p>
<p>10. Trust is established across organisations (Kauneckis & Imperial, 2007)</p>	<p>Cooperation and the development of new institutional arrangements for managing complex environmental commons is more likely to occur when relationships of trust can be established among individuals in inter organisational networks.</p>	<p>NGO, Scientist 2, Policy Officer, Workshop</p>
<p>11. Knowledge of complex ecosystems (Hilborn, 2007)</p>	<p>As the functioning of ecosystems are complex, it is necessary to understand the interactions within the ecosystems well in order to understand the impact of management. Data-collection in order to provide information about the resource is vital.</p>	<p>NGO, Scientist 2, Expert, Workshop</p>
<p>12. Reasons for compliance are in place</p>	<p><i>The fishermen’s organisations involvement in management stretches over a long time –span, increasing the knowledge on how to deal/communicate</i></p>	<p>NGO, Scientist 1, Policy Officer, Workshop</p>



with other actors (scientist, fishery managers). Conflicts and tensions don't necessarily lead to dead ends in the process, due to the long enduring relationships (Johnsen & Eliassen, 2011; Workshop March 2015) Common code of conduct by those fishing. A code of conduct can lead to more compliance, but also to a shared rule-circumventing behavior.

13. System is considered legitimate and rational	<i>Depending on the communication and collaboration between fishers and fisheries managers, transparent system, extensive influence & participation fishermen in Norway have had. (Johnsen & Eliassen, 2011)</i>	<i>NGO, Scientist 2, Workshop</i>
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Table 14 Results of the Norwegian interviews

4.4 Conclusion

The following sub research question will be answered.

Which success conditions for the implementation of a discard ban can be extracted from experience in Norway?

The conditions that have been identified as important are quite evenly divided amongst the different categories. Most of the conditions relate to the categories of common goals, institutional design, communication and participation and legitimacy. The table below gives an overview of the conditions considered crucial for the implementation of the landing obligation.

Institutional design	Communication	Common goals	Participation and legitimacy	Monitoring and enforcement	Trust	Nature conservation measures
Enterprises are nested	Stakeholders motivations are well understood	Shared problem	Transparent and participatory governance	Monitoring and enforcement system is in place	Trust is established across organisations	Knowledge of complex ecosystems
The implementation process is flexible	<i>Certification</i>	Mutual interests	<i>System is considered legitimate and rational</i>			
		<i>Reasons for compliance are in place</i>	There is support for the policy and the topic is salient			

Table 15 List of success conditions important for the implementation of the landing obligation



5 Presence of the success conditions in the Netherlands

5.1 Introduction

This Chapter will answer the following research question:

Are the success conditions for the implementation of the landing obligation present or absent in the Netherlands?

A short overview of the Dutch demersal sea fishing industry, the organisational structures in the Netherlands and the actors involved will be given in order to understand the context in which the LO takes place. After this brief overview, the results of the test for the presence of the success conditions that have been identified in the previous Chapters will be presented. This will be followed by an in-depth analysis of the stakeholder's opinion on the presence of the success conditions.

There are approximately 300 active demersal fisheries cutters in the Netherlands. The fish exports have a considerable share of 7% (Ministerie van Landbouw, Natuur en Voedselkwaliteit, 2007), in the European fish export market. The majority of the fleet fishes in the North Sea and North Western Waters, which are marked in the map as the areas IV and VII. The main fishing techniques for the Dutch demersal industry are pulse fishing, sumwing, beam trawling, shrimp and flyshoot (Agrimatie LEI, 2015).

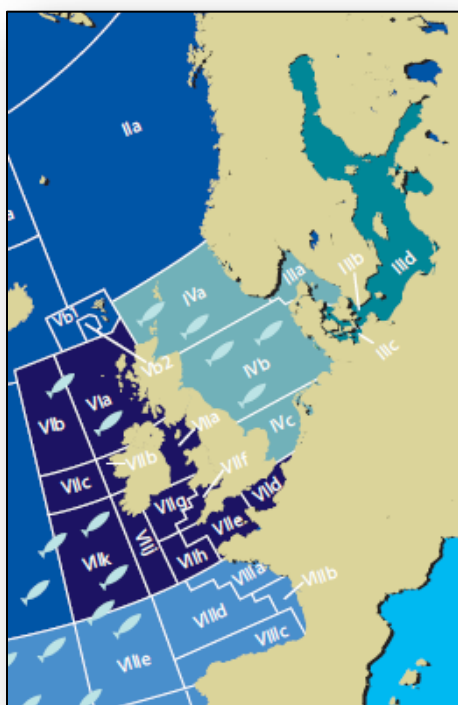


Figure 9 Fishing areas of Dutch demersal fleet (EUbusiness, 2015)

5.2 Organizational structure of Fisheries in the Netherlands

The Department of European Agricultural & Fisheries Policies & Food Security (ELVV) of the Ministry of EA is the main government institution involved in fisheries management. Producer Organisations (PO's) are the central organisations for enterprises dealing with fish. A PO brings together those who catch the fish, the processors and the traders (van Hoof, 2010). Additionally, they also manage the collective and individual use of quotas of fishermen. If a fisherman tends to overshoot his individual quota for a certain species, the PO could mediate the purchase or exchange of another fishermen's quota for that species in return for another quota (Nederlandse Vissersbond, 2015). There are two main fishing organisations in the Netherlands representing the interests of the fishermen, called the Nederlandse Vissersbond and VisNed. Those organisations work together on different



projects in the Cooperative Fisheries Organisation (CVO) relating to e.g. the implementation of the LO. These are the main structures in the Dutch fisheries organisations. The following paragraph will provide the results of the test for presence of the previously established success conditions in the Netherlands.

5.3 Presence of the success conditions in the Netherlands

In this paragraph, an overview of the different success conditions will be given resulting from an analysis of the interviews. After the presentation of the analysis, each success condition will be elucidated with a description of the interview results.

✗ A red cross represents absence of the success condition.

✓ A green tick represents presence of the success condition.

Institutional design	Communication	Common goals	Participation and legitimacy	Monitoring and enforcement	Trust	Nature conservation measures
Enterprises are nested ✓	Stakeholders motivations are well understood ✗	Shared problem ✗	Transparent and participatory governance ✗	Monitoring and enforcement system is in place ✗	Trust is established across organisations <u>Not tested</u>	Knowledge of complex ecosystems ✗
The implementation process is flexible ✓	Certification <u>Not relevant for Dutch situation</u>	Mutual interests ✓	System is considered legitimate and rational ✗			
		Reasons for compliance are in place ✗	There is support for the policy and the topic is salient ✗			

Table 16 Presence or absence of the success conditions in the Netherlands



5.4 Clarification of the results

5.4.1 Institutional design

Enterprise is nested



Present because:

Only little changes occurred in the structure of the collaboration platforms. Tasks between the different institutions are clearly defined. According to most interviewees, there is open discussion between the stakeholders involved in the implementation of the LO.

Institutional set up

The institutional set up for meetings between different stakeholders involved in fisheries was in place before the LO, meaning that regular meetings and collaboration in different projects took place. With the introduction of the LO, the scope of the meetings transformed into a preparation trajectory of the implementation called the Projectgroep Uitvoeringsagenda Aanlandplicht; concurrently, the frequency of the meetings intensified (Scientist 3).

Collaboration

Parties are collaborating in the CVO in roughly twelve projects related to the landing obligation (Scientist 2). Trust is said to be an important if not vital element of the collaboration between the industry and the government (Industry 6). “Those working together in different projects are familiar to one another - both to the Ministry of EA and the industry- and it is of importance to have people working together who can relate to both worlds” (Industry 6). The industry has always been discussing with all stakeholders, even though the industry is “rabidly” against the LO (Industry 2). The industry commented that they were not taken seriously initially by the Ministry of EA or the EC when they mentioned the severity of the consequences of the LO on their 80mm⁴ fisheries (Industry 2). Mutual trust is necessary in order to cooperate, but there is mutual suspicion between fishermen and politicians (Industry 4). Additionally, a gap between the government and the fishermen is observed, as people working at the Ministry of EA lack the practical experience in fisheries, but do have to take important decisions about the industry (Industry 3).

⁴ Mesh size of fishing nets for targeting e.g. sole.



The implementation process is flexible



Present because:

Time to innovate is necessary in order to be able to comply with the LO and secure economic profit at the same time. Additionally, time is necessary in order to accomplish a mental switch of discard-avoidance behaviour. However, the LO might be a good instrument to stimulate the innovation processes that should lead to selective fishing. It is still unclear in which way the LO will be implemented and therefore estimations on the possibility to comply are hard to make. The interviewees do agree that time is necessary in order to give the fishermen time to prepare for the LO. The amount of time that is expected necessary differs from 4 years' time until the time that a whole new generation of fishermen is running their business. There is flexibility in the implementation of the LO, which will further enhance the time to adapt to the LO.

Flexibility

All interviewees think that there will be a certain amount of flexibility for the industry to adapt to the LO. This flexibility can be created by either scientific evidence for survivability of species or by the disproportionate costs of handling unwanted catches. It is necessary to be flexible as the research, that is currently taking place, divulges into new findings. Those results should be taken into account in the regulations (Government 1).

Theoretically, fishermen have time until 2019 to change their ways of fishing, congruent with the phasing plans. It will technically be possible to comply with the landing obligation straight away, but probably not at acceptable costs (Scientist 2). The Dutch fishing industry will have to make drastic changes order to fish more selectively (Scientist 3). It will take time to find efficient ways to sort and store the fish, adjust the fishing gear, change behaviour and find suitable markets (Scientist2). Time is necessary in order to fish more selectively and prove the high survivability of certain species (Industry1). Gear innovations are currently developing at a low pace. The landing obligation will be a tool that builds up the pressure to innovate (Government 2). If fishermen will not be able to fish more selectively, half of the fishing fleet will go out of business. In practice, this would mean that some of the fishermen will go out of business, demonstrating the impossibility for certain fisheries to comply. This would eventually lead to exemptions of the policy (Scientist 1). According to Industry 5 it will be possible to fish more selectively. However, it might take a new generation in order to think of discard-free fishing as the status quo (Government 4).



5.4.2 Communication

Stakeholders' motivation are well understood



Absent because:

Most interviewees have an idea about the way in which different stakeholders think about the LO. However, there are important differences in the ideas about the goal of the LO and the reasons for this goal. In addition, there are different ideas about the feasibility of complying with the LO. Yet, discussions are only taking place about the way of implementing the LO.

Understanding

There is spread in the opinion of the interviewees on which stakeholders are most distanced from their own opinion about the appropriateness of the implementation of the LO. In order to create mutual understanding, it is necessary to have meetings with the involved stakeholders in order to exchange ideas (Industry 1). The question of why the LO is going to be implemented and with which purpose should be discussed (Government 5, Scientist 3). The discussion about the LO should be based on facts instead of on emotions. Currently, a discussion based on emotion is prevailing (Industry 6). Selective fishing is not necessary if the survivability of species that are being discarded can be improved (Scientist 2). NGOs probably have the most opposing view as they believe in improving selectivity. However, if survivability cannot be improved, improving the selectivity should be the goal. The LO is not necessary for fish stocks management. However, there is an argument that discards are a waste of resources if there is no high survivability (Scientist 2).

Certification

As many of the interviewees responded that they did not think certification was relevant for the compliance to the landing obligation, the condition has been repudiated for the Dutch implementation. Compliance with the LO was not expected to rise as a consequence of certifying discard-free fishing.



5.4.3 Common goals

Shared problem



Absent because:

The same goal of the LO is not shared by all stakeholders. Fishing more selectively would eventually lead to the goal of the EC 'ending the waste of resources'. However, the direction in which solutions are being sought does differ if one focusses on improving survivability of species or on fishing net innovations. Also, those who ultimately have to work and comply with the LO – the fishermen- do not share the vision of the goal the LO is aiming to achieve.

Goal of the LO

The goal of the LO according to the EC is to end the wasteful practice of discarding. There are four prevailing perceptions about the primary goal of the landing obligation. Those are;

- Putting a halt to the waste of resources as a consequence of discarding (Government 1, 2,3,5, Industry 1, 2,4, Scientist 1)
- Increasing selectivity and avoid by-catch (Industry 6, NGO, Government 3,4, Scientist 3)
- Reducing the fish mortality as a consequence of discarding (Scientist 2).
- No understanding of the goal of the landing obligation (Industry 5), or understanding the goal in a different way e.g. as an end to the waste of resources by high-grading (Industry 3).

These differences in perceptions lead to different perceptions of the appropriateness of the LO to reach differing goals, or to reach a solution for a non-identified or not - understood or observed problem.

Goal or means?

Increasing selectivity is both mentioned as the goal of the landing obligation (Government 3, 4, NGO, Industry 6, Scientist 3) as well as the instrument in order to stop the waste of resources by discarding by-catch (Government 1, 2, 4, Industry 1, 2, 4, Scientist 1). Reducing the fishing mortality could be reached by increasing the survivability of species after handling them (Scientist 2), or by fishing more selectively (Scientist 2, Government 3).

Appropriate means?

Furthermore, the way in which the LO is seen as the right instrument to reach the differing goals varies. A number of interviewees fear that it will be impossible to comply with the LO (Government 3, Scientist 1) which could lead to a wider problem in which fishermen evade rules (Scientist 1). The industry does not see the LO as an appropriate instrument as they should be more incentivised instead of repressed (Industry 2). However, the LO is also seen as the right instrument (Government 2).



Mutual interests



Present because:

The search for selective fishing techniques is triggered by the LO. This can be seen as a benefit for all stakeholders (for fishermen to reduce their working pressure and work more efficiently) and for policy officers to reach the goals of the LO (put an end to discarding).

Advantages or opportunities as a consequence of the LO

Industry 4 believes that the LO can improve the societal acceptance of fisheries: “The North Sea is also the property of someone living in Amsterdam. Therefore, we need to follow societal developments closely and listen carefully to all. It is important to explain the fishermen’s stand in terms of running a company as a primary aim“. Hence, by creating understanding for fisheries, a certain acceptance of the fisherman’s practices is expected. This is confirmed by Government 1, who explains that fishermen will have to live up to the expectations of the society and create in this way a so called “license to produce“. The side effects that are created as a consequence of the LO might turn out bigger than the actual ban of discards (Government 5). For example, LO might trigger innovations (Government 3, 5, Scientist 1, Industry 1) and the search for new markets (Government 5). The LO might lead to more data on discards and more information about the behaviour of fishermen at sea (Scientist 3). The biggest advantage of the implementation of the LO is that it will trigger the prevention of catching undersized fish (Scientist 3).

Disadvantages as a consequence of the LO

Analysis of the interviews made evident a number of disadvantages:

- 1) No benefits as a consequence of the introduction of the LO can be identified by some of the stakeholders (Industry 2, 3, 4)
- 2) There is a possibility that an LO will be implemented which only exists on paper, if no enforcement is taking place (Scientist 2).
- 3) There will be a need for more civil servants with a diminishing fishing industry, which is a paradoxical development (Government 4).
- 4) A derogation of the already fragile trust between the government and the industry is taking place (Government 1, 2). The following quote of a fisherman shows the perspective of a fisherman: “The Ministry thinks that we have a choice to fish more selectively. I try to explain that we also would like to do so, but we cannot. It would mean less work and less costs for us” (Industry 3).
- 5) There is both fear for the ecological as well as the economic consequences.
The ecological fear relates to the consequences of the LO for the future quota, and the economic consequences relate to the costs involved (Industry 1).



Governance and rule evasiveness

There is currently good collaboration, the fish stocks are in good conditions and the fishermen are complying relatively well with the rules. This could change with the implementation of the LO. Proper fisheries management calls for a good relationship and trust between the stakeholders (Scientist 1). The researchers are also dependent on collaboration with fishermen for the estimation of stocks. If the LO is not enforced, this might lead to a deterioration of the discard-data. Another possibility is that fishermen prohibit observers on their cutters, as they might fear that the data is being used for disadvantageous purposes (Scientist 1). The governance problem is shared by Industry 2. If the LO will unscrupulously be implemented, fishermen will evade the rules. This will lead to a broader lack of compliance with rules. The rules have to be able to be implemented, complied with and enforced. If a policy does not have societal support, it is deemed to fail (Industry 2).

Reasons for compliance are in place



Absent because:

Fishermen are not likely to mutually observe and check each other to see whether or not they are complying with the LO. If complying with the landing obligation leads to relative advantages or disadvantages with reference to other fishermen, reporting infringements or taking other fishermen to task are more likely to occur.

Non-compliance and scenarios leading to compliance

None of the interviewees immediately expects fishermen to take each other to task, if there is disobedience or refusal of other fishermen to comply with the LO. Moreover, the expectation is even that fishermen would actually take each other to task if they do comply with the landing obligation (Government 1, Government 4, Industry 6). However, if fishermen would feel the economic consequences of the LO when they do comply and notice that others are still discarding, the chance might be higher that they would report infringements (Government 3, 5, Scientist 3). The same might happen if one fishery manages to fish more selectively than the other (Industry 1). In quota-management, a system of co-management in which fishermen mutually observe each other has been created. This is coordinated by POs. A similar culture should be created around the compliance to the LO (Government 2, Scientist 1). A system which would be based on shifting the responsibility for avoiding discarding to the whole fisheries community of e.g. the same PO, rather than the single fishermen who discarded, could work. The discarding behavior of fishermen would have an effect on the whole community and due to the network intensity in fishing communities and high social pressure, a community approach could function well for compliance (Scientist 1).

The question remains, what else is necessary in order to make fishermen comply with the landing obligation? Fishermen could be incentivised to comply with the LO measurements by means of a gradual implementation and enough time to make themselves familiar to, and thus adapt to, the LO (Industry 6).



According to Scientist 2, the way in which the LO is going to be implemented should undergo some changes.

- Undersized by-catch is not allowed to be used for human consumption and has to be landed, but doing so will be costly because of the low market price. This is a disincentive for compliance.
- However, if one allows using the fish for human consumption and thus fisherman will receive higher market prices, an incentive for catching undersized fish is created, which is undesirable too. Therefore, a system should be created that covers and thus compensates the costs the fishermen make, but does not incentivize the fishermen to target undersized fish. If such a system will not be implemented, a strong emphasis should be placed on control mechanisms (Scientist 2).



5.4.4 Participation and legitimacy

Transparent and participatory governance



Absent because:

The Scheveningen Group is not a transparent decision-making platform and the processes cannot be followed by the wider public. Stakeholders are briefed by means of information-provision by the Ministry of EA. Most of the fishermen are represented by the foreman of the industry in the national Projectgroep Uitvoeringsagenda Aanlandplicht, but it is being questioned to what extent they are actually informed about the developments and can be represented by the foreman. Complexity of the LO is considered a barrier to participation of fishermen in the LO discussions.

Transparency:

It is very difficult to make estimates on the final decision-making of the phasing in plans for 2016-2019 (Industry 6, Government 2) due to the constantly differing political field, changing relations and changing interests of the MS in the Scheveningen Group. The Scheveningen Group is not a transparent decision-making platform (Government 1) and national stakeholders cannot participate. However, transparency would slow down the decision-making process (Government 1) and the speed is necessary in order to formulate a joint recommendation in time⁵. Those who would like to follow the decision-making process, e.g. NGOs and the industries, cannot do so (Government 1, Scientist 1, 2, 3, Industry 2), unless they are particularly informed about the developments by the Ministry of EA. Nonetheless, the policy makers at EA are considered very open towards the industry about the political feasibilities of their wishes and the processes taking place at the Scheveningen Group (Government 4, Industry 1).

Participation

There are only a couple of scientists involved in the Projectgroep Uitvoeringsagenda Aanlandplicht and it can be questioned to what extent scientists are represented. Fishermen are expected to be represented by the foreman of the fishing industry. It is difficult to estimate to what extent feedback of all developments is reaching the fishermen and vice versa which feedback is reaching the foreman. Most of the fishermen recently realized that the LO will be implemented (Scientist 2). The LO dossier is too complex to simply join in. This is a barrier to participation for fishermen (Industry 4). The problem of the current projects of the CVO is that there is not much support for those projects from fishermen, because most fishermen oppose to the LO. Therefore, participation in those projects is seen as an implicit collaboration towards implementation of the LO (Industry 4).

⁵ A deadline for the joint recommendation has been set by the EC at the beginning of June 2015.



System is considered legitimate and rational



Absent because:

Scientists are expected to play a neutral role in the decision-making by providing relevant information. Yet, they are supposed to work together with the fishermen in order to collect data. Fishermen might fear for the consequences of data-collection, for policy implications, and thus the possible danger for their future business. E.g. data collection on by-catch in a certain fishery could lead to catch composition estimates, leading to a strong control on discarding of fishermen using that specific type of gear. Most of the stakeholders feel consulted during the implementation process; however, decision-making is largely happening beyond their reach.

Towards the decision-making

The decision to implement the LO as part of the reforms of the CFP, has been taken beyond the reach of national policy makers and stakeholders. Instead, the decision has been taken on an international political level (Government 4). However, the national stakeholders have been consulted during the phase prior to the decision-making. The Dutch industry has only had a limited influence in the decision-making processes (Industry 1). The article 1380/2013 was clear and simple. However, due to the negotiations between MS and the influence of their industries, the article became difficult to understand. During a Regional Advisory Council (RAC) meeting, people from the EC were not able to explain article 1380/2013. An event like that leaves a poor impression of the EC on the scientists and the industry (Scientist 1). If the EC is not able to explain the policy: “In what way should fishermen be able to understand the policy” (Scientist 1).

Implementation plans

Shaping the implementation of the policy is the responsibility of the regional MS; for example North Sea bordering countries. This platform in which the MS have to reach consensus regarding the phasing in the period 2016-2019 is called the Scheveningen Group⁶. After a joint recommendation of the MS on how to proceed, the EC has to review the plan. A joint recommendation for the implementation of the LO by the regional groups like the North Sea are expected to succeed because of the following reasons. Firstly, there is fear for unscrupulous EC implementation of the LO without any exemption as a consequence of the failure of the Scheveningen Group to provide a joint recommendation. Secondly, there is a fear for political loss of face (Government 3). The Projectgroep Uitvoeringsagenda Aanlandplicht is the central platform in the Netherlands in which the stakeholders discuss the implementation process.

Participation in the implementation plans

In general, the fisheries industry feels acknowledged by the Ministry of EA, but there are topics of conflict (Industry 1). There is for example a lack of understanding about the way in which decisions are taken. One fisherman states: “I do not understand why a decision is being taken, which is a general problem in politics, and only after the feasibility of the policy is being researched” (Industry 3). Policy

⁶ The Scheveningen Group only discusses the implementation plans for the North Sea.



decisions for the implementation plans are based on scientific information that has been demanded for (Scientist 1, 2) as well as on the information resulting from the CVO projects (Industry 6). Scientists on the other hand, have expressed that they feel caught up between the fishermen and policy makers. Fishermen do not always want to provide information about their fishing activities if consequences of information provision may turn out negatively for them. Scientists who are both requested to provide information to policy makers, as well as to cooperate with fishermen in order to collect data find themselves in a difficult position (Scientist 3). This is an area of concern endangering neutral science.

Support for- and salience of policy



Absent because:

Framing is an important part of the way in which the LO is perceived by the public. If a fisherman explains the impossibility and lack of urgency to avoid by-catch or bring ashore fish that would otherwise survive the discarding process, public support for this point of view may be generated. Someone else might explain the story in a different way, framing the discards as a waste of resources and may by doing so, also generate public support. The LO is not a salient topic for the Dutch society. Not many people are cognizant about the discards in fisheries. The goal to fish more selectively is shared by most stakeholders. However, the means to reach this goal by implementing the LO is a topic of conflict.

Support of stakeholder's organisations and government bodies for LO

There is support for the policy within the government bodies (Government 1, 4). However, the way in which the policy should be implemented and executed is subject to discussion and vulnerable to critique (Government 1, 2). There is support for the development of more selective ways of fishing (Industry 1, Scientist 1, 3). However, the LO is not seen as the right means to achieve selective fishing (Industry 1, 2). There is a varied opinion about the appropriateness of the LO in the scientific world (Scientist 1, 3) and there is no support for the LO from fishermen (Industry 1, 2). There is a small group of fishermen who contribute by sharing thoughts and ideas on the way forward as they feel the necessity of finding a solution (Industry 4). The figure below is an excerpt from a fisherman about the LO. It translates roughly to "Fishermen just want to fish, without the hassles of regulations" (Industry 4).



Den Helder, 24 maart 2015

In de kooi van zijn schip,
kijkt de schipper sip.
Een discardban om mee te stoeien,
anders gaat-ie in de boeien.
De wurggreep wordt elk jaar sterker.
Dat is niks voor deze werker.
Zoveel onzinnige regels steeds weer.
Maar het houdt op een keer,
de schipper ademt al niet meer!

Pieter Kraak (BRA 2)

Figure 10 The LO through the eyes of a fisherman (Visserijnieuws, 2015)

Support from the Dutch Second Chamber

The Dutch Second Chamber supported the LO at the time the EU had to make a decision on the reforms of the CFP (Government 2, Scientist 3). Hence, there are mixed feelings amongst the different parties in the Second Chamber about the LO (Government 2). The Minister of Agriculture promised a maximum extent of flexibility with the implementation of the LO. The fishing industry is in close relation with certain political parties in the Dutch Second Chamber and the Minister will immediately be reminded by the members of those parties if she would deviate from her promise (Industry 5, 6, NGO).

Societal pressure

NGOs have a strong opinion about the LO (Industry 6, Scientist 3). Taking and wasting resources from the ocean is not an issue that the broader public is feeling strongly about (Industry 6). The general public is not well informed about the landing obligation or the amount of discards in fisheries (Scientist 1, 2, 3, Government 4, 5). The NGOs have not been very visible in the LO discussions (Government 2). On one side of the coin support is felt for the need for a discard-reduction if people are being confronted with the topic (Government 1). On the other side, if a story is told that landing fish, regardless of their survivability chances or size is a consequence of the LO, this can be regarded as unnecessary (Industry 3, Industry 4). Framing the story in a certain way, defines the way of interpretation for the public. "I do not know if the industry would receive support, but at least they will be understood" (Industry 1). The public might support the goal of the LO, but might not support the means (Scientist 3). There is no interviewee who believes that there is much societal pressure to implement the LO.



5.4.5 Monitoring and enforcement

Monitoring and enforcement



Absent because:

The monitoring and enforcement plans for the LO still have to be made, or are currently being discussed. There is no clarity yet to the fishermen (nor for other parties) in which way the LO will be enforced. The interviewees do not expect the fishermen to comply with the LO from 2016 onwards. A small share of the fishermen is expected to comply with the LO if they can. This is inter alia dependent on which species get exempted or delayed during the implementation of the regulation. It is noteworthy to see that the LO leads to a European wide collaboration in the monitoring and enforcement system of fisheries.

Compliance

All interviewees expect that fishermen will either not be able, or not willing to comply with the LO. If fishermen **can** comply with the rules, depending on the exceptions of the regulation, a small percentage of them is expected to comply with the regulation. If, as a consequence of the LO, fishermen cannot exercise their fishing practices profitably any longer, they are not likely to comply. Especially not, when no enforcement measures are taken. All interviewees see the importance of control for compliance. Yet, a too strong emphasis on the repressive side of compliance would be an unfavourable policy instrument (Government 5).

Uncertainty

There is uncertainty about the exact way in which the landing obligation will be monitored and enforced. The government institutions do not know the plans for the demersal fisheries control from 2016 (Government 1, 2, 4, 5) let alone the fishermen who have to deal with the policy. Most of the interviewees do have ideas about control systems that may be put into use. Those control mechanisms which will be explained in the following paragraph.

Control mechanisms

Examples of control mechanisms that are thought of being implemented by different parties are; First, usage of airplanes to control discarding practices. Yet, it is hard to distinguish one species from another on such a distance (even with good lenses). Additionally, it is difficult to recognize the difference between certain sizes to guarantee that no undersized fish is being discarded. Second, Closed Circuit Television (CCTV) cameras have been suggested on the ships that monitor fishing practices. Yet, the same problem in the recognition of species and sizes is identified. Also, there is resistance against the use of CCTV by fishermen. Third, fishermen fear for a control system that is based on estimates and scientific information of demersal discards and thus fear a system that is not being based on actual control (Industry 1,3). At the moment, international collaboration between European control agencies is taking place. This is a rather new phenomenon in monitoring agencies collaboration (Government 5).



5.4.6 Nature conservation measures

Knowledge of complex ecosystems



Absent because:

It is important to think about sustainable fisheries management in a broader perspective instead of a focus on how to implement the LO as the right tool for fisheries management. Discard reduction might not be the most important element for fisheries management. However, the LO is based on a societal demand for a reduction of discards and not on a discussion about the best way to manage the fish stocks. A topic of general concern is the prevalence of economic interests in certain species over others. This priority defines which data is being collected. However, in terms of a broader ecosystem approach and understanding the functioning of an ecosystem, it is of importance to collect data of all species. This should be done in order to understand interactions within an ecosystem and the influence of external factors on an ecosystem. Additionally, the fishing industry in general does not feel the need for an LO for the management of stocks. The lack of salience for a change in terms of stock management seems to be impeding the urge for a change.

Condition of the fish stocks in the North Sea

In general the most important fish species for the Dutch fisheries - sole (Scientist 1, 3, NGO, Industry 1, 2,3,4,5,6, Government 1, 2,3,4,5) and plaice - are doing well (All interviewees). If one takes quantity as an indicator for the performance of the commercial fish stocks this could be concluded. However, the populations of fish⁷ are not doing equally well. Too much undersized fish is being caught which results in a lack of size variation in the fish stocks (Scientist 3). Moreover, there is a monoculture of flatfish species in the North Sea, whereas there used to be more species (Government 1, NGO, Scientist 3). There is not a lot of data available on non-commercial species. This specific information is not collected, because the species are not of economic interest (Scientist 1). A result of the relatively good performance of the fish stocks is the lack of urgency felt by the fisherman for a discard ban from a fisheries management perspective (Industry 6).

Improving the estimation of fish stocks by the LO?

Improving stock estimations under compliance and non-compliance

If the LO is being complied with, and no selectivity developments can be made, fishermen will land the fish that they would have previously been discarding. Data, of fish that previously would have been discarded, can be collected by means of random sampling ashore or by means of documentation in log books of fishermen themselves. If fishermen do not comply with the LO, there is a risk that fishermen will not document what they will be discarding (NGO). This would mean that the LO will have a reverse effect on the documentation and estimations of fish stocks. Estimates of fish stocks are usually being

⁷ The composition of a fish stock, e.g. size and age of the species.



done by means of monitoring. Samples of catches are taken to estimate the amounts of fish (Government 1).

Changing ways of monitoring and documenting

Documenting the discards that still may be discarded (e.g. unquoted species), will become a normality because of the LO (Government 5). The creation of a distorted image of reality could be a result of a change in monitoring samples of fish ashore instead of monitoring catches (Scientist 1). This system of sampling ashore could only work if the LO is being fully complied with. Scientists currently have a reliable source of data that will get lost because of the LO (Industry 2). Documentation of all catches might give a better overview of the stocks (Industry 4). Yet, there is distrust in which way the results of those catches are being used to confirm or discredit the effect of the LO on the stocks.

Uncertainty of the LO for the ecosystem

The implications of the LO on the ecosystem are unknown (Scientist 1). Ideas about the effects on the ecosystem vary. Subtracting resources and energy from the North Sea which are not necessary might be harmful in the long run (Industry 3). The way in which mixed fisheries should be managed is a discussion that only just started to develop. It is important to think about the way in which mixed fisheries could be best managed. Discussing the LO as the right policy instrument to manage mixed fisheries should come second (Scientist 1). Industry 4 does not expect the politicians to have the power nor the will to reverse the policy if it turns out that the LO has a negative impact on the fish stocks.



5.4 Conclusion

Based on the results of the analysis of success conditions, an answer to the following research question can be given.

Are the success conditions for the implementation of the landing obligation present or absent in the Netherlands?

First of all, certification proved to be of no value for the Dutch situation. Fishermen are not expected to comply with the LO by certifying discard free caught fish. Second, the condition “Trust is established across organisations” has not been tested. This deficiency will be explained in the Discussion in Chapter 6.

There are some enabling conditions present in the Netherlands:

- 1) The policy is expected to stimulate a search for more selective ways of fishing, an outcome that is supported by all stakeholders;
- 2) Time, which is necessary to adapt to the policy seems secured as there is a gradual and flexible period for implementation of the landing obligation in the Dutch fishing industry.
- 3) Enterprises are nested, meaning that responsibilities are clearly divided and regular meetings with stakeholders are taking place.

Yet, the following findings result from the analysis:

- 1) Stakeholders motivations are not well understood;
- 2) There is no shared problem;
- 3) Reasons for compliance are not in place;
- 4) There is no transparent and participatory governance;
- 5) The system is not considered legitimate and rational;
- 6) There is no support for the policy and the topic is not salient;
- 7) There is no monitoring and enforcement system in place;
- 8) There is no sufficient knowledge of complex ecosystems.

Three out of the eleven tested conditions that would improve the chance for a successful implementation are present in the Netherlands, meaning that the possibility to achieve a successful implementation is rather low.



6 Discussion

6.1 Introduction

In this Chapter, the validity of the results will be discussed. Also, the implications of the research for theory and future research recommendations will be given.

6.2 Validity

Internal validity

Internal validity relates to the covariation as a causal relationship (Calder, Phillips, & Tybout, 1982). The aim of this thesis has been to identify conditions that would be beneficial to the successful implementation of the LO in the Netherlands.

This thesis assumes that the more success conditions present in the Netherlands, the more likely it will be that a successful implementation of the landing obligation takes place. However, there is no one to one causal relation between the presence of a success condition and the success of the implementation. One to one causality relationships could only have been achieved if at least:

- The research excludes external circumstances in order to isolate the case;
- The research comprised sufficient cases in order to establish quantitative certainty (thereby statistically excluding external circumstances).

The following paragraph addresses these two points respectively. Due to the temporal nature of policy implementation processes and the time available for this study, a study of actual implementation under fully described conditions is impossible. Therefore, the research methodology in this study is not able to exclude all external circumstances (e.g. changing implementation dynamics) for situations in Norway and the Netherlands.

The discard ban policy has been implemented in just a few countries worldwide. It is very likely that local conditions differ among these countries. It is also very likely that the extent or degree to which discard policy bans are implemented, differ between them. Establishing a quantitative relationship with all these variables to elucidate success conditions would need analysis of many cases. Due to the lack of available cases, this is impossible. Therefore analysis of the likelihood for success has been found more useful for the specific case of the implementation of the landing obligation in the Netherlands.



External validity

External validity relates to whether the causal relationship identified can be generalised to other similar settings or persons. This implies that results of the research may be generalised to theory or other cases (Calder et al., 1982). The identification of success conditions in literature leads to knowledge on predicting the likelihood of successful implementation in The Netherlands. The likelihood for a successful implementation (based on the conditions identified from literature and practice) is high, if the LO would be implemented in a context where all conditions are present. By studying the situation in Norway, these conditions have been defined more sharply, thus increasing the likelihood for success under these conditions. This makes the identified conditions generalisable to a wider context. However, the Norwegian discard ban cannot be seen as a duplicable explanation to the European challenges as there are fundamental differences between the Norwegian discard ban and the European landing obligation (e.g. type of fisheries, institutional design and implementation period). All this considered, the Norwegian case can be seen as a learning case.

The case study performed in the Netherlands is specific and subject to change. Therefore, replication is difficult. The research took place at the moment of the preparation of the policy implementation. Consequently, the field that has been studied is expected to be subject to change in the coming years and an exact similar study cannot be repeated. Also, it will be impossible to find the same interviewees due to the anonymity requested. Unfortunately, for these reasons, the success of the implementation as a function of the success conditions at this stage cannot be tested. The aim of this research, however, is to provide an overview of the situation in the Netherlands and discover the areas of improvement for the implementation.

6.3 Theoretical implications of the research

The identification of factors of the Norwegian discard ban has confirmed many of the conditions as identified in literature. Therefore, this part of the thesis can be seen as a reaffirmation of already existent ideas from theory on conditions leading to successful implementation of policies and fisheries management. This thesis has added value by combining the two bodies of literature (policy implementation and fisheries management). By doing so, both literature fields can be read in another context. The implementation of other policies within the CFP can benefit from scientific knowledge on how to implement policies in a fisheries context.

A strength of the broad use of different literature is that it creates a new interface between fisheries management literature and policy implementation literature. The LO is on the interface between both bodies of literature and thus, not one of the branches of literature should be viewed in isolation. The thesis provided a newly developed framework for the identification of success conditions in the specific situation of the implementation of the LO. Many of the conditions can be generalised to other cases of policy implementation in fisheries policies and especially for other the other EU MS that are currently implementing the LO as well.



The broad literature use may have resulted in a lack of in-depth exploration of the different topics of literature. However, this does not outweigh the advantage of the novel approach with a broad range of literature. Therefore, it is recommended to continue this research and go more into depth into specific branches of literature in order to increase the knowledge about implementation of fisheries policies. This can lead to more improvement possibilities for the implementation process. Also more implementation cases of different fisheries policies should be researched in order to find success conditions.

6.4 Suggestions for future research

Differences in importance of success conditions

The conditions that have been identified as important to a successful implementation do not differ in so called 'weight' in order to predict the likelihood for success. If 10 out of the 11 tested conditions were found to be present, but monitoring and enforcement was found absent, the current method would result in a conclusion that the policy implementation is likely to succeed. However, monitoring and enforcement might be a critical factor in the implementation.

No weight has been given to the differences in importance of different success conditions. This has partly been done with the transposition of the literature to practice (test of the Norwegian practice). However, the remaining conditions after this test, have not separately been distinguished into different percentages for importance. Research on the distinct importance of each of the conditions should be done in order to advance the policy implementation.

Replicate the research in different Member States

Other researchers are also kindly requested to carry out a similar research in other MS that implement the LO. The framework employed to test the presence of conditions, is not subject to adverse changes and can therefore be seen as a robust instrument. In this way, patterns in implementation deficiencies and successes can be identified that are specific to the LO implementation. This will further enhance the knowledge about implementation of fisheries policies.

Interaction between Science and Politics

A fascinating encounter during the research is that political processes and societal demands tend to phase out and ignore environmental consequences. This is based on the introduction of the landing obligation as a means to end the wasteful practice of discarding. This wish for a policy to end discarding has been driven by a societal wish, that in turn moved the political debate. The consequences of such a policy -the effects on the fish stocks or ecosystems- seem to come second.

Therefore, it is interesting to discover what the role of science is, and what the role of science can be in a topic that is controversial. Are scientists expected to stay away from the discussion about the desirability of a policy after it has been approved, are they only expected to deliver information that has been demanded for, are they allowed to make up (and secondly, who should pay for) their own research agenda away from the wishes of the client? How objective and neutral is science when the research is financed by those demanding the information? I would like to refer here to the question to what extent the landing obligation will be beneficial for the ecosystem.



Therefore, a recommendation is that the policy should be evaluated and the changes in the ecosystems should be observed. This argument is in line with Van Densen & van Overzee (2008) who advocate for an eco-system based approach to evaluate fisheries management. Even though it is difficult to carry out such a research because of external factors that influence the eco-system other than the policy. If it turns out that the policy has a positive effect on the eco-systems, it can be used as a tool to create sympathy for the policy. More people will be able to relate to a policy that is beneficial for the environment. This is especially relevant for the group of stakeholders who at this moment either do not know what the policy is good for, or who do not agree with the current aim 'end the wasteful practice of discarding' (European Commission, 2014a, European Commission, 2014b). However, the question remains; optimisation of the implementation to what level and optimisation for whom? If it turns out that the landing obligation has a negative impact on the environment, the implementation should be reversed.

It is certain that measures need to be taken to protect the seas from being over exploited, but it is not certain that the landing obligation will contribute to a more sustainable ecosystem in the North Sea, nor to better management of the fish stocks. How should this uncertainty be dealt with? Is trial and error the way forward with the CFP? If the landing obligation will not meet the goals it envisioned, will it be defeated and replaced by another policy? It is unfair to say that the CFP works in this simplistic way. However, there is a necessity for changes to overcome this problem. Research is needed in order to contribute to the improvements for success of the CFP.

Limitation to the Dutch case study

The following condition for a successful implementation of the DB have been confirmed to be important by both literature as well as by the interviewees in Norway:

- Established trust across the organisations

However, the questions developed to test this condition for the interviews in the Netherlands were inaccurate and therefore a valid answer to the question whether the condition was present or absent could not be provided for. This is a failure in my interview method. Another researcher who would carry out a similar research in a different MS should take this condition into account and add it to his / her framework. Questions that could be asked should relate to the way in which actors from different organisations and institutions experience the collaboration and to what extent they trust the other actors.



7 Conclusion

The oceans are under pressure due to both human activities such as fisheries, and nature induced events. The Member States of the European Union aim to contribute to the sustainable management of fisheries in those oceans by managing the seas around Europe collectively. The Common Fisheries Policy is the central policy aimed at the management of fisheries. The landing obligation for demersal fisheries is part of the Common Fisheries Policy and will be implemented gradually as of 2016 until 2019. The policy aims at ending the discarding of fish. If successful, the policy will lead to more selective ways of fishing. In this way, no unnecessary fish mortality will take place.

The policy is undesired by some stakeholders. The way in which the policy will be implemented is subject to discussion and negotiation. This study explored the conditions that could contribute to the successful implementation of the landing obligation in the Netherlands. First, literature from policy implementation and fisheries management has been investigated. The conditions that were found in this investigation are likely to advance policy implementation in a fisheries context. The conditions have been placed in the following categories: Institutional design, communication, policy design, common goals, participation and legitimacy, monitoring and enforcement, rights, trust and nature conversation measures.

Second, a similar policy to the landing obligation has been studied. This has been done in order to refine the conditions and come to specific conditions that merge the policy implementation in a fisheries context with the specifics of a discards ban. The case under study is the discard ban in Norway which has been in place for over twenty-five years. A workshop on the discard ban in Norway and interviews with professionals from the industry, scientists, a policy officer and an expert have led to a refined list of conditions. If the conditions of this list are found to be present in the Netherlands, a successful implementation of the landing obligation is expected. The research sought to answer the following question:

- **To what degree are conditions contributing to a successful implementation of the EU landing obligation present in the Netherlands?**

The refined conditions have been tested on their presence in the Netherlands. An overview of the conditions that may contribute to the successful implementation of the LO, and whether they were found to be present or absent will follow.

Present conditions for success

The institutions responsible for the implementation are clearly defined, there is a platform in which stakeholders discuss the implementation and the discussions taking place are considered open. A mutual interest (beneficial for cooperation) - selective fishing - of all stakeholders has been identified. Selective fishing is beneficial for fishermen due to the improved efficiency and for the government representatives as it reaches the goal of the landing obligation. Selective fishing is a solution that reduces discarding. A flexible implementation trajectory of the landing obligation is present in the



Netherlands. Fishermen will have time to adapt to the landing obligation due to a gradual implementation. This means that not all species will fall under the landing obligation at once. In addition exceptions for certain species may be provided, if scientific proof justifies those exceptions and if Member States can agree on the conditions for these exceptions.

Absent conditions for success

However, the majority of conditions that should be in place to advance the implementation are absent. A transparent decision-making procedure is not present. Stakeholders discuss and negotiate about their wishes in the implementation trajectory of the landing obligation in a national platform. Yet, those wishes are subject to discussion on a regional level for the Member States bordering the North-Sea (Scheveningen Group) as well. Government representatives of the Ministry of Economic Affairs have to renegotiate the national wishes and at the same time ensure that the policy goals of the landing obligation will be met. This international platform is not considered transparent. Although, the Ministry of Economic Affairs is considered transparent in their information provision towards the stakeholders on the national level.

Fishermen do not see the need for the introduction of the landing obligation. The goals are either not understood or not shared. This does not enhance their likelihood for compliance, as there is no value underlying the policy for those fishermen. Additionally, it is not expected that an enforcement system will be in place that would stimulate compliance. Furthermore, the practice of discarding is not known by the general public. Therefore the saliency to implement the policy is low. This lack of external pressure is not advancing the implementation of the landing obligation. Moreover, it is uncertain what the effect of the policy is on the management of fish stocks. There is a wish for a broader discussion about the way in which to manage fisheries, rather than solely focus on how to implement the landing obligation. Due to the lack of most of the conditions that contribute to a successful implementation, the chance for a successful implementation of the landing obligation in the Netherlands is low.



8 Recommendations

8.1 Introduction

This Chapter will provide an overview of the recommendations. These recommendations are based on the absence of certain conditions in the Netherlands. Additionally, some recommendations are based on solutions that have been identified by stakeholders as well as on own observations. Recommendations will be given to both the public (government) and the private sector (industry).

8.2 Recommendations for public and private institutions

Several recommendations will be made in order to advance the implementation, investigate other solutions, or open up the debate.

- 1) Encourage discussions on the reasons for the landing obligation instead of focusing only on how to implement the landing obligation
- 2) Improve monitoring and enforcement
- 3) Discuss the appropriateness of the policy
- 4) Keep science and monitoring separated
- 5) Improve the transparency of the Scheveningen Group
- 6) The fish value chain
- 7) Raising awareness for discard free fishing in order to increase public support
- 8) Landing obligation or selective fishing policy?

1 Encourage discussions on the reasons for the landing obligation instead of focusing only on how to implement the landing obligation – public

As long as the common goal of the policy is not understood or shared by the stakeholders, it will remain very hard to reach an acceptable and feasible outcome for all stakeholders. Therefore, my suggestion is to organise sessions with all relevant stakeholders to make clear what the goals of the policy are, for whom, and which benefits can be reached by complying with the policy. This step is essential because resistance will keep slowing down the search for solutions. A mutual interest has been identified by all stakeholders, which is: fishing more selectively. This would reduce the time of processing the fish on board, would reduce the labour intensiveness and would also benefit the government and NGOs in terms of reaching the policy goals.

Recommendation:

- 1) Discussions on the goal(s) of the LO, instead of unilateral discussion on ways to implement the landing obligation, could enhance (if common goals are found) support for the policy.



2 Monitoring and enforcement – public

Fishermen are not expected to comply voluntarily with the policy. Even though monitoring and enforcement authorities cannot solely guarantee compliance, it is a critical factor for the success of the compliance with the policy. However, all stakeholders see that monitoring and enforcement is rather behind in the planning of implementation of the landing obligation for demersal species in 2016. It is a complex policy to monitor, yet this is no valid reason to ignore the importance of a good monitoring system and thus the weight it should have in the efforts of implementation. There are different government bodies responsible for the policy making, the execution of the policy and the monitoring of the policy. It is important that those collaborate in the identification of strategies for enforcement.

Recommendation

- 2) All parties responsible for the implementation need to invest time in developing a monitoring and enforcement strategy.

3 Discuss the appropriateness of the policy – public

The role of science in the policy implementation is limited. Information, demanded for by the government, is provided. However, not all scientists consider the LO as the most appropriate instrument in order to end discarding. Also, the extent to which the policy is necessary for the management of fish stocks and fisheries in general is questionable. Discussions need to take place with scientists and stakeholders on the appropriateness of the policy for fisheries management instead of discussions solely focused on the implementation.

Recommendation

- 3) Discuss appropriateness of the policy with scientists and stakeholders.

4 Keep science and monitoring separated – public

It is of great importance to keep monitoring for scientific purposes and monitoring for enforcement separated. Trust of fishermen in scientists is necessary for a credible data collection of fish. If fishermen may get sanctioned by the use of data that has been used for scientific purposes, it is likely that the fishermen will not cooperate with research any longer.

Recommendation

- 4) Guarantee clear separation of data collection for scientific purposes and data collection for enforcement.

5 Increase transparency of the Scheveningen Group – public

The transparency of the Scheveningen Group needs to be increased. Its' influential role, as a relatively new platform at the regional level, following the regionalisation of the CFP, combined with a lack of transparency (as stated by the national stakeholders in this study) undermines its legitimacy.



Recommendation

- 5) Publish documents and notes of meetings held by the Scheveningen Group and open up meetings for stakeholders to join as observers.

6 The fish value chain – government & industry

There is hardly any attention for the role of the fish value chain in the discussions on the landing obligation. Identifying markets for fish that is currently seen as having little value on the market can be beneficial. In the North Sea, the majority of discards comprise of dab and plaice. Dab had a discard rate of 91% between 2010 and 2012. The reason for the higher amount of discards on dab can be attributed the low market value of dab.

Research on the market value of dab has been done. The result of the research is that it is difficult to find a market for dab (Nederlandse Vissersbond, 2013; Visserijnieuws, 2013). However considering the fact that dab cannot easily be avoided in demersal fisheries and thus will be landed, perhaps the changed situation of the LO will change the perspective. Creating a market for a fish that cannot be avoided to be caught is not the sole responsibility of the fishermen but of society at large and of the value chain in particular.

There is no or little demand from consumers for the species that comprise the by-catch in fisheries. However, this demand can be stimulated by promoting the fish. If by-catch would not be considered as by-catch in the first place, there would not have been a problem of discarding. Therefore, it is highly recommended to aim at changing the value chain of by-catch species.

Recommendation:

- 6) Promote the eating of dab fish in the Netherlands
- 6) Identify markets abroad for dab export

7 Raising awareness for discard free fishing in order to increase public support– government & industry

The previous recommendation links to this one. The policy has broad implications on the way the discourse on fishery discards should be changed. This might be a very slow and gradual change in people's mind sets but it can be the start of a wider appreciation for sustainable use of natural resources and the idea of the privilege of extracting resources from a common pool. Changing fisheries into a waste-free practice can change or shape the public opinion about fisheries in a positive way. Also, increasing the value of by-catch species by changing the perspective of the public can influence fisheries in a positive way. The appreciation of fisheries can result in more valued fish.

Recommendation:

- 7) Raising awareness of the public about fisheries in order to create value.
- 7) Raising awareness could increase the pressure for discard-free fishing or increase the appreciation of by-catch species.



8 Landing obligation or selective fishing? – government

Furthermore, the name of the policy ‘landing obligation’ is actually contrary to what the policy aims to achieve. This name does not correspond to the goals that are envisioned. The goal of the policy is not to land all species that would otherwise have been discarded, but avoid those species from being caught in the first place. Therefore, it would be better to change the name of the landing obligation into the selective fishing policy.

Recommendation:

- 8) Change the name of the policy into ‘selective fishing policy’.



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Appendices

Appendix 1 Interview questions Norway

Success

- Do you think the discard ban is a success?
- What was the aim of the discard ban in Norway?
(Reducing the discards/protecting juveniles..?/ economic reasons/sustainability reasons..different)
- What is success according to you?
- What is successful with regard to the ban, and what is not/needs improvement?
- What do you think contributed most to the 'success'/'failure' aspects of the ban?
- (Where) do you see possibilities for improvement of the discard ban?

Institutional design

- Was there time for the fishermen to adapt to the new regulations? (e.g. immediate sanctions or first a period of transition)
- Was there a clear structure for implementation?
- Where multiple policy instruments employed in order to stop discarding?
- Did the implementation allow for flexibility?
- How was the cooperation between the different authorities?
- Do you see the development of a similar regulation for the EU as a good development? Why (not)?

Communication

- What were the goals of the discard ban? Were they clear for all stakeholders?
- Were policy makers aware of the real-world situation the fishermen were working in? Did they know what fishermen thought of the policy?

Policy Design

- Was the policy aimed at a drastic change? If so, how?
- Was it clear what the effects would be from the implementation of the policy? Was this clear to all stakeholders?
- What do you think of the difference between a policy on a **minimum landing size** in comparison to the **minimum mesh sizes**?
 - Minimum landing size (voorkomen dat men illegaal gaat vissen met kleinere maaswijdten en dus voorkomen dat de vissers de vis op de legale markt kwijt kunnen)



- Minimum mesh-size (kun je alleen controleren op zee. Vissers kunnen makkelijk zeggen dat ze kleine vis hebben gevangen ondanks grotere mazen).

Common Goals

- Do you think all stakeholders (fishermen, government, and scientists) agreed and had the same interest in the implementation of the ban? If not – how did the interests of the stakeholders deviate, and what were their differing aims?
- Which other goals except for the ban on discards could be identified?

Participation and legitimacy

- How would you regard the interrelationships between the different stakeholders in the fisheries in Norway (industry, scientists, government, NGOs)?
- Would you say that there is a culture of rule-compliance amongst the fishermen?
- Do you regard the fisheries Ministry as the right party to make decisions over fishing issues? If not: who/how should decisions be made?
- Was there public support for the policy? Strong interest groups pressing for implementation of the ban?
- In what way has the policy been implemented: was there participation in the formulation of policy? If so, in what way were the stakeholders consulted? How were the different stakeholders included in the negotiations over the policy formulation? Was there any cooperation? What was the influence of their opinions?
- Were the decision-making procedures transparent?

Monitoring and enforcement

- In what way did the monitoring agency/government work together during the implementation of the ban?
- How did the monitoring agency check on the discards? Via logbook/landings/by other means?
- In what way did control of the discard ban take place? Were additional monitoring vessels/observers deployed?
- Did fishermen change their behaviour? Did they comply? And if so; for what reason? What was the benefit for the fishermen, other than the avoidance of sanctions?

Rights

- Were fishermen able to set up their own organisations representing their interests?
- In what way was quota being allocated to fishermen?

Trust

- How was the cooperation between the different stakeholders? Was their distrust?



Nature conservation measures

- In what way has the precautionary approach been applied in Norway?
- What were the consequences of the ban for the data collection as well as the ecosystems?

Other questions:

Development of new techniques

- Who were the main drivers for the development of more selective fishing techniques?
- General; For which fish species were those selective fishing techniques developed (only cod/haddock?). Do they work well? What was the % of discards before and after the technique?

Sustainability

- What is in your opinion sustainable fisheries management?
- Would you consider the discard ban a sustainable policy instrument?

Last questions

- Why was the discard ban a success according to you?
- Where would you start with the implementation of a discard ban, if the fishing sector is not willing to change their ways of fishing/change techniques/reduce their by-catch?



Appendix 2 Results of the interviews in Norway

8

Institutional design

Success condition	Description	
1. 1 Small number of actors involved in policy formulation (Pressman and Wildavsky 1973 in Matland, 1995; Dimitrikopoulos & Richardson, 2001)	Minimise the number of actors during the formulation phase in order to reduce discrepancies of the policy formulation	
2. Implementers are sympathetic with goals of the policy (Dimitrakopoulos & Richardson, 2001; Goggin et al., 1990; Mazmanian & Sabatier, 1983; Van Meter & Van Horn, 1975)	Place implementation responsibility in an agency sympathetic with the policy's goals. Complete understanding of, and agreement on objectives throughout the implementation process	NGO
3. Implementation design and responsibilities are clear (Hogwood & Gunn, 1993; J. Pressman & Wildavsky, 1973 in Puzl & Treib, 2006)	There needs to be a system of clear responsibilities and hierarchical control to supervise the actions of implementers.	Scientist 1
4. The implementation process is well structured (Mazmanian & Sabatier, 1983 in Puzl & Treib, 2006)	The implementation process is structured adequately in a fixed sequence. Adequate program design and clever structuration of the implementation process	
	Note: Hard to achieve control over the policy implementation process (unfavorable conditions can cause implementation failure)	
5. Policy is well transposed (Matland, 1995; Dimitrikopoulos & Richardson, 2001)	The success of a program depends largely on the translation from central policy into local implementation.	
6. The implementation process is flexible (Dennis J. Palumbo et al., 1984 in Matland, 1995)	"Flexible strategy that allows for adaption to local difficulties and contextual factors" (Dennis J. Palumbo et al., 1984 in Matland, 1995)	Scientist 1, Scientist 2, Industry 1, Industry 2, NGO, Policy Officer, Expert, Workshop
7. Resources necessary for implementation are available (Dimitrakopoulos & Richardson, 2001; Hogwood & Gunn, 1993; Matland, 1995)	Implementing agencies should have sufficient resources at their disposal. Those resources need the right combination at the right time in order to secure a successful implementation. Effort, knowledge, time, money, human resources, penalties and incentives.	NGO
8. Enterprises are nested (Ostrom et al., 1994)	"Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises".	Scientist 1, Scientist 2, NGO, Industry 1, Industry 2, Policy

⁸ The green colour indicates that a condition has been selected for the final list of conditions.



The implementation of the EU landing obligation in the Netherlands

9. Diversity of policy instruments to reach a certain outcome (Kauneckis & Imperial, 2007; Hilborn, 2007; Salomon, 2009)	“Cooperation and the development of new institutional arrangements are more likely when a wide range of policy instruments are used to manage complex environmental commons” (Kauneckis & Imperial, 2007). Sustainability objectives should be addressed through different policies (Hilborn, 2007).	Officer, Expert Scientist 1, Workshop
10. Level playing field (Dimitrikapoulis & Richardson 2001)	A level playing field reduces the possibility for actors to free ride.	NGO, Workshop

Communication

Success condition	Description	
11. Goals are clear and consistent (Hogwood & Gunn, 1993; Matland, 1995; Mazmanian & Sabatier, 1983; Van Meter & Van Horn, 1975; Dimitrikapoulos & Richardson, 2001)	Make policy goals clear and consistent so that they are not multi interpretable and have a clear function. The relation between the cause and effect needs to be clear.	Scientist 2, Policy officer
12. Stakeholders motivations are well understood (Berman, 1978; Berman & others, 1980; Hjern, 1982; Hjern & Hull, 1982; Hull & Hjern, 1987; Lipsky, 1978 in Matland, 1995; Dimitrikapoulis & Richardson, 2001)	“Understanding implementation processes can be gained by looking at a policy from the view of the target population and the service deliverers” Goals, strategies, activities, and contacts of the actor need to be understood.	NGO, Expert, Workshop
13. Good communication & Co-ordination (Hogwood & Gunn, 1993)	There must be perfect communication & co-ordination between participants (multi-level governance on both EU as well as on national level)	

Policy design

Success condition	Description	
14. Policy should have a minimal change to the status quo (Mazmanian & Sabatier, 1983; Van Meter & Van Horn, 1975 in Matland, 1995; Dimitrikapoulos & Richardson 2001)	Limit the extent of change necessary for successful implementation, and limit detrimental changes in socioeconomic framework conditions.	
15. Low level of uncertainty (Dimitrikapoulis & Richardson, 2001)	The uncertainty that is a result of a new formulated policy is a diminishing factor for the effectiveness of the policy implementation	
16. Efficient policy (Hanna, 1995)	Benefits of the policy exceed the costs of implementing the policy	Expert

Common goals

Success condition	Description	
17. Shared problem (Kauneckis & Imperial, 2007; Matland, 1995; Van Meter & van Horn, 1975 in Pulzl & Treib, 2006)	Institutional arrangements for managing complex environmental commons are more likely to emerge when those with competing interests develop a shared definition of underlying problems. In this way a shared problem can be solved.	NGO, Scientist 1, Scientist 2, Policy Officer, Expert, Workshop
18. Mutual interests	“When policy actors view policy choices in terms of positive sum games, cooperation is more likely to result in development of new institutional arrangements for managing complex environmental	NGO, Policy Officer, Expert
19. (Kauneckis & Imperial, 2007)		



commons". Conversely, cooperation is less likely to occur when policy choices are viewed as zero sum games.

Participation and legitimacy

	Success condition	Description	
20	Negotiated policy goals (Dimitrakopoulos & Richardson, 2001)	Finding consensus ensures that more stakeholders and MS get involved in the policy formulation. At the same time, legitimacy for the policy is being created.	Industry 1, Scientist 2
21	Collective choice arrangements (Ostrom et al., 1994)	"Most individuals affected by the operational rules can participate in modifying the operational rules".	Industry 1, Scientist 2
22	Balanced power between stakeholders (Kauneckis & Imperial, 2007)	Institutional arrangements for managing complex environmental commons are more likely to emerge when there is a balance of power among competing interests.	
23	Policy leads to Equity (Hanna, 1995)	Equal distribution of the burdens and benefits of the policy. 1. Representation 2. Process clarity 3. Homogeneous expectations 4. Distributive effects (Hilborn, 2007)	
24	Transparent and participatory governance (Hilborn 2007; Salomon, 2009)	Key characteristics for governance problems are; the lack of governance, the impossibility to reach consensus over a subject amongst different stakeholders, bribery problems making the system corrupt. Key characteristics for good governance: transparency for the participants, appropriate scale of decision-making for the fisheries to be managed (space for stakeholders to participate in the process). Stakeholders should have access to the full process of management	NGO, Scientist 1, Scientist 2, Industry 1, Expert, Policy Officer
25	There is support for the policy and the topic is salient(Dimitrakopoulos & Richardson, 2001; Mazmanian & Sabatier, 1983 in Matland, 1995; Dennis James Palumbo & Calista, 1990 in Puzl & Treib, 2006)	Public support, support from upper-level political leaders, resources and support from relevant constituency groups, the commitment of implementing officials, executive and legislative sovereign are supportive. Level of conflict and level of attention of proponents during the policy formulation process. If there is a low priority of the policy of the interest groups it is not likely that compliance will be high.	NGO, Scientist 2, Industry 1, Expert, Policy Officer

Monitoring and enforcement

	Success condition	Description	
26	Monitoring and Enforcement system are in place (Ostrom et al., 1994; Dimitrakopoulos & Richardson, 2001; Hilborn, 2007; Salomon, 2009)	"Monitors, who actively audit CPR conditions and appropriator behaviour, are accountable to the appropriators or are the appropriators". Monitoring and enforcing the fishing practices is necessary for compliance.	Scientist 1, Policy Officer, Workshop
27	Sanctions are graduated (Ostrom et al., 1994)	"Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these	Expert, Policy Officer



appropriators, or by both”.

Rights			
	Success condition	Description	
28	Clearly defined boundaries (Ostrom et al., 1994)	“Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must boundaries of the CPR itself”.	Scientist 1, Expert
29	Rights to organise are recognised (Ostrom et al., 1994)	“The rights of appropriators to devise their own institutions are not challenged by external governmental authorities”.	
Trust			
	Success condition	Description	
30	Trust is established across organisations (Kauneckis & Imperial, 2007)	Cooperation and the development of new institutional arrangements for managing complex environmental commons is more likely to occur when relationships of trust can be established among individuals in inter organisational networks.	NGO, Scientist 2, Policy Officer, Workshop
Nature conservation measures			
	Success condition	Description	
31	Precautionary approach is leading⁹ (Hilborn 2007, Salomon 2009)	In cases of uncertainty on the stocks, the precautionary principle should be leading.	Workshop
32	Knowledge of complex ecosystems (Hilborn, 2007)	As the functioning of ecosystems are complex, it is necessary to understand the interactions within the ecosystems well in order to understand the impact of management. Data-collection in order to provide information about the resource is vital.	NGO, Scientist 2, Expert, Workshop

⁹ “The **concept of precautionary action** aims generally at improving conservation of the environment and the resources by reducing the risk of inadvertently damaging them. More specifically, it aims at helping decision-makers and regulators to take a safeguarding decision, when the scientific work is inconclusive but a course of action has to be chosen. In addition, it intends to promote a more equitable balance between the short-term considerations (which led to the present environmental degradation and overfishing) and long-term considerations such as the need to conserve resources for future generations. It aims at promoting inter-generational equity by reducing the cost of our decisions for future generations and by counteracting the effects of current high economic discount rates which provide a strong incentive to overfish, maximizing the discounted net benefits from a stock and, *de facto*, giving preference to present consumption over future consumption. (Garcia, 2015)”



Appendix 3 Interview Questions the Netherlands

Refined list of success conditions ¹⁰	Interview question
Shared problem	<ul style="list-style-type: none"> • Wat is het doel van de aanlandplicht? • Wat is je mening over dat doel • Is de aanlandplicht het juiste middel om dat doel te bereiken? Zo nee: waarom niet? Wat zou dan wel een juist middel zijn? Is er een middel mogelijk voor het doel? Zo ja: Waarom
Mutual interests	<ul style="list-style-type: none"> • Welke voordelen zijn er te behalen door het invoeren van de aanlandplicht? • Welke nadelen zijn er gemoeid met de implementatie van de aanlandplicht?
System is considered legitimate and rational	<ul style="list-style-type: none"> • Zijn jullie betrokken bij de beleidsvorming over de aanlandplicht? Zo ja: Hoe? Zo nee: Had je graag betrokken willen zijn bij de beleidsvorming over de aanlandplicht en op welke manier? • Voel je je verantwoordelijk om mee te denken?
Enterprises are nested	<ul style="list-style-type: none"> • Hoe lang werken jullie (wie) al samen – op welke vlakken hebben jullie elkaar het meeste nodig in de samenwerking? • Welke initiatieven of samenwerkingsverbanden zijn er gekomen door de aanlandplicht?
Transparent and participatory governance	<ul style="list-style-type: none"> • Op welk moment denk je dat beslissingen definitief genomen worden over de details van de invoering van de aanlandplicht * Wat is het meest belangrijke/kritieke punt? Bijv. in gezamenlijk overleg sectorvertegenwoordigers met ministerie, in de Scheveningen groep, in de High level groep, op DG-niveau, in de Europese commissie of het EP? • Hoe schat je de invloed (je eigen/of die van je organisatie) in op dit proces? • Heb je duidelijk zicht op wat er gebeurt in het proces van besluitvorming? * Ervaar je het als een open proces
There is support for the policy and the topic is salient	<p>Voor de overheidsinstanties/organisaties</p> <ul style="list-style-type: none"> • Voel je ondersteuning vanuit je eigen 'instantie' voor het beleid? <p>Voor allen</p> <ul style="list-style-type: none"> • Voel je ondersteuning vanuit de Kamer voor het beleid?

¹⁰ Note: The interview questions are the indicators for the presence of that particular condition in the Netherlands.



	<ul style="list-style-type: none"> • Voel je steun vanuit de maatschappij voor het beleid? • Voel je maatschappelijke druk om de aanlandplicht in te voeren Zo ja: welke doel zit er dan achter die druk? • Voel je druk vanuit de EU voor de invoering van het beleid? <p>Vissers</p> <ul style="list-style-type: none"> • Voel je ondersteuning vanuit de andere vissers voor het beleid
<p>Reasons for compliance are in place</p>	<p>Vissers</p> <ul style="list-style-type: none"> • Hoe denk je dat je collega's over de aanlandplicht denken? <p>Allen</p> <ul style="list-style-type: none"> • Denk je dat vissers elkaar erop aanspreken wanneer er nog gediscard wordt door collega's? Zo ja, waarom? Zo nee: waarom niet? • Wat denk je dat er nodig is om vissers over te halen om aan de aanlandplicht te voldoen?
<p>The implementation process is flexible</p>	<ul style="list-style-type: none"> • Hoeveel tijd zouden de vissers nodig hebben om aan de aanlandplicht te kunnen voldoen? En waarom? • Is het voor jullie (Vissers) duidelijk wat er gaat gebeuren met de invoering van de aanlandplicht in 2016? • Welke tijd en ruimte is er nodig voor vissers om aan de aanlandplicht te kunnen voldoen? • Denk je dat er ruimte is voor aanpassingen in de regelgeving, nadat de aanlandplicht is geïmplementeerd?
<p>Knowledge of complex ecosystems</p>	<ul style="list-style-type: none"> • Hoe denk je dat het met de visbestanden is gesteld in de Noordzee? Specifiek: Tong, schol. • Denk je dat de implementatie van de aanlandplicht bij zal dragen tot een betere bestandschatting? Zo ja, waarom? Zo nee, waarom?
<p>Monitoring and enforcement system is in place</p>	<ul style="list-style-type: none"> • Wat zijn de plannen op het moment voor het controleren op de naleving van de aanlandplicht? • Verwacht je dat vissers zich zullen houden aan de aanlandplicht vanaf 1 januari 2016? Zo ja: Waarom? Zo nee: Waarom niet? Onder welke omstandigheden verwacht je dat vissers zich wel houden aan de aanlandplicht? • Welke rol heeft controle en handhaving voor de invoering van de aanlandplicht? • Wat gebeurt er wanneer een visser zich niet houdt aan de regels van de aanlandplicht? Wat zijn de consequenties en zijn er straffen?



<p>Trust is established across organisations¹¹</p>	<ul style="list-style-type: none"> • Wat zou volgens jou een goede manier van invoering van het beleid zijn? * In fasen, alles in een keer, helemaal niet, vissers die zelf de regels bepalen, andere instituties • Hoe zie je je eigen rol in het verbeteren van de implementatie? *Zowel de invloed die je kunt uitoefenen als kansen die je ziet om te benutten? • Is het duidelijk wat er gaat gebeuren bij de invoering van de aanlandplicht in 2016? Zo nee: welke onduidelijkheden zie je?
<p>Stakeholders motivations are well understood</p>	<ul style="list-style-type: none"> • Wie denk je dat het meest uiteenlopende idee heeft in vergelijking met jouw idee over hoe je op een goede manier de aanlandplicht implementeert? • Denk je dat er een vlak is met betrekking tot het verschil waar je nader tot de andere organisatie of persoon kan komen?
<p>Certification</p>	<ul style="list-style-type: none"> • Zie je het certificeren van vis als een mogelijkheid om vissers te stimuleren zich aan de aanlandplicht te houden? • Zie je in vergelijking tot vijf jaar geleden een opkomende of veranderende vraag vanuit de Nederlandse consument voor duurzaam gevangen vis?

¹¹ This condition has been removed from the analysis as the questions that have been asked were inaccurate.