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THE EUROPEAN UNION'S COMMON FISHERIES POLICY - HISTORICAL CHALLENGES AND FUTURE OUTLOOK

by

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Abstract

The *"Common Fisheries Policy (CFP) is the European Union's basic framework for managing the fisheries in the waters of Member states. The CFP was drawn up in 1970 in order to institutionalise co- operation between the EU member states over fisheries management; formal principles were established in 1983 based on Articles 38 and 39 of the Treaty of Rome, and were later reinforced in Article 3 of the (Maastricht) Treaty on European Union."*[1]

SUMMARY

My thesis aims to create an overview of the history of the Common Fisheries Policy (CFP) in the European Union (EU), pointing out important challenges with regards to accession of new member states, an oversized fishing fleet and lack of fish resources and the essence of the current reform, in addition to a short comparison with the Norwegian fisheries management.

Finally the thesis concludes that the CFP has been able to introduce instruments in coherence with the ultimate objectives, at the same time as they fail to fulfill the objectives and to introduce the necessary elements of an ecosystem approach to fisheries management. Therefore it remains to see whether the proposition made by the Commission will be completed in the European Parliament and change the future outlook fot the European fisheries.

PREFACE

This master thesis is written as part of the master studies at *Norges Handelshøyskole*, and the topic is related to my main profile in Energy, Natural Resources and the Environment. Hence, the Common Fisheries Policy of the European Union was chosen after contact with Geir Ervik, senior advisor at the Ministry of Fisheries and Marine Affairs in Norway. Therefore I would like to thank him for making me aware of the EU's CFP and the current reform, in addition to provide advise on relevant sources of information. Furthermore, I would like to thank Jan Frederik Danielsen, fisheries advisor in the EU delegation from Norway, who helped me with information regarding the current reform of the CFP.

The work process was challenging and required structure in order to effectively analyze all the available data on the topic. In addition, writing my thesis in Barcelona may have limited the contact with my thesis advisor and the ability to use more sophisticated analytical methods. However, I do not think that this would have changed the results nor affected the contact with my thesis advisor.

Finally, I would like to thank my thesis advisor, Rögnvaldur Hannesson, for always responding quickly regarding questions related to information, structure and theory. Furthermore, he gave me advice on sources of information and data, in addition to recommendations regarding key informants.

Barcelona, 14.12.2011

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1. INTRODUCTION

According to the World Wide Fund for Nature (WWF) *"The global fishing fleet is 2-3 times larger than what the oceans can sustainably support."*[2]

In addition, the FAO states that *"Marine capture fisheries resources are usually considered close to full exploitation worldwide with about half of them fully exploited, one quarter over exploited, depleted or recovering from depletion and one quarter only with some capacity to produce more than they presently do."*[3]

How does the European Union (EU), one of the largest fishing industries and the largest market for fish imports, manage their fisheries? The management of a common pool resource may be one of the most challenging tasks, as it includes a large number coastal nations each with differing and often conflicting interests, sharing the same resources. How would the EU manage its fisheries when it involves 27 different member states, of which the majority have a coastline? The answer came in 1983, when the EU introduced the Common Fisheries Policy (CFP). Since then, the CFP has undergone many changes and challenges through the review in 1992 and later in the 2002 reform, changing both objectives and measures in order to better manage the EU fisheries. However, the EU are again reforming the CFP, and the Commission has presented their proposal to the European Parliament, who will be discussing the draft and make a decision in 2012.

In addition to the EU, the largest fishing nation in Europe, Norway is sharing both fishing areas and fish stocks with the EU. Furthermore, Norway is the number one exporter of fish products to the EU market, and respectively the tenth and third largest in terms of volume and export value.[4]

Based on the increasingly deteriorating status of the EU fishing industry and the decreasing trend of fish resources, in relation to the Norwegian fishing industry, it will also be interesting to look at the similarities and differences between the fisheries management in the EU compared to Norway.

1.1 QUESTIONS

The main question is a result of contact with the Ministry of Fisheries and Marine Affairs in Norway. They advised me about the current reform of the Common Fisheries Policy in the European Union, hence I ended up with the following question;

How has the development of the Common Fisheries Policy (CFP) in the European Union (EU) changed since it began?

In addition, I will like to add some underlying questions that I find important in relation to the Common Fisheries Policy in order to answer the main question;

What are the effects of the changes made in the CFP and are these coherent with the objectives of the CFP?

What are the reasons for the changes and the current reform of the CFP?

How is the fisheries management in Norway compared to fisheries management in the EU?

1.1.1 Limitations

In this thesis I have selected to limit my field of research to the European Union, with additional focus on some of the main fishing nations and member states of the EU, namely Spain and Denmark, in addition to Norway. I have chosen these three countries as Spain is one of the largest fishing nations in Europe, and Denmark is a country differing from Spain regarding geography, economy and characteristics of their fishing sector. I have also selected Denmark and Norway because they both are important actors in the North Sea, the ICES area IV, and since Norway is the largest fishing nation in Europe.

As I mentioned above, I have selected to look at area IV, the North Sea, since this is one of the marine areas in Europe with the highest number of assessed fish stocks, implying availability of data and making it possible to check for the effects I would like to analyze.

The relevant time horizon will be limited to the start of the European Union, and more specific since the start of the Common Fisheries Policy in 1983 and until today. The analysis will be dependent on the availability of data, and therefore in some aspects it will only be available for later periods. But again, this will not have a negative effect on the analysis, since it will only be relevant to see the effects of the changes made in the last decades.

1.2 STRUCTURE

I will start the thesis with a historical background of the Common Fisheries Policy, which will uncover the relevant aspects and theories in fisheries management. Furthermore, I will discuss different concepts and theories uncovered in the background of the CFP, followed by an analysis of the effects of changes made in the CFP, and compare the fisheries management in the EU with Norway. Finally, I will have a look at the future outlook for the CFP in relation to the current reform. Before that, I will give a short description of the methods used.

1.3 METHODOLOGY

This part briefly discusses the methods used in the analysis in section 4, in addition to the collection of data in relation to both the history of the CFP and the statistical data on catches, fishing fleets and the ICES advice. The theory used in this thesis is mainly based on theory from the following courses; International Fisheries Management, European Integration, Resource Economics and International Economic Organizations.

1.3.1 Research design

The questions I have asked demands both qualitative and quantitative methods. The first will consist of collecting data from people with knowledge, as there already exists research on the subject. In addition, vital information is collected directly from the EU webpage and other important organs in relation to the Common Fisheries Policy. The latter will consist of collecting secondary data on historical catches, advice and the development of the fishing fleet to be able to analyze the effects of changes in the CFP.

1.3.2 Choice of method

The choice of method can, on the basis of my research design, therefore be categorized as *dual*, including both qualitative and quantitative methods. The reason why I have selected a dual design is the availability of information, data and reports in relation to the CFP. In addition, a quantitative analysis is necessary to see the effects and development of the measures used to manage the CFP. Hence I have selected to use time-series on catches, the fishing fleets and fish stocks to check for the development of the CFP and whether or not it has complied with the objectives. Further I have based my thesis on qualitative reviews of official documents on the CFP or related to the CFP.

1.3.3 Operationalization

As mentioned in 1.1.1, this thesis will focus on the Common Fisheries Policy in the EU and in particular the fisheries in the North Sea; one of the most important areas of fishing, not only for Norway but for the EU as a whole. Furthermore, Spain and Denmark have been selected to be included in my analysis as these are two of the largest fishing nations within the EU. A comparison between Norway's fisheries policy and the CFP for the EU will highlight differences between the two, and give insight in what weaknesses and strengths each policy have.

1.3.4 Selection of informants

To be able to find answers to the questions asked I started by contacting my thesis advisor, Rögnvaldur Hannesson. He was my professor in International Fisheries Management, Resource Economics and Petroleum Economics at Norges Handelshøyskole, and has information and knowledge about fisheries and fish resources. In addition, I contacted the Ministry of Fisheries and Coastal Affairs as I mentioned in 1.1.

Mr. Hannesson recommended me to contact Jan Frederik Danielsen, fisheries advisor in the EU delegation from Norway. He has also advised me on where I can find relevant information about the current reform.

Further I have contacted the Institute of Marine Research in Norway regarding statistical data on catches and advice on total allowable catches (TACs) given by the International Council for Exploration of the Sea (ICES).

1.3.5 Data collection

I started this thesis by reading a report I received from my thesis advisor, *"A Diagnosis of the EU fisheries sector"*, which gave me an overview of the current situation of the CFP. In addition it uncovered relevant sources of information and how I could narrow my questions. Because I started this thesis by researching the history of the CFP, I collected additional information simultaneously as a part of the qualitative reviews and considerations.

The quantitative method consists of collected secondary data regarding the fishing fleet, catches and advice given by the International Council for Exploration of the Sea. This data is relevant to see the effects of the changes made in the CFP since the establishment in 1983.

1.3.6 Data analysis

The analysis will consist of a quantitative analysis in mainly two parts; first of the fishing fleet, followed by data on catches. Therefore, the analysis will be tied to important events or changes made throughout the history of the CFP, to check whether or not the changes made have had the desired effect.

The second part will consist of comparing key elements of an ecosystem approach to fisheries management with the measures and characteristics of the CFP, as a supplement to look at the economic development of the fishery sector in the EU in general terms. Finally, I will compare the development of the CFP with the fisheries policy in Norway, to see whether the policies used correlate or not.

The reason why I have selected to look at data on catches, fishing fleet and advice on TACs from the ICES is simple and became clear when mapping the history of the CFP. I was recommended by my thesis advisor to narrow my thesis to check for data from one specific area with available data. The size of the fishing fleet has been one of the main concerns since the creation of the CFP, in addition to the balance between

fleet capacity and available fish resources. Therefore, checking the development of catches in relation to scientific advice became necessary to better answer the questions posed.

1.3.7 Critical remarks

The analysis in this thesis is based on data from ICES and Eurostat. Figures and diagrams derived from these statistics are generated in a program called "Numbers", similar to Microsoft Excel. The access to more sophisticated analytical programs has been limited, as I have been based in Barcelona during my thesis work. However, the figures and diagrams are sufficient to draw an overall picture of the past and current situation of the CFP.

Regarding *Figure 11, 14, 23, 25 and 27*, illustrating the relationship between the advised and agreed TAC, it can be mentioned that the ICES does not always recommend a specific TAC, and therefore some years are missing on the line showing the advised TAC.

1.3.8 Evaluation

The evaluation of the results from this thesis can be divided into three different perspectives regarding how the data is collected, credibility of the data used and transferability referring to whether or not the results can be relevant for other fields or in this case, countries.

Reliability

The data collected is recommended by key informants, who are knowledgeable on the subject of the European fishing industry, implying that the data used in this thesis are reliable. Furthermore, I selected to use information from several sources, to increase the objectivity of the thesis, and to check whether or not the different sources had come to the same conclusions.

Credibility

As mentioned above, the results from this thesis will be credible in the sense that the analysis is based on data from several sources including the EU, the ICES, the Organisation for Economic Co-operation and Development (OECD) and the Food and

Agriculture Organization (FAO), in addition to literature on the subject. The data is mainly collected from Internet sources, which can generally be criticized, hence reducing the reliability and credibility. However, the use of more trustworthy sources like well known organizations' websites, such as the ones mentioned above, will make up for the lack of reliability and credibility by relying on the Internet as a primary source of information.

Transferability

Transferability refers to whether or not results and methods used can be transferred and used in other situations or cases. In this case, the results and the aspects highlighted can be used as a learning process, pointing out critical elements regarding fisheries management. Therefore, other fishing nations having similar problems may become aware of the many critical elements vital in order to manage fisheries in an effective way.

2. THE HISTORY OF THE COMMON FISHERIES POLICY

This chapter presents a selection of important historical events that have affected the development of the Common Fisheries Policy (CFP) in the European Union. The first is the Treaty of Rome, which was agreed upon in 1957 and was the start of common policies within the European Community (later the EU), then consisting only of West Germany, France, Italy, the Netherlands, Belgium and Luxembourg. This is followed by short summaries of events leading up to the official establishment of the CFP, such as the European Fisheries Convention in 1964, the principle agreed of equal access to fishing grounds in 1970, Norway's "no" to the EEC and disputes between Iceland and Great Britain in 1972, Denmark becoming a member of the EEC in 1973, and the formal start of the of the negotiations of the CFP in 1976 and the extension of fishing rights.

This chapter continues with a summary of the establishment of the CFP itself in 1983, as well as key historical events since the establishment. These include the membership of Spain and Portugal in 1986, the review of the CFP in 1992, and the 2002 reform of the CFP. This chapter concludes with a section focusing on how the current CFP functions.

2.1 The Treaty of Rome

The Treaty of Rome in 1957 led to the establishment of the European Economic Community (EEC), and is important in relation to the Common Agricultural Policy (CAP). The CAP fell under the Common Market and was a policy regarding agricultural products, also including fishery products.[5] Furthermore, the relatively comprehensive Treaty went as far as stating in Article 32.4: *"The operation and development of the common market for agricultural products must be accompanied by the establishment of a common agricultural policy."*[6] This initiated the start of a common agricultural policy, which later also resulted in the Common Fisheries Policy. Following Article 33, the objectives of the CAP stress the importance of labour, market stability and reasonable prices. In addition it is stated in Article 33.1d: *"to assure the availability of supplies"*[7] Which should imply a sustainable use of

natural resources in order to maintain a stable supply of agricultural products. I will discuss the concept of sustainable fishing in more detail in the theoretical section in Chapter 3, but FAO defines sustainable development as: *"...the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry, and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable."*[8]

The relevance of the 1957 Treaty to this thesis is not only the contribution in understanding the development of the CFP, but also the early focus on sustainability in the European fisheries management, a concept which has lived on and escalated in importance in policy making without discussing this further.

2.2 The European Fisheries Convention in 1964

The European Fisheries Convention of 1964 included the members of the European Free Trade Association (EFTA), (Denmark, Austria, Portugal, Sweden, Switzerland, Norway and the United Kingdom)[9], and the European Economic Community (EEC) consisting of the six founding states in addition to Ireland and Spain. The most important outcome of this convention was the agreement on the *System of two zones*. This system consisted of a coastal belt of 0-6 nautical miles, where the coastal state had exclusive rights to the resources, and another belt from 6-12 nautical miles, where states that had been fishing within this zone between 1953 and 1962 had the right to continue fishing within this zone.[10] This made the basis for the later agreement between the member states of the EC.

2.3 Principle agreement of equal access to fishing grounds in 1970

In 1970, all the members of the EEC agreed on equal access to the waters of all the member states, not including the coastal band of 6 nautical miles. This implied that all member states could fish in waters 6-12 nautical miles from the coastline of all the other member states. There was open access in the rest of the ocean, meaning that every actor could fish freely.[11]

The only difference was that the members of the EEC whom had not previously been fishing within the zone of 6-12 nautical miles of the other member states could do so, while in the rest of the ocean open access still prevailed.[12] However, this did not indicate any further differences for the non-members, like Spain, Denmark and Norway. This agreement was the early start or basis for the later Common Fisheries Policy (CFP) in the European Union.

2.4 Norway's "No" to the EEC and disputes between Iceland and Great Britain in 1972

Norway is the largest fishing nation in Europe, followed by Iceland and Denmark[13], and in 1972, Norway applied for membership in the EEC together with Denmark, the UK and Ireland. However, in referendum, a majority voted no to become member. The reasons why Norway did not become member of the EEC are many, but one of the main arguments was that the equal access rule would weaken Norway's ownership of its fish resources tied to the long coastline[14] because Norway is one of the top exporting countries of fish products, and is the largest contributor in terms of imports to the European Union[15], which could have had a negative impact on the norwegian fisheries.

When Iceland in 1972 claimed further fishing rights and extended their fishing zone from 12 to 50 nautical miles, Great Britain responded by sending out their navy to protect their fishing vessels fishing outside the zone of 12 nautical miles, in accordance with an agreement reached in 1961, after the first Cod War. The trend of Iceland extending their fishing rights together with the United Nations Law of the Sea and other nations extending their economic zones initiated the extension of fishing rights by other nations.[16]

2.5 Denmark becomes a member of the EEC in 1973

Together with Norway, Ireland, and the United Kingdom, Denmark applied for membership in the EEC in 1972, and all countries except for Norway became members. When Denmark, the United Kingdom and Ireland entered the EEC, the agreement from 1971 of equal access to member states' waters was stopped for a period of 10 years, as the new member nations had much higher catches than the

founding member states.[17] Article 101 of the Accession Treaty specifies where the 12 nautical miles and not the 6 nautical miles rule applies[18], resulting in some of the new members not opening up parts of their 12 nautical miles zone to other members of the EEC. Therefore, the entrance into the EEC did not have any direct effect on Denmark's fishery until some years later.

2.6 Formal start of negotiations of the CFP in 1976 and extending fishing rights

In 1976, the United Kingdom extended its fisheries limits in accordance with the International Law of the Sea, from 12 to 200 nautical miles. The 200 miles limit means that within this area, the sovereign state has the ownership right of the natural resources within this area.[19] Since the United Kingdom entered the EEC in 1973, this decision did not affect the original agreement with the other member states, only that these rights became part of the area which the United Kingdom had to share with the other member states.[20] Later in the 1970s, the ratification of the 200 nautical miles limit changed the idea of free access to fish resources. This was initiated by Iceland extending their fishing rights further in 1975, which again resulted in disputes with Great Britain, the third Cod War, and pressured the community to extend the exclusive economic zone in the North Sea and North Atlantic.[21] Exclusive economic zones were created and agreed upon in 1977, which affected the ongoing negotiations between Norway and the EEC. The reciprocal agreement on fishing was not signed until 1980 and regarded the allowance of vessels from the EEC to fish in the Norwegian zone and vice versa. Furthermore, Norway and the EEC agreed on cooperation in protecting and managing fish resources.[22]

2.7 Official start of the CFP in 1983

The Common Fisheries Policy was set in force in January 1983 and consisted of four main points of importance concerning economic and biological as well as social aspects of the European fisheries. These four main points centered around;

- Sustainable use of fish stocks;
- and development of fishing fleets and aspects related to the fishing sector;

- in addition to a common organization for the market;
- and agreements and fisheries policy towards third countries not part of the community.[23]

The CFP included conservation and management of fish stocks as well as a guarantee of income and future employment for fishermen, in addition to supplying the market with fish products at a reasonable price. As early as 1983, the problems related to an oversized fishing fleet became apparent. The EEC became aware of the challenges regarding the inclusion of Spain and Portugal in the community, resulting in an oversized fishing fleet and therefore a problem with overfishing, hence making the maintenance of a stable supply to the markets more difficult. The most important feature of the CFP was the harmonization between member states regarding their structural policies. The Common Fisheries Policy agreed upon in 1983 was originally set for 20 years, but later it was agreed for a midterm review.[24]

Since the creation of the CFP, the agreement between Norway and the EEC regarding reciprocal fishing has been regulated with annual agreements on quotas.[25]

2.8 Spain (and Portugal) become members of the EEC in 1986

One of the main concerns with Spain entering the European Economic Community was the fact that the size of their fishing fleet was larger than that of the EEC. Therefore the member states of the EEC had incentives to restrict the access of the Spanish fleet to the *exclusive economic zone* (EEZ).[26] Spain entered the EEC in January 1986 with limited access to the other member states' waters. They were, however, not admitted to be a part of the CFP, since the rest of the community was having problems with oversized fishing fleets.[27] In addition to problems regarding the CAP as well as the CFP, long negotiations were required in order to come to a solution for Spain entering the European Community. Also, the free movement of the labour force was a strong argument against letting Spain become part of the EEC, as unemployment was relatively high in Spain during the beginning of the 1980s.[28] Spain and Portugal indirectly became part of the new approach to fisheries management agreed upon in 1983, as they were not admitted access to the other

member states' fishing zones. Hence, the preservation of fish stock measure applied for the new member states.

2.9 Review of the CFP in 1992

The first review and reform of the Common Fisheries Policy came in 1992, the necessity of which arose from the trend of overcapacity and downward trends in fish resource. The review was of great importance, as Spain and Portugal desired equal access to Member states' waters. In addition to the accession of Spain and Portugal, the fall of the Berlin Wall in 1989 and the unification of Germany led to further challenges for the CFP, because the fishing fleet of former East Germany was characterized by overcapacity and old equipment. Accession of several coastal states made it clear that the CFP needed to change to be better equipped to handle these new challenges.[29] The new principles of the CFP for the next decade were[30];

- sustainable exploitation of fish stocks;
- balancing fishing effort and fish resources;
- further improvement of the enforcement of the current Community rules;
- better policy coordination of the CFP in relation to other policies;
- and distribution of responsibility.

The review of the CFP stressed the importance of matching the fleet capacity with the availability of fish resources, but also stressed the importance of social and economic effects resulting from reducing the fishing fleet. The original objectives from the 1983 creation of the CFP also stressed the importance of fleet reduction to prevent further overexploitation of fish stock. However, the imbalance between the fishing fleet and fish catch potential was even greater during the 1990s. Therefore, the CFP needed to tackle this imbalance in a more effective way, and introduced structural measures to compensate for the reduction of the Community fleet.[31] The review in 1992 also introduced the concept of fishing effort. OECD defines fishing effort as *"...a measure of the amount of fishing"*[32], but they also mention that the European Union defines it as fleet capacity, which can be expressed as tonnage/engine power multiplied with

time at sea, often expressed in days.[33] The concept of fishing effort was introduced to further and more effectively reduce the fleet capacity. In addition to introducing more areas with limited fishing, e.g. The Norway Pout Box in the North Sea to protect the Norwegian pout and sand eel, a new measure was the creation of fishing licenses from the beginning of 1995.[34] These new and more rigid measures introduced in the 1992 review of the CFP were also created due to new accession of coastal states such as Sweden, Finland and Norway. However, Norway again did not become a member because a second referendum ended with the same conclusion as in 1972. The changes made to the CFP were to last until the reform in 2002.

Further negotiations on the agreement between Norway and the EU from 1980 took place in 1992, which resulted in an addition to the total allowable catch on Northeast Arctic Cod (formerly known as Arcto-Norwegian cod) in the Norwegian economic zone to the EU until 1997. The additional quotas given to the EU was compensated with equivalent quotas given to Norway.[35]

2.10 Spain and Portugal demanding full membership of the CFP from 1996

As mentioned above, when Spain and Portugal entered the EEC in 1986 they did not obtain full access to EEC waters and were not included in the CFP. In 1994, Spain and Portugal demanded better conditions and full inclusion in the CFP if they were going to accept the accession of new members. This demand did not come without complications, because the other members of the EEC already were having problems with overcapacity and overfishing. The agreement that was set into force in the beginning of 1996 did allow Spanish fishing vessels access to most of the EU waters, but they did not receive quotas to fish in these areas. They could therefore not fish for quota fish, e.g. cod, in these areas.[36]

2.11 The 2002 Reform of the CFP

When creating the Common Fisheries Policy in 1983, the member states of the EEC agreed on an aforementioned set of objectives that attempted to maintain the use of a common resource, namely fish. After several challenges regarding new accession of coastal states, the International Law of the Sea, the creation of the World Trade

Organization, etc. created pressure for changes in the CFP, in addition to more scientific evidence of overfishing and poor economic performance for the EU fisheries. This situation resulted in a reorientation of the objectives of the CFP. The change gave the same priority to environmental, economic and social aspects related to the CFP, stressing that sustainable use of fish resources through stable incomes for fishermen and the importance of a balance between marine resources and supply to consumers.[37] The reform of 2002 resulted in three new regulations which came into force on the 1st of January 2003:

"COUNCIL REGULATION (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy"[38]

"COUNCIL REGULATION (EC) No 2369/2002 of 20 December 2002 amending Regulation (EC) No 2792/1999 laying down the detailed rules and arrangements regarding Community structural assistance in the fisheries sector "[39]

"COUNCIL REGULATION (EC) No 2370/2002 of 20 December 2002 establishing an emergency Community measure for scrapping fishing vessels"[40]

In addition to the new regulations, the new CFP stressed the importance of a long-term approach to tackle the problems with stocks not being within safe biological limits through multi-annual recovery plans. Furthermore, they created multi-annual management plans for other stocks to prevent them from being overfished. In order to do this they were dependent on scientific advice on how to set quotas, and chose a precautionary approach based on advice from the ICES. In addition, emergency measures to assist the protection of the common resources were established. These measures were to be set by the Commission and could last for 6 months with a further extension of 6 more months if necessary. Member States would also be able to set up measures to protect their resources, but only within their 12 nautical miles zone for a period of 3 months.

Because one of the main challenges was the overcapacity of the fleet, and the fact that the former measures proved not sufficient to deal with this problem, the matter of aid

was changed to not be counteractive to the goal of reducing the fleet capacity. Therefore member states and the commission only were to give aid to measures taken with the result of improving the fleet but not without reducing its capacity. Examples includes the improvement of working conditions aboard fishing vessels or measures to reduce by-catches through selective fishing techniques or to have a vessel monitoring system (VMS) aboard. This system would replace the Multi-Annual Guidance Programmes (MAGPs), which has not been an effective management tool to limit fleet capacity.

To further reduce the overcapacity of the fleet, the Community introduced a scrapping fund in order to tackle the effects of scrapping vessels, and compensate fishermen who are affected by restructuring. It contributed with premiums in addition to those available under the Financial Instrument for Fisheries Guidance (FIFG) regarding structural problems, 20% higher than those already existing for decommissioning under the FIFG.[41] The FIFG's goal was to contribute to the balance between the size of stocks and fishing effort, better competitiveness, improve supplies to market and maintain and strengthen areas dependent on fishing.[42] They also contributed to reduction of the fleet with aid to transfers of EU vessels to third countries.

Regarding access to fishing grounds and resources, the same principle as earlier was intact; in the 6-12 nautical miles zone the sovereign state in addition to the nations that have been fishing within this zone earlier can continue do so. Outside the 12 nautical miles zone the Council would make decisions in coherence with the CFP, while limited areas such as the Shetland Box should remain to sustain and secure certain fish stocks.[43]

Another important element of the 2002 reform was the importance of better control of fisheries, both in terms of effectiveness and transparency. The creation of a Community Fisheries Control Agency (CFCA) coordinated and stressed the importance of cooperation and coordination between member states to better handle the situation of illegal, unreported and unregulated fishing (IUU) in addition to normal control mechanisms.

However, the most important feature of the reform was the creation of regional organs to better include the local community, fishermen and other stakeholders. The North Sea Regional Advisory Council (NSRAC) was one of seven RACs created in 2004. Their responsibilities are to communicate with the Commission on problems related to their area and can recommend changes to be made.[44]

The final element of the reform was the creation of several action plans to clarify some problems of the CFP. Most of them are related to environmental protection, IUU, discards of fish, control and inspection and consequences of the CFP.

2.12 Today's CFP

The next review of the CFP was scheduled for 2012, 10 years after the reform in 2002. However, since the start of the CFP in 1983, the 2002 reform represented the largest challenge and change to the Common Fisheries Policy. The effects of the reform are already visible but it remains to see what conclusions will be made in the current review of the CFP. Since the reform in 2002, a gradual implementation of the changes has been adopted, the effects of the changes of which will become apparent in the years to come.

The effects are evaluated in the current situation where the Commission is proposing changes in the CFP to better meet previously set objectives. This work focuses on failures, problems and challenges of the CFP, which measures have complied with goals and which need to be adjusted or require more time to fulfill their purpose.

Since the 2002 reform the total annual catches in all the regions of the EU have declined. This decline indicates that the new conservation measures generated under the reform have not had a significant effect on the conservation of fish stocks. Some of the new measures need time to implement and generate an effect on the development of fish stocks, but in any case, indications in the Commission Staff Working Document: A Diagnosis of the EU fisheries sector (22.04.2009) are that a large number of fish stocks are not at a safe biological level. In the North Sea almost all stocks are overfished, again indicating that the measures taken by the EU have not been sufficient to stabilize nor to provide an economically sustainable fishery.[45]

There are many reasons for the current new reform of the CFP, as mentioned above, there exist economic reasons as well as environmental reasons for the new reform. The reasons are still the same as in the previous reforms; to change the CFP in order to make it more adept to meet the objectives stated. The problem with overcapacity is still present and has been present since the start of the CFP in 1983. The diagnosis of the EU fisheries sector (22.04.2009) discusses various challenges with the current CFP, its shortcomings and important aspects that need attention. I will focus more on this part in the analytical section, as these challenges and changes are part of the current reform.

I will take a more detailed look at the statistics of fleet capacity, annual catches, fish stocks and TACs and quotas agreed upon in the European Council in relation to scientific advice from the ICES in the analytical section presented in Chapter 4.

3 THEORETICAL BACKGROUND

In this part I will discuss some of the theoretical background for fisheries management. The main measures used under the Common Fisheries Policy in the EU have been established to achieve the objectives. One of the most important objectives or worries has been the size of the fishing fleet. Therefore, measures such as the restriction of the use of some types of fishing gear or days allowed at sea, or setting quotas to limit the fishing capacity have been put in place. This section starts with a discussion of some of the different ways the EU has been managing fisheries under the CFP, and concludes with a discussion of some important aspects and concepts in relation to fisheries management.

3.1 FISHERIES MANAGEMENT

Instead of focusing on a definition of fisheries management, I find it more important to stress what fisheries management is in the sense of which tasks are important. As Cochrane puts it; *"The integrated process of information gathering, analysis, planning, consultation, decision-making, allocation of resources and formulation and implementation, with enforcement as necessary, of regulations or rules which govern fisheries activities in order to ensure the continued productivity of the resources and the accomplishment of other fisheries objectives."*[46] In this sense, fisheries management implies that it should be a continuous process, adapting to any economic, social and environmental changes. For this reason I will discuss some of the different measures for managing fisheries, which I have mentioned in the previous chapter on the history of the CFP. I will take a historical view of various measures used in the CFP throughout its lifetime, by starting with the most obvious management method; open or free access to fishing grounds.

3.1.1 Open access or free access

Historically, before the creation of limited fishing zones under the European Fisheries Convention of 1964 and the recognition of the 200 nautical miles exclusive economic zone (EEZ) by more countries in the 1970s, most fishing grounds or waters were subject to free access, implying that anybody wanting to fish in an area could do so without any specific limitations or controls. A free access fishery is *"...typically*

characterized by many independent decision units, a decision unit typically being a skipper or a boat owner..., and less frequently a fishing firm with many boats. The essential point of this is that no single decision maker can control the fish stock by his own action. If somebody decides to leave some fish unharvested today in order to take them tomorrow, he has no assurance that they will be there tomorrow as long as others can take them in the meantime. The fisherman who catches fish from a stock to which many others have access thus has a good reason to take as much as he can as quickly as possible."[47] This concept leads to a large fleet capacity, often overcapacity and overexploitation of fish stocks resulting from too many boats. Relating this to one of the main problems with the CFP is not difficult, as it has been present since the start of the EU and the CFP. Still, the Commission is trying to solve the problem with overcapacity and this is one of the most important aspects of the current reform. The only limitation to an open access fishery is the cost in relation to the size of the stock. If the costs of fishing increase as the stock shrinks, due to fishing, fishing will stop itself as there is no profit to gain from continued fishing. This happens when the price per unit of fish equals the cost per unit of fish.

Regarding the characteristics of a free access fishery, as I mentioned above, the possibility of short term profits creates incentives for the actors to fish more now in fear of others taking more now than later. This increases the fishing pressure on the fish stocks and in the long run reduces the reproductive possibilities of the fish stock. This eventually can lead to a stock level below a biologically sustainable level, and a worst case scenario can lead to extinction. Another possibility is that if the cost of fishing gets sufficiently low or the price of fish gets sufficiently high it could lead the free access fishery to the point of extinction for the fish stocks. In an open access fishery the only reason for leaving anything behind is in order to let the stock to grow again. This does not make much sense as most fishermen have a short-term view because of the large number of fishers.

3.1.2 Limited access and property rights

The first step of the CFP was to exclude actors outside the EU from the EUs exclusive economic zone, meaning reducing the number of actors in some areas. After the ratification of the fishing zones with limits in 1964, the concept of free access became

more limited in the sense that the national state had the sovereign rights to the resources within the 0-6 nautical miles zone, and other nations of the EU had only a limited access to the second zone of 6-12 nautical miles. However, since most of the fish stocks are outside this zone, the limitations did not have any large effects on preserving fish stocks. Further it did to some extent reduce the number of actors or active fishing fleet within this limited zone of the EU.

Another way of controlling the access to fish resources was the introduction of a licensing system in the 1992 review. A fish license is defined by the OECD *"...as a permit, a license or permit is a document authorising the taking of fish according to the terms established by the regulating authority."*[48] A licensing system was introduced under the 1992 review to regulate the access to fish resources.

Further the EU has closed or limited access to certain areas for fishing to conserve some of the most important areas for spawning, like the marine protected area (MPA) in the North Sea, the Norway Pout Box, as I mentioned in chapter 2.9, the FAO defines MPAs as *"...temporally and geographically defined areas that afford natural resources greater protection than is afforded in the rest of an area as defined in relation to fisheries management (e.g. The fishery, ecosystem or zone constituting the management unit), i.e. a no-take area to protect spawning of a certain fish species targeted by a fishery or an area with specific gear prohibitions."*[49] The North Sea has several MPAs, and *figure 1* below shows some of the most important ones[50];

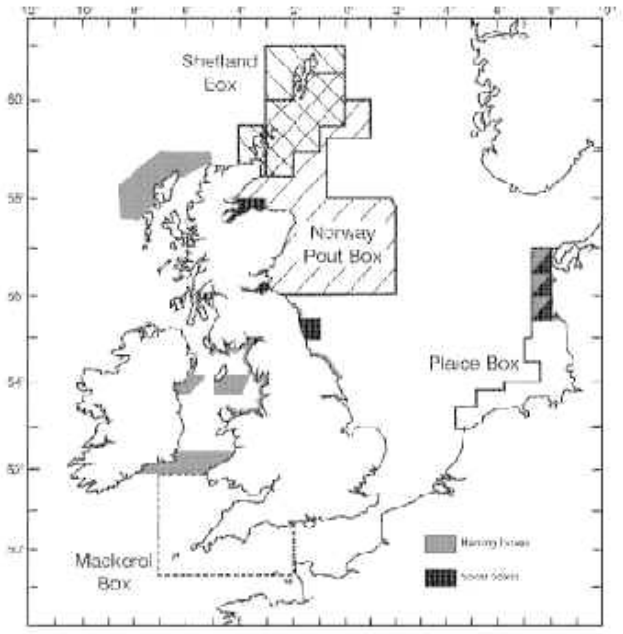

Figure 1: Marine Protected Areas in the North Sea

3.1.3 Effort management

In the 1992 CFP review, new regulations to handle the imbalance between fishing capacity and available fish resources were introduced. One aspect of the regulation was the concept of fishing effort. With the EU's definition of fishing effort as fishing capacity previously explained, I will now discuss the concept of fishing capacity further.

Compared to other sectors, defining capacity in fishing is a bit more complicated. The main reason for this complication is the fact that the "producer", or the fisherman, has little or no control of the fish resource. As mentioned under free access, one single actor, a fisherman, cannot alone affect the fish stock. In addition, fish resources are free and the size of the stock can vary to a large extent. The result is a diverse range of definitions.[51] As mentioned, the EU defines fleet capacity as tonnage/engine power multiplied with time at sea.[52] The FAO defines fishing capacity as *"...the amount of fish (or fishing effort) that can be produced of a period of time (e.g. a year or a fishing season) by a vessel or a fleet if fully utilized and for a given resource condition."*[53] The output produced, or catch of fish, is not only dependent on the fish effort, the type of fish gear and the use intensity, but also on the size of the fish stock. Furthermore, the size of the fish stock is dependent on the fishing mortality, which is

easily defined by the ICES as *"...deaths caused by fishing."*[54] In this sense, we can define input as fishing effort or fishing mortality. The input used therefore affects the fishing mortality, which is also dependent on the size of the utilization of the fishing fleet. If we do not have a problem with overcapacity, input management will not be a crucial factor.

This brings us to the topic of overcapacity, indicating that the fleet capacity is larger than what is needed to catch the total allowable catch (TAC) given for a fish stock in accordance with the definition given by the FAO. TAC can be defined as *"...The quantity of fish that can be taken from each stock each year. In the European Union, the figure is agreed by the Fisheries Council of Ministers each December for the following year. EU Member States are allocated a fixed proportion of the total allowable catch as their national quota."*[55] In this respect it is important to stress the difference between long-term and short-term overcapacity. The short-term overcapacity is not to the same extent important as the long-term, because the short-term overcapacity can result from fluctuations in the fish stock. However, if the natural fluctuations are not accounted for, a relatively small fish stock can experience severe damages due to short-term overcapacity. While long-term overcapacity can have an impact on fish resources and the economy of the fishing industry. In the late 1990s, S. M. Garcia and C. Newton made an estimation of the world fishing capacity, stressing that the world fishing capacity should be reduced by 25% for operating costs to be covered by revenues, and a further reduction of 53% to cover total costs.[56] This underlined the need for new measures to reduce the overcapacity in the EU fishing fleet, which was already stressed as a problem back in 1983.

Before defining overcapacity, fleet capacity or fishing capacity can be described in two different ways, depending on inputs or outputs. Starting with the latter, in terms of output, capacity *"...can be considered as the maximum harvest level that a fisherman or a fleet can produce with given levels of inputs, such as fuel, amount of fishing gear, ice, bait, engine horsepower and vessel size."*[57] In this sense, overcapacity, defined in the same terms would indicate that, given the levels of input, the capacity would be higher than the given TACs. In terms of input, capacity can be defined as *"...the minimum fleet and effort required to produce a given total allowable*

catch or given output (harvested catch) level."[58] In this sense, overcapacity would mean that the capacity exceeds the minimum fleet required to catch the given TAC.

The EU introduced several measures in the 1992 regulation as a mean to adjust the imbalance between fish resources and factors affecting the fishing mortality. They state in the Council Regulation (EEC) No 3760/92 of 20 December 1992 that *"...for the purposes of rational and responsible exploitation of resources, the selectivity of fishing methods and gear should be improved with a view to optimum utilization of biological potential and limitation of discards"*[59]. Therefore I would like to discuss different measures for managing fishing effort.

The most common way of managing fishing effort are controls of inputs. Input controls imply restrictions on the use of fishing gear used in fisheries. We can separate these into three different types of controls, the first being fishing capacity controls which limit the size or number of fishing vessels in a given area. The second type of control refers to the time the fishing vessels are allowed to fish in the given area, named vessel usage controls, and is complementary to the first type of control. It is complementary in the sense that if one has a problem with overcapacity, limiting fishing capacity is possible by adjusting the time dimension, or time allowed to fish. The last, fishing effort controls, is a combination of the two previous, and implies restrictions on the capacity or usage. In addition, limitations on the amount of fuel may exist, but the most common way of input controls are limitations on fishing effort.[60] The main purpose of using input controls under an effort management is to lower the capacity of the fishing fleet. This is a way of reducing the fleet capacity without any physical reduction in the number of boats. If one has control of the fleet capacity, it will not be necessary to control how much it is utilized. However, it is difficult to maintain control of capacity, as fluctuations in the fish stocks will require some minimum control and adjustment from year to year. Another problem with input controls is the incentives to substitute the restricted factor for another factor, e.g. limiting the days allowed to fish can be substituted with more effort used during the days at sea. Additionally, it can create incentives to substitute the restrictions with increasing the technical efficiency of the boats, just to catch more fish in the period given.[61]

3.1.4 Catch management

Another way of managing fisheries is by catch management, or output controls. Compared to input controls, this implies direct limits on catches. TAC falls under this category, and the first output measure introduced in the CFP to preserve the fish resources was the total allowable catch (TAC) which I defined under section 3.1.3. The quotas given usually result in conservation of the fish resources, but if this is the only way of managing fishing, fishing effort will increase as long as there exists a possibility of profit, revenues being higher than the costs of fishing, and the fishermen or fishing firms will still have incentives to invest in a bigger boat or better fishing equipment to be able to take a larger part of the quota. This will increase the cost of fishing until all the possible rent is gone. Therefore, TACs might serve to protect and conserve the fish resources, but it can also lead to excessive investment in the fishing fleet.

Under this section an important element to consider is the problem with discards.[62] The definition of discards used by the FAO is *"...discarded catch is that portion of the total organic material of animal origin in the catch, which is thrown away, or dumped at sea for whatever reason. It does not include plant materials and post harvest waste such as offal. The discards may be dead, or alive."*[63] It is not clear how much discards amount to of total catches, but if TACs are set sufficiently low to reduce the fishing pressure, and still the stock is declining, it might be due to large discards of unwanted fish that are often replaced by larger and more valuable fish.

Hence there exist some different approaches to make sure that the TACs set are not exceeded; the first is simple and implies *"...Free fishing until the total allowable catch is taken and then shutting the fishery down"*[64], while the second divides the TAC by several periods, and closes fishing when the allocation is caught within each period. The first implies intense competition to catch a large proportion of the TAC before anyone else does. The result will be excessive capacity and more effort used than necessary, hence increasing costs. The same will most likely happen under the second approach, however it would result in a distribution of the catch throughout the year. The third regards *"Allocating proportions of the TAC to various sectors and leaving them to manage their own share themselves"*[65], implying that the sector will decide

themselves when to catch their proportion of their quota. The last approach is to do the same as under the third, but to individuals or individual vessels. The biggest drawback of the two last approaches is the administrative part and collection of catch statistics.

3.1.5 Individual Transferable Quotas

The OECD defines an individual transferable quota (ITQ) as *"A type of quota (a part of a Total Allowable Catch) allocated to individual fishermen or vessel owners and which can be sold to others."*[66] ITQs are part of the catch management or output controls, and are a way of allocating the TAC between fishermen or fishing firms. However, compared to input controls, technological process under output controls, like ITQs, does not result in depletion of the stock but rather in more efficient fishing. In the short term, small ITQs indicate that more efficient firms can lease quotas from less efficient firms which results in better utilization of the fleet. In the long term, fishermen can invest in appropriate boats for their quota, or alternatively buy quotas from fishermen who are leaving to have a sufficient basis for a boat of optimal size.[67]

Some of the problems related to ITQs are tied to enforcement and control of discards and underreporting. ITQs may create strong incentives for the fishermen to replace less valuable fish and underreport actual catches. *"Every fish not reported is a licence to catch the same quantity later in a legal manner"*[68] which affects individual quotas in general, not only ITQs. Furthermore, this complicates the problem with deciding TACs, because actual catches are much higher than reported. Another problem is how to distribute the ITQs when first given. If they are given for free, the fishermen will gain, but only the first generation, since they are gaining a right to fish from a common resource without any expense. The allocation of ITQs can also be done by auctions, but the main point is that nobody should lose regardless of how the quotas are distributed.[69]

Furthermore, the ITQ can be set as a fixed amount of the TAC or as a share of it. The first case will reduce the risk for the fishermen, since they will be certain of an income, while in the other case, they will be present to all the risk due to variability in the TAC.

Because the EU has recognized overcapacity as one of the main problems with the CFP, it is relevant to discuss subsidies and structural aid because they have been an important instrument or measure for the social aspect of reducing and regulating the fishing fleet.

3.1.6 Subsidies and structural aid

The only definition of subsidies that is internationally legally agreed upon is the one stated in the World Trade Organization Agreement on Subsidies and Countervailing Measures (ASCM). In Article 1 of the ASCM, subsidies are defined as *"(i) a financial contribution by a government or any public body, where a financial contribution can involve a direct transfer of funds, a potential direct transfer (such as through a loan guarantee), foregone government revenue, government provision of goods and services other than general infrastructure, and government purchases of goods, (ii) by a government or any public body within the territory of a Member, and (iii) which confers a benefit."*[70]

In the 1992 review of the CFP, structural measures were introduced to ease the social impact of reducing the EU fishing fleet.[71] How far this can be characterized as subsidies or not depends on the definition used. According to the OECD, in addition to what is covered in the WTO definition, they also include *"...transfers related to management, research and enforcement, fisheries access agreements, and fisheries specific infrastructure."*[72] According to this definition, restructuring the fishing fleet and supporting the fishermen affected with structural aid is defined as subsidies.

It is important to distinguish between direct and indirect subsidies, where direct subsidies are direct transfers of money to a beneficiary, and include e.g. vessel decommissioning programs. The latter refers to no direct transfers of money, but could include free access to fishing grounds. By including this, subsidies can in many instances damage the development in the fishing industry, but this is discussed further in the Analysis Chapter.

3.1.7 Stabilizing catches

The question regarding whether or not we should stabilize catches are discussed, and the reasons are the advantages of having a stable catch. First of all it will benefit the

utilization of fishing effort, and having a stable production both satisfies the fishermen with a stable income and a stable supply of fish products to the market. Hence the CFP might have tried to achieve this when setting the objective of relative stability. However, stabilizing catches indicate that a fixed amount of fish is taken in every period. It should therefore be mentioned that if the size of the stock fluctuates randomly, which is often the case, the effort needed to catch the same amount in every period would require different levels of effort. Therefore, stabilizing catches indicate a variable use of effort, while a variable catch indicates a stable use of effort. Even though stable catches might result in higher revenues, it will be more expensive. Hence it is not possible to conclude that the one is better than the other. It will be more practical to catch a fixed share of the stock, instead of a fixed amount of fish, since this will account for natural fluctuations as a result of other factors than fishing, such as environmental fluctuations.[73]

3.1.8 Ecosystem approach to fisheries management

An ecosystem approach to fisheries management implies taking measures to *"...protect and conserve living aquatic resources, to provide for their sustainable exploitation and to minimize the impact of fishing activities on marine eco-systems. It shall aim at a progressive implementation of an eco-system-based approach to fisheries management. It shall aim to contribute to efficient fishing activities within an economically viable and competitive fisheries and aquaculture industry, providing a fair standard of living for those who depend on fishing activities and taking into account the interests of consumers."*[74] This is further stressed in Regulation 2371/2002; *"The Common Fisheries Policy shall ensure exploitation of living aquatic resources that provides sustainable economic, environmental and social conditions."*[75] The most important aspect of an ecosystem approach to fisheries management includes focus on how fishing affects marine ecosystems, including effects on targeted species as well as by-catch on non-commercial species.[76] In addition to this, the ecosystem approach should take into consideration the mixed-fishery management method, meaning that fishing for one target species also has effects on other species that are caught together with the wanted one.

In this sense, an ecosystem approach should include long term management plans or multi-annual management plans that target a reduction of *"...fishing pressure to sustainable levels, targeting activities having adverse effects on the sustainability of fish stocks"*[77] , in addition it should *"...achieve 'favourable conservation status' of non commercial species and habitats; as well as reducing discards, incidental by catch and impacts on habitats by improving fishing methods"*[78] and lastly it should *"...develop an Action Plan on discards, and proposals to protect sharks, cetaceans and sea birds from the adverse effects of fishing."*[79]

FAO defines an ecosystem approach to fisheries (EAF) management as an approach that *"...strives to balance diverse societal objectives, by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries."*[80] Further FAO states that an EAF does use the same traditional management methods, the only difference is how they are applied to comply with the objectives stated above.

Some of the most important aspects in an EAF are technical measures, data collection, scientific advice, ecological risk assessment and defining the role of the RACs. In addition transparency and accountability are important aspects for speeding up implementation of the new measures. Further regionalization of the CFP can assist the implementation of the ecosystem-based approach to fisheries management.

The final point is the importance of sustainable use of marine resources under an EAF, which I will discuss later in 3.3.

As mentioned under chapter 3.11 concerning the 2002 reform, as part of the EAF, the reform stressed the importance of a precautionary approach to fisheries management based on scientific advice from the ICES. The precautionary approach is part of an ecosystem approach to fisheries management, in the sense that we should take into consideration scientific research about the state of current fish stocks and marine habitats. The OECD defines the precautionary principles with regards to renewable resources as *"...Renewable resources should not be used in excess of their natural regeneration."*[81] In this sense, information is crucial to be able to set adequate

objectives and measures for a precautionary approach to fisheries management. The ICES stresses that information is vital in the precautionary approach, as part of the advice given by the ICES since 1998. The advice given consists *"...of a framework of biological reference points, related to upper exploitation boundaries."*[82] Furthermore, the ICES says that *"Management decisions for sustainable fisheries should restrict the risk that the spawning biomass falls below a minimum limit, or that the fishing mortality rate becomes too high."*[83] Therefore the ICES has defined a minimum level of spawning stock biomass and an equal limit for maximum fishing mortality. Hence, it will be the task of management to prevent levels inferior to the biomass limit and superior to the fishing mortality. Since exceeding these limits can result in reduced productivity of the fish stock, that will affect future productivity. In addition to these limits, the ICES has set two similar limits, inferior to the minimum levels, to account for fluctuations in the fish stocks, called the precautionary biomass and precautionary fishing mortality.[84] This reflects the importance of information about the fish stocks to avoid the problems that can occur from severe and lasting fishing pressure.

3.2 THE CONCEPT OF COMMON RESOURCES

Common resources or common property resources are natural resources, like fish, that are not managed or owned by a single actor or individual but by a group.[85] In this sense, according to the common-pool resource theory, *"each fisherman will take into account only his own marginal costs and revenues and ignores the fact that increases in his catch affect the returns to fishing effort for other fishermen as well as the health of future fish stocks ... [E]conomic rent is dissipated; economic overfishing, which may also lead to ecological overfishing, is the result."*[86] This is discussed under 3.1.1 and what can be the results and the difficult aspects of managing a common resource.

3.3 THE CONCEPT OF SUSTAINABILITY

According to the OECD, a sustainable catch of fish can be defined as the *"Number (weight) of fish in a stock that can be taken by fishing without reducing the stock biomass from year to year, assuming that environmental conditions remain the same. Different levels of sustainable catch exist for different stock sizes. Maximum sustainable catch is defined in reference to the size and composition of a stock that make the natural growth of the stock equal to this maximum."*[87] When discussing the

concept of sustainability with regards to fish resources, another important aspect is the sustainable yield or the maximum sustainable yield. Maximum sustainable yield (MSY) in fisheries can be defined as *"The highest theoretical equilibrium yield that can be continuously taken (on average) from a stock under existing (average) environmental conditions without affecting significantly the reproduction process."*[88]

According to these definitions and *figure 2* above, the stock should be able to remain relatively constant due to fishing, meaning that the catch of fish should be equal to the growth rate, marked as S_{msy} in *figure 2*. This could of course fluctuate over time due to environmental changes. Another important point to make is that a single stock does not live in an isolated area, and is affected by other stocks in a prey-predator relationship. In this sense, fishing at a maximum sustainable yield level is a rather difficult thing to do. However, the main point should be that the level or the capacity of the past and current fishing fleet of the EU has been too high, which is indicated by the reduction in fish stocks, and the fact that more effort is needed to catch the same amount of fish as earlier. [89]

I will therefore try to discuss the concept of sustainability further in relation to the CFP and the challenges it faces. To start this discussion it is important to bear in mind that sustainability is often a misunderstood concept, and indicates different things according to who is talking about sustainability. In the sense of the CFP, the objectives include three different aspects regarding sustainability; economic, environmental and social sustainability. Therefore, it is important that we make it clear that we cannot achieve one of them without taking into consideration the two others. For this reason we need to achieve all three objectives simultaneously. Before discussing this further, we need to mention that sustainability alone indicates the most basic level, namely survival sustainability, which *"...involves the maintenance of ecological life-support systems, the social capacity to solve major problems and the economic capacity to meet subsistence needs of the population. At this basic level of sustainability all three requirements must be met simultaneously."*[90] Further, we have the dimension of intergenerational and intragenerational sustainability. The latter indicates that the current generation is experiencing survival sustainability, while the former entails sustainability by not harming future generations. So if we do not

currently have survival sustainability, how will we then be able to make sure we have intergenerational sustainability?[91]

Therefore, in the sense of the CFP, the concept of sustainability implies survival of fish stocks, economic sustainability and social sustainability. This includes that the

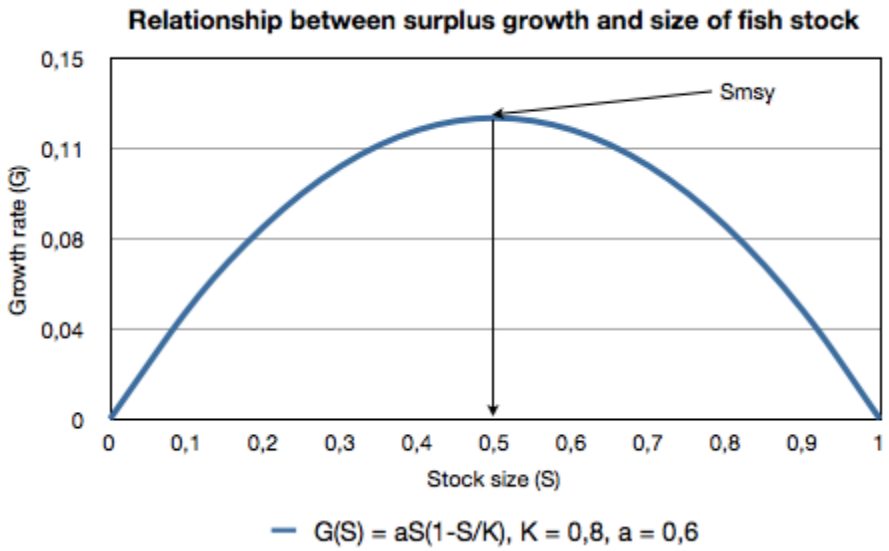

Figure 2: Maximum Sustainable Yield (MSY)

fish resources are exploited at a level not harming their future survival, and simultaneously having economic profitability and maintain the regions dependent on the fisheries.

In the following chapter I will analyze the effects of changes made in the CFP.

4. ANALYTICAL PART

This chapter presents an analysis of the CFP and the changes made throughout its lifetime since the start in 1983 until today, with focus on area IV, the North Sea, with regards to fish catch and quotas. However, I will first look at the European Union as a whole when analyzing the fish fleet, followed by a closer look at some of the important member states. Section 4.1 starts by discussing some important aspects with regards to the objectives of the CFP, in addition to identifying the most important changes made under the CFP to use them as checkpoints for how they have had effect on the fishing fleet and catches.

4.1 THE OBJECTIVES OF THE CFP

In order to fully understand steps taken by the CFP, this chapter starts with a discussion of their stated objectives. Objectives can be defined as *"...something that one's efforts or actions are intended to attain or accomplish."*[92] This is the basic definition of an objective, but in addition we can prioritize the objectives. Dividing them into ultimate objectives, being the objective with the highest priority, and intermediate objectives, which can be understood as political goals set to achieve the ultimate objectives. To be able to distinguish between the two, I will call intermediate objectives instruments, as instruments are used to achieve the ultimate objectives. Hence I understand the main objectives of the CFP as the ultimate objectives, which became more specified after the 2002 reform. The instruments used to achieve these objectives have been changing to a higher degree, generally becoming more diverse, including more aspects to achieve the ultimate objectives. Finally, I will mention incentives, since this is how all stakeholders in the fishing sector are included in the process of achieving the ultimate objectives. To illustrate, an example; the balance between available fish resources and fishing capacity is an ultimate objective with some constraints regarding both conservation of fish stock in a sustainable manner and limitations on fishing effort. In this case, the instrument should be to use measures to reduce the fleet capacity, since increasing fish resources can only be done by limiting the human effect on fish resources, fishing. But to be able to reduce the fleet capacity, politicians need to create incentives for the fishermen or fishing

companies, so that it will be possible to reduce the fleet and satisfy the fishermen owing the boats simultaneously.

Below, I have examined the changes made in the CFP in order to distinguish between ultimate objectives, constraints, instruments and incentives used in the CFP.

In 1983, the ultimate objectives were;

- Preservation of fish stocks
- Protection of the marine environment
- Economic viability of the European fishing fleet
- Guarantee of income and employment for fishermen
- Provide consumers with quality food
- Relative stability

The constraints I can identify from these ultimate objectives are;

- Restrictions or constraints tied to preservation of fish stocks, implying limits on fishing to maintain these, in addition to constraints on the methods of fishing to be able to protect the marine environment.
- The ultimate objectives set constraints tied to the restructuring of the fishing fleet, in the sense that fishermen should have a guarantee of income and employment.
- Furthermore, the ultimate objective has constraints tied to the market and the consumers. That the market should be provided with quality food implies a stable supply of fish products that can meet the quality requirements.
- The final ultimate objective sets constraints tied the distribution of quotas and national TACs, which are based on a historical percentage of past fishing activity.

The main instrument used to achieve these objectives was;

- The use of catch management and more specifically the use of TACs and quotas to reduce the fleet capacity in order to achieve the ultimate objective of preserving fish

stocks. The rest of the instruments are tied to the use of TACs and quotas, regarding control of landings and log-books.[93]

The next change was made in 1992, and added the following to the ultimate objectives;

- Balancing the fleet capacity and catch potential.

The constraints tied to this ultimate objective are the limit of fishing effort and the preservation of fish resources.

Following the added objective, the instruments used were;

- Reduction of the fishing fleet, accompanied by structural measures to ease the social impact of reducing the fleet. This is in line with the ultimate objectives and within the constraints.
- In addition, a licensing system was introduced to prevent new vessels from entering the fleet.

The last change to the objectives came in the 2002 reform, and changed the ultimate objectives;

- *"...sustainable use of living aquatic resources from an environmental, economic and social point of view in a balanced manner. Sustainability has to be based on sound scientific advice and on the precautionary principle."*[94]

According to this ultimate objective, none of the three aspects mentioned, environmental, economic and social, can be given less importance than the others. Hence the following instruments were introduced;

- Multi-annual recovery plans for fish stocks already outside safe biological limits, and multi-annual management plans for other stocks, to prevent further overexploitation and reach the balance between fleet capacity and available resources.
- Public aid to the fleet was reorientated in the matter of restricting it to be given only for improving safety and product quality, change to more selective fishing gear to

prevent by-catch or to equip vessels with vessel monitoring systems (VMS) to improve control.

- Structural aid to fishermen affected by the restructuring of the fishing fleet was extended, in addition to aid for early retirement.[95]
- Use of marine protected areas to protect spawning grounds for fish stocks outside safe biological limits.
- The creation of a Community Fisheries Control Agency (CFCA) and the RACs.

Hence, this was the most severe change in the CFP with regards to the instruments implemented to achieve the ultimate objectives.

I will discuss the effects of these changes further in the following part with regards to the fishing fleet, catches, advice from the ICES, environmental factors, compliance with important elements of an ecosystem approach and economic viability.

4.2 CRITICAL EVENTS IN THE COMMON FISHERIES POLICY

In this part I will select and discuss some of the most important events and changes in the CFP and use these as a basis for my analysis of the effects of the measures used under the CFP. Since finding data is a critical factor in being able to compare and analyze the effects of the CFP, I will not give too much importance to the early changes made in the CFP, as the availability of these data are limited. I will therefore start with the review in 1992, followed by the inclusion of Spain and Portugal into the CFP in 1996, the 2002 reform, and finally look at the current situation before the 2012 reform. I have selected these events since these represent the most important and largest changes were made, as mentioned in chapter 4.1, in addition to the crucial factor of the availability of data. Further I will also look at the available information for catches and fleet size, and see if there are other important changes in the data and try to find the reasons for these changes.

4.3 ANALYSIS

I have selected to divide this part into five, starting with an analysis of the EU fishing fleet, followed by catches and the relationship between the ICES advice and the

agreed TAC by the Council, before I look at environmental factors and whether or not the EU has implemented the necessary elements for complying with an ecosystem approach. Finally, I will look at the economic development of the EU fishing fleet.

4.3.1 The EU fishing fleet

This section starts by examining the effects of the changes made under the 1992 review. The most important change in 1992 was the new measures to help downsizing of the fishing fleet. As mentioned in chapter 2.9, new structural measures were introduced to ease the effect of reducing the fleet. To check whether or not these measures had an effect on the fishing fleet, I will look at the period before the review and until the 2002 reform, as such tend to have a gradual implementation. *Figure 3* that follows is based on data from Eurostat (this also applies for the rest of the figures in this section)[96];

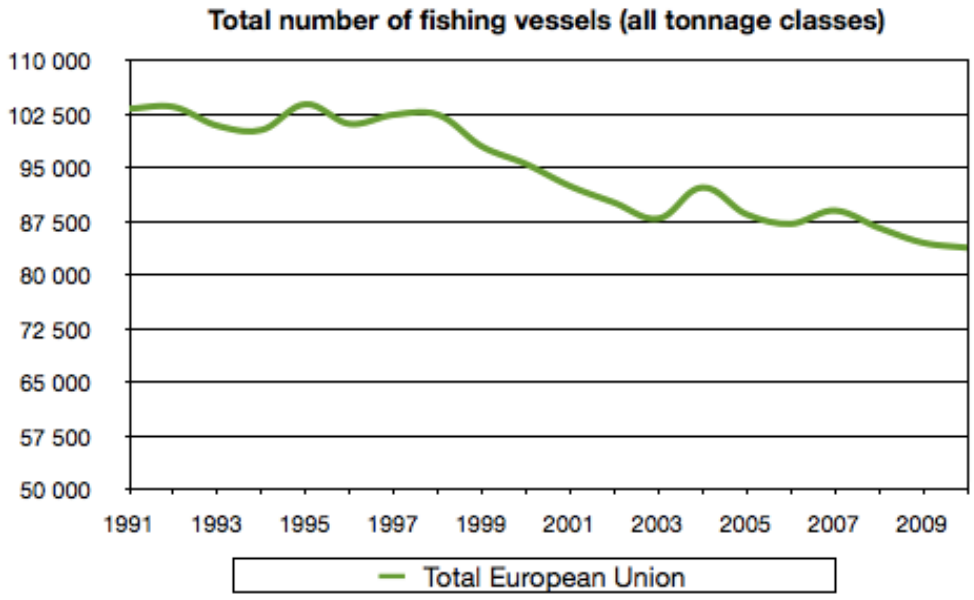

Figure 3: Total number of fishing vessels (all tonnage classes)

The periodic increases we can see around 1995, 2004 and 2007 can be explained by the accession of new member states, which naturally adds new vessels to the fishing fleet. I have selected to exclude the year 1990, as data on all members of the EU for this year is not available. As we can see from *figure 3* above, there is an overall downward sloping trend in the total number of fishing vessels in the EU. After the review in 1992, there is a more rapid decrease, while in 1995 it increases due to the

accession of Finland and Sweden. However, since the accession of Finland and Sweden and until the reform in 2002, there is a reduction by approximately 13 750 vessels, or 13,2 % of the total European Union fishing fleet. Later, the reduction made since the 2002 reform until 2010 amounts to 7 % or 6 300 vessels, half the reduction made between 1995 and 2010. The reform changed the objectives and gave equal importance to economic, environmental and social aspects. The reason why the reduction in number of fishing vessels was lower after the reform may be due to less aid to compensate for decommissioning of vessels. To see which member states contributed to the largest reductions we need to look at each country;

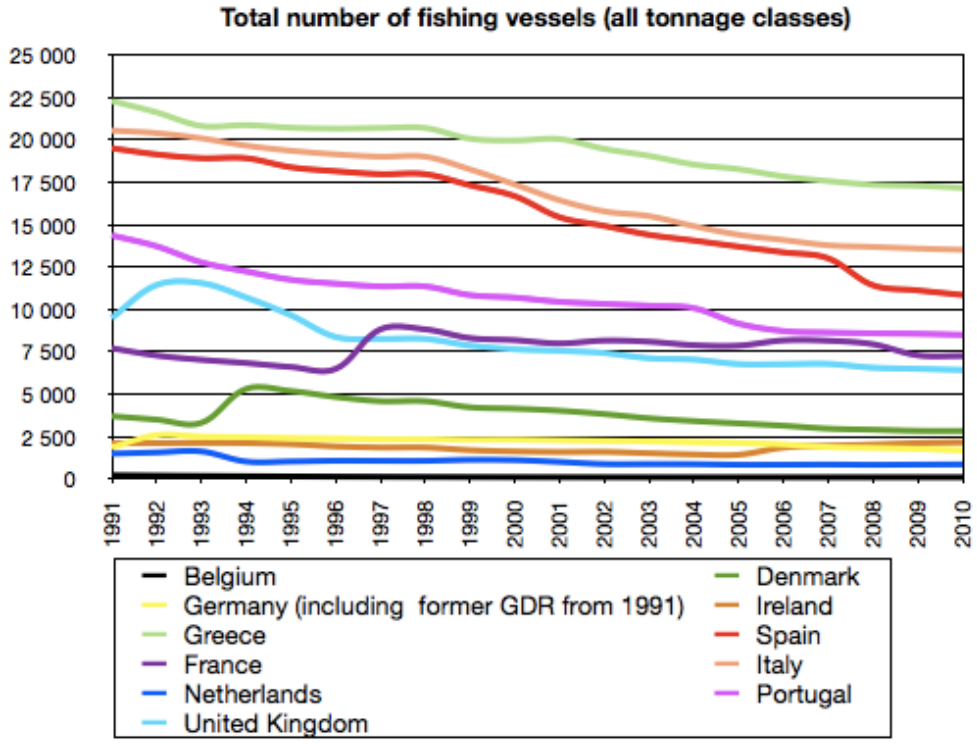

Figure 4: Total number of fishing vessels by member states (all tonnage classes)

From *figure 4* we can see that the five countries with the largest fleets, in terms of numbers; Greece, Italy, Spain, Portugal, and the United Kingdom made the largest reductions after the 1992 review until the reform in 2002, but also in the period after the reform. The reason for these reductions may be due to the fact that Spain and Portugal were not allowed to be part of the CFP until 1996, and hence made the necessary reductions to be accepted as members of the CFP. The continuous reductions made by these countries after the reform may be due to the characteristics

of a larger fleet in terms of number of fishing vessels. Overall, there is a downward sloping trend, but the rest of the countries have not made the same reductions as the five mentioned, and before the reform in 2002 they tend to have a larger fleet than before the 1992 review. What is curious is the sudden increase in the number of fishing vessels in Denmark, which later results in a larger fleet, in terms of number of boats, than before the 1992 review. In addition to this, the UK has the same increase, but before 1992, but contrary to Denmark, they end up with a smaller fleet than before the review. The reason may be a change in the definition of fishing vessels, hence including more boats without discussing this further. In addition to looking at the number of vessels, I will also have a look at the total gross tonnage (GT) and the total power in kilowatt (kW) of the fleet.

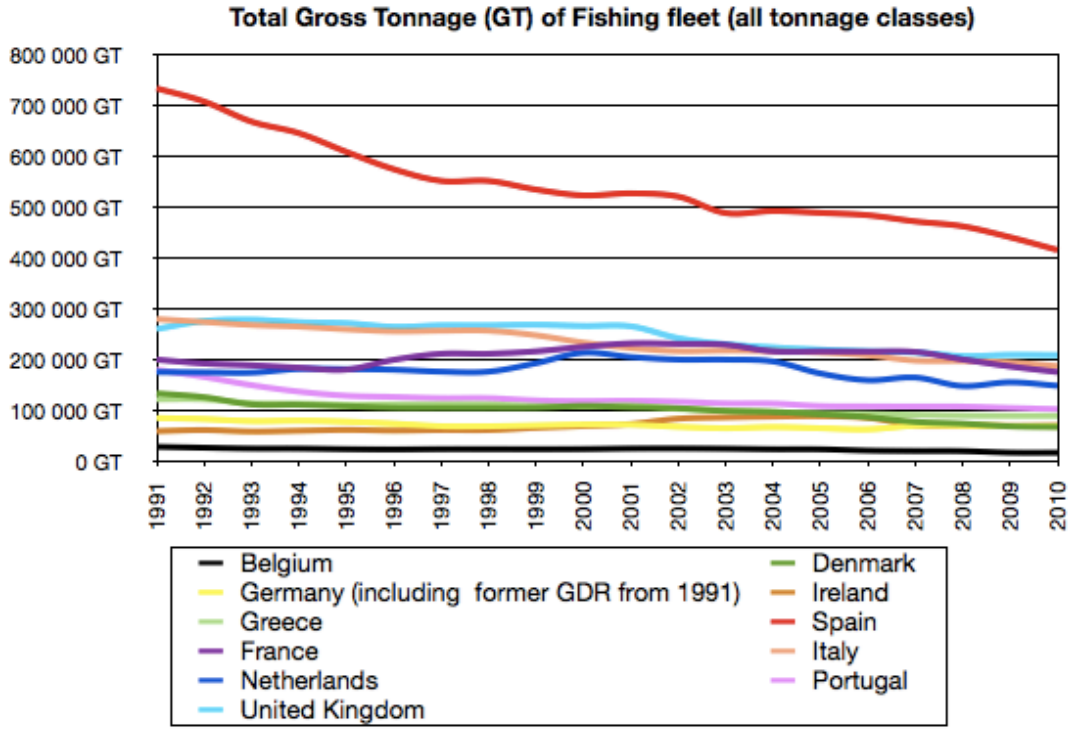

Figure 5: Total Gross Tonnage (GT) of fishing fleet by member states (all tonnage classes)

From *figure 5*, all member states have a relatively stable fleet in terms of total gross tonnage, except for Spain which during the period from 1991 to 1996 has reduced the size of its fleet, in terms of GT, by approximately 200 000 GT. The reason for this drastic reduction by Spain, in terms of tonnage, may be due to the fact that they in 1996 demanded the right to be part of the CFP, and did the necessary restructuring in

order to become fully members and have access to the other member states fishing zones. The reason why the rest of the member states have not reduced their fleet in terms of tonnage, may be due to the removal of small vessels before the larger ones. Still, after 2002, Spain made further reductions in terms of total tonnage, which may be due to its size being double the other member states' fishing fleets. *Figure 6* illustrates the changes in terms of power (kW) of the fishing fleet.

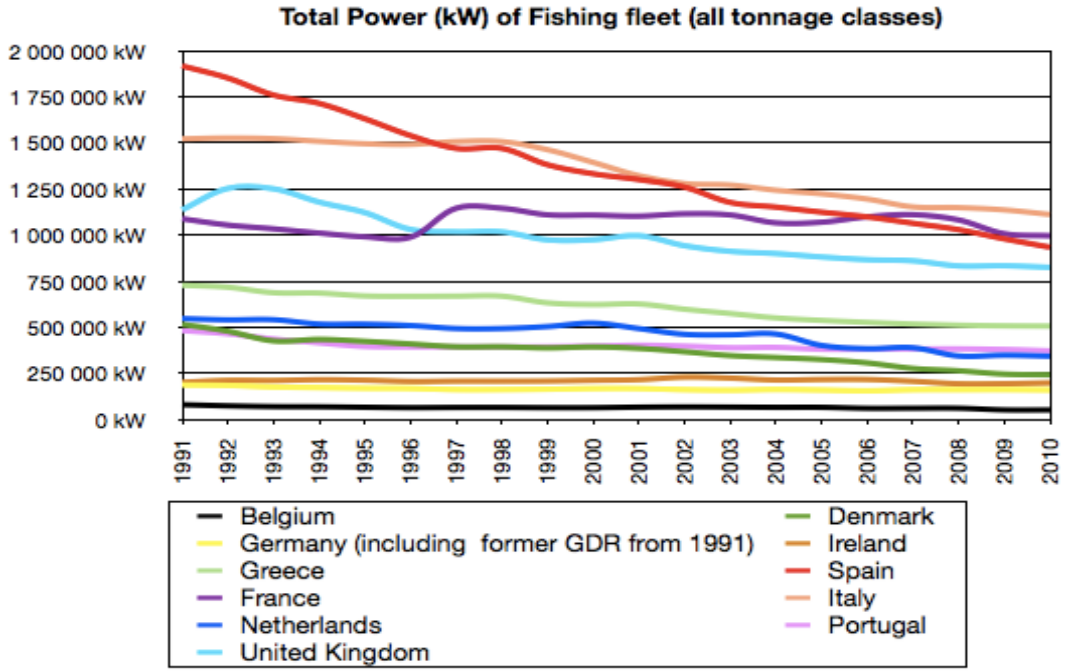

Figure 6: Total Power (kW) of fishing fleet by member states (all tonnage classes)

In terms of power, Spain still comes out with the largest fishing fleet, as well as the largest reductions. But to see whether or not the total reduction has been sufficient, we need to look at the reduction in the number of fishing vessels in relation to the reduction in power and tonnage. To do that I will look at the change in average size of fishing vessels in terms of gross tonnage (GT) and power (kW).

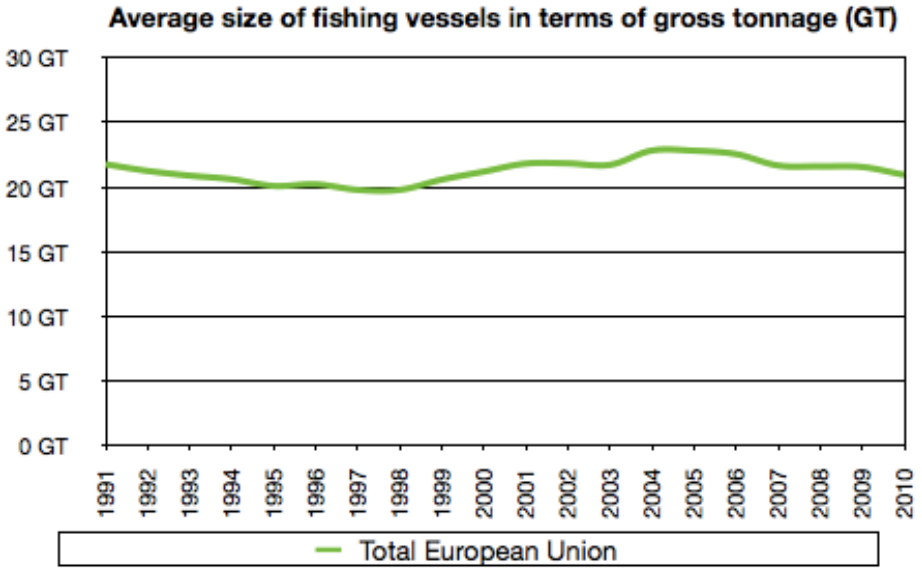

Figure 7: Average size of fishing vessels in terms of GT

If we look at *figure 7* above, we can see that the average size of fishing vessels is more or less stable with only minor changes. We can assume that there is an overall trend of reducing all tonnage classes proportionally, since the average size is quite constant.

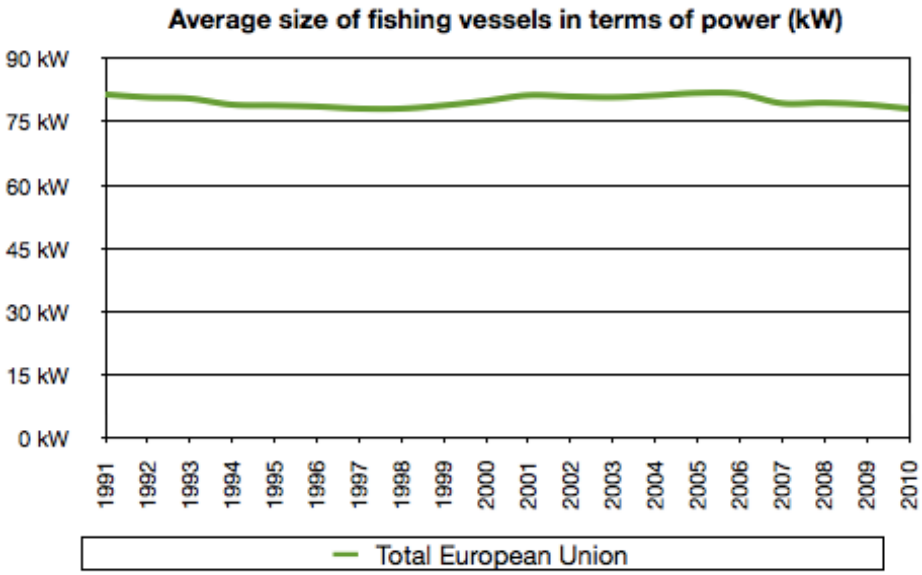

Figure 8: Average size of fishing vessels in terms of power (kW)

The average size of vessels in terms of power from *figure 8* is also quite stable which indicates the same as above regarding gross tonnage. This means that the EU has been able to reduce the fleet capacity, and not changing the characteristics of the fishing

fleet. Therefore the use of effort management, reducing the time allowed at sea, or by reducing the TAC through catch management could have been a more effective way of reducing fleet capacity as the imbalance between fish resources and fleet capacity seems to remain.

4.3.2 Catches, TAC and the ICES advice

In this part I will have a look at data from the ICES to check the development and changes in quotas set for the most important commercial fish stocks in the North Sea, area IV. First, I will illustrate total catches for all fishery products in the EU, starting with the founding members, adding new nations when they became members of the EU. This will often be visible with an increase in total catches (based on numbers from Eurostat)[97];

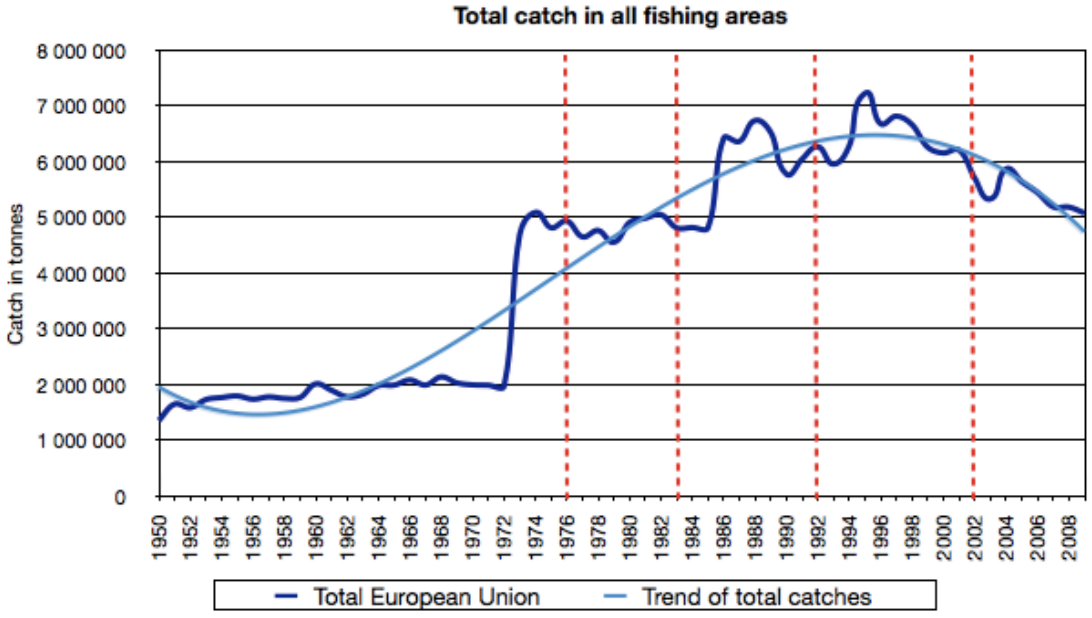

Figure 9: Total catch in all fishing areas by the European Union, including new members

In *figure 9* I have selected to add a polynomial trend line of fourth degree to illustrate the development of the total catches of fish in the EU. In addition, I have marked some of the main events related to the CFP. In 1976 began the formal negotiations of the CFP, and until the formal start in 1983, the catches increased and continued to do so until after the 1992 review. Since then there has been a decreasing trend in catches. However, it is important to keep in mind that some of the increases are due to accession of new member states, like the significant increase in 1973, when Denmark,

Ireland, and the United Kingdom became members of the EU, and later in 1986 when Portugal and Spain joined. This does only illustrate the overall picture of total catches, and not the possible effects of changes made in the CFP, mainly in 1992 and 2002. Hence it makes more sense to have a look at the development of catches regarding the EU-15, consisting of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom (also based on numbers from Eurostat, endnote 97);

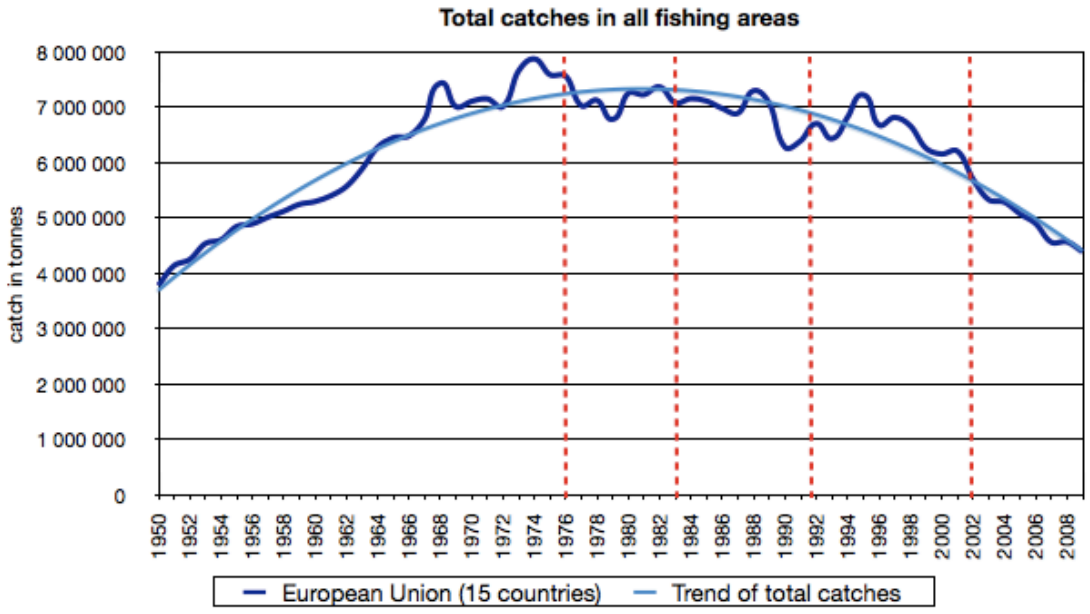

Figure 10: Total catch in all fishing areas by the European Union (EU15; first 15 member states)

Figure 10 shows another picture of increasing catches until the start of the 1980s, followed by decreasing catches during the lifetime of the CFP. However it is difficult to conclude whether or not this is due to lack of fish resources or measures used as part of a precautionary approach to the CFP.

To check whether or not these changes have had an impact on catches, indicating an adjustment in the TAC set for each fish stock, I will concentrate on the main important fish stocks in the North Sea (area IV), and look for changes in catches, quotas and other measures used under the CFP.

The species I have selected to check for are chosen with regards to available information and data from the ICES and Eurostat, and are mainly used for human

consumption; cod, haddock, herring, plaice, sole, and whiting. I will start by looking at some of the advice given by the ICES regarding these fish stocks. The advice given by the ICES is mainly connected with the 2002 reform. Since the catches began to decrease after 1995, it may be due to other reasons than only new measures introduced to create a balance between fishing capacity and available fish resources. Therefore, I will start by looking at the advice given by the ICES in 2004, and later check for effects in catches before and after this advice was given.

The ICES stressed the agreement made by the EU and Norway in 1999, on a long-term management plan for cod to reduce fishing within safe biological limits, had not been effectively implemented.

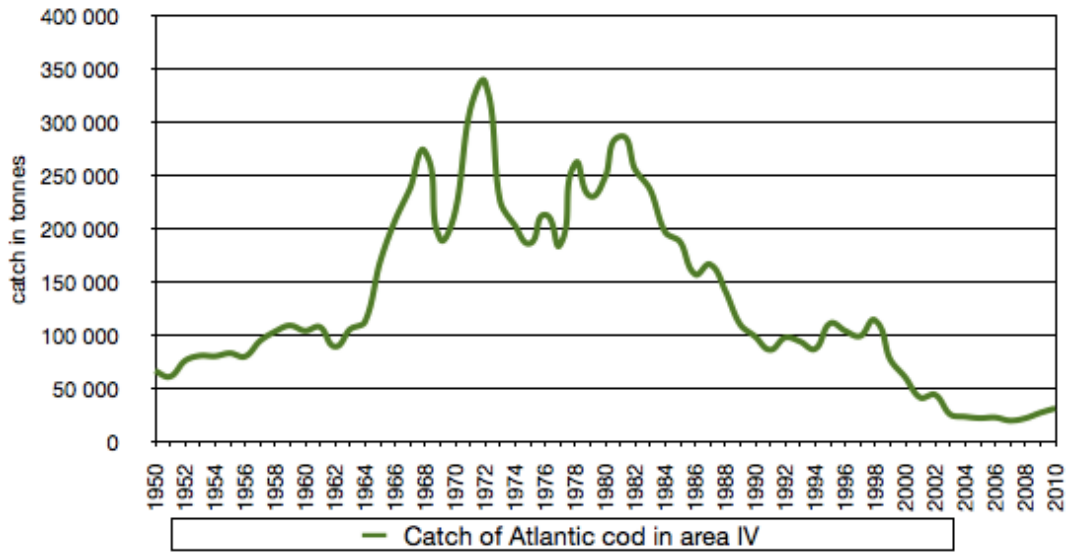

Figure 11: Catch of Atlantic cod in area IV (the North Sea)

From *figure 11*, the catch statistics on cod from the ICES above (in addition to the following figures on total catches in this section)[98], we can see that the catch of cod was rapidly increasing during the 1960s and until the beginning of the 1970s. This diagram includes catches from all actors fishing in the North Sea registered by the ICES and is based on data used in Eurostat. The countries included in the statistics are Belgium, Denmark, Faeroe Islands, France, Germany, Greenland, Iceland, Ireland, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, the United Kingdom, Scotland, and the Union of Soviet Socialist Republics (USSR), later Russia. If we look at the diagram above, we can see that around the official start of the CFP in

1983, the catch of Atlantic cod in area IV has been decreasing down to a level lower than in 1950. It seems unlikely that the only reason for this relatively rapid decrease is solely due to the precautionary approach selected by the EU. Another possibility may be the fact that catches first started to decline as a result of lower productivity of the fish stock because of overfishing. This is what the ICES stressed in their 2004 report, stating that the reproductive capacity of the stock was reduced due to unsustainable harvesting of the cod stock in the North Sea.[99]

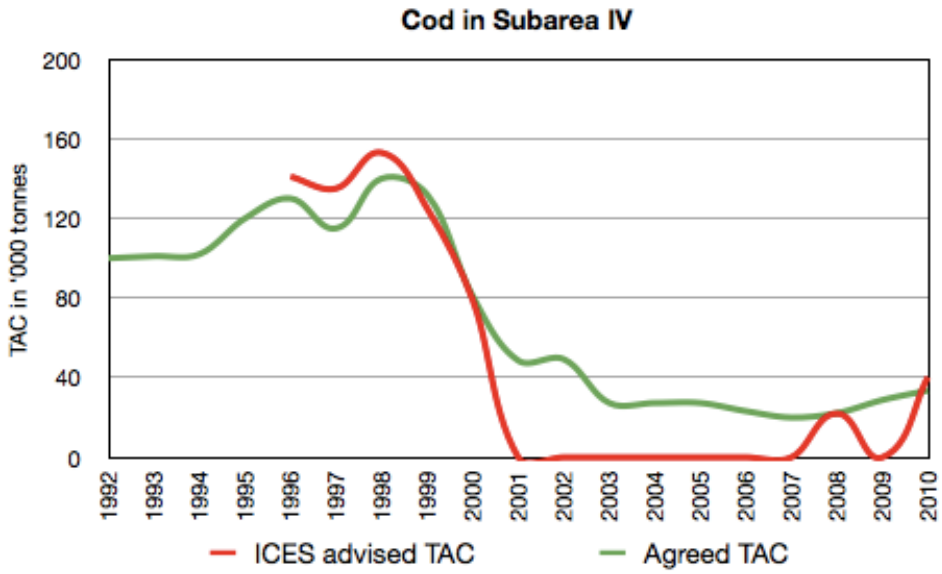

Figure 12: the ICES advised and agreed TAC of cod in area IV

By looking at the relationship between the advised and agreed TAC in *figure 12*, the reductions made by the EU in setting a TAC complies with the advice from the ICES until 2000. The EU did not follow the advice on closing the cod fishery in 2003, and they even increased the TAC from 2001 to 2002, when the ICES recommended a lowest possible catch. Nonetheless, we cannot conclude that the only reason for lower catches of cod in the North Sea is that the EU failed to follow advice given by the ICES.

The reduction in the stock of Atlantic cod may be caused by other factors than solely the indication of overfishing. Climate change is a hot topic, but how can it be affecting fish stocks? The change in ocean temperatures and changing currents can have significant effect on fish stocks, and a negative correlation between ocean

temperatures and catch of Atlantic cod in the North Sea has been proven[100], as shown in *figure 13* below;

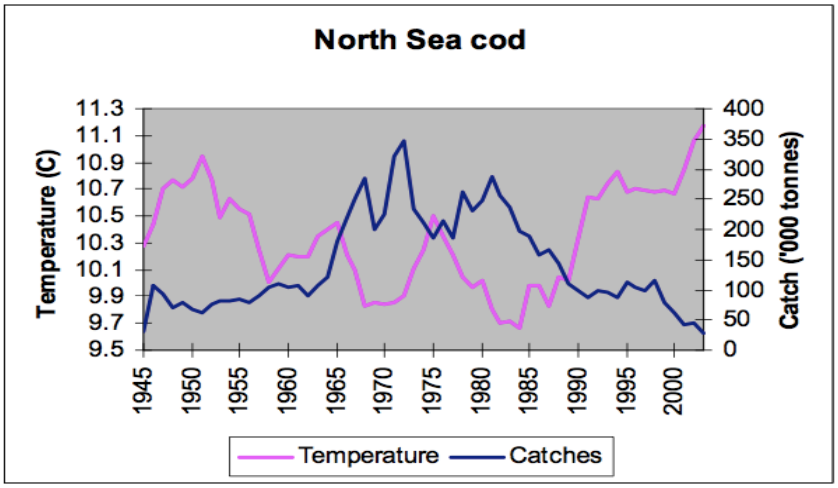

Figure 13: Correlation between temperature and catches of North Sea cod

Therefore, it is appropriate to examine other fish stocks before concluding that overfishing alone is causing reductions in fish stocks. However, the combination of increasing ocean temperatures and that the EU has been unable to counteract the overcapacity of the EU fishing fleet, and the lack of sufficient measures to reduce the fishing mortality on certain vulnerable stocks have had a negative impact on fish stocks. In 2003, the ICES advised closure of the cod fishery in area IV, and we can see a reduction of catches in *figure 11*. However, a low TAC of 27 300 tonnes was set by the European Council, not following the advice by the ICES. Not even the following year the TAC was set to zero, even though the advice from the ICES was zero catches.[101] This indicates the importance of scientific advice, but even more importantly, that decision-makers listen to and follow advice given. Hence the reduction in catches may be caused by the lack of fish resources rather than measures taken as part of the precautionary approach.

Another example is European plaice fished in area IV;

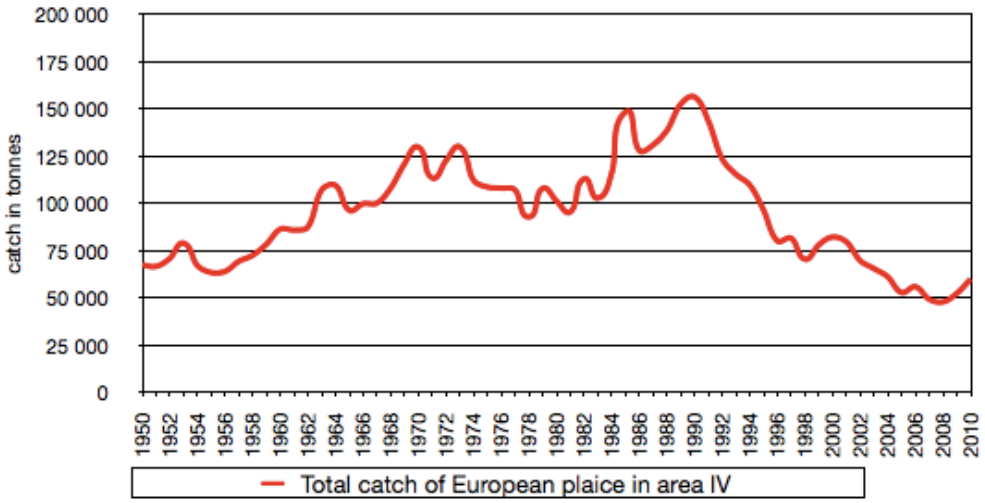

Figure 14: the ICES advised and agreed TAC of cod in area IV

From *figure 14* we can see a positive trend in catches until the beginning of the 1990s, followed by a reduction in catches.

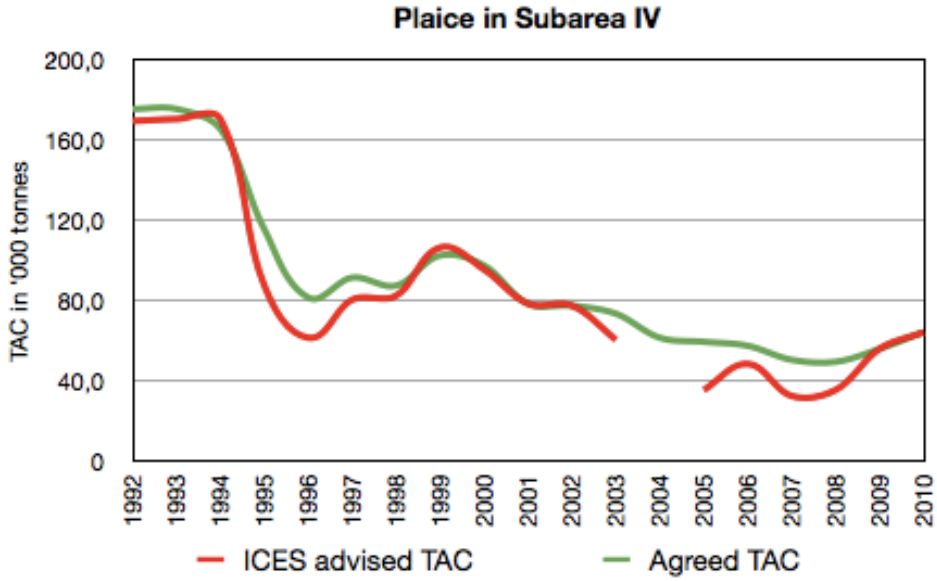

Figure 15: the ICES advised and agreed TAC of plaice in area IV

If we look at the advice given by the ICES[102] in *figure 15*, they advised an increasing TAC until 1994, while the European Council agreed on the advised TAC or a higher TAC. This is also the case in the years after 1994, even though the ICES advised on a lower TAC.[103] In 2004 the ICES recommended a recovery plan for European plaice,

which only led to minor reductions in the agreed TAC, higher than what advised by the ICES.

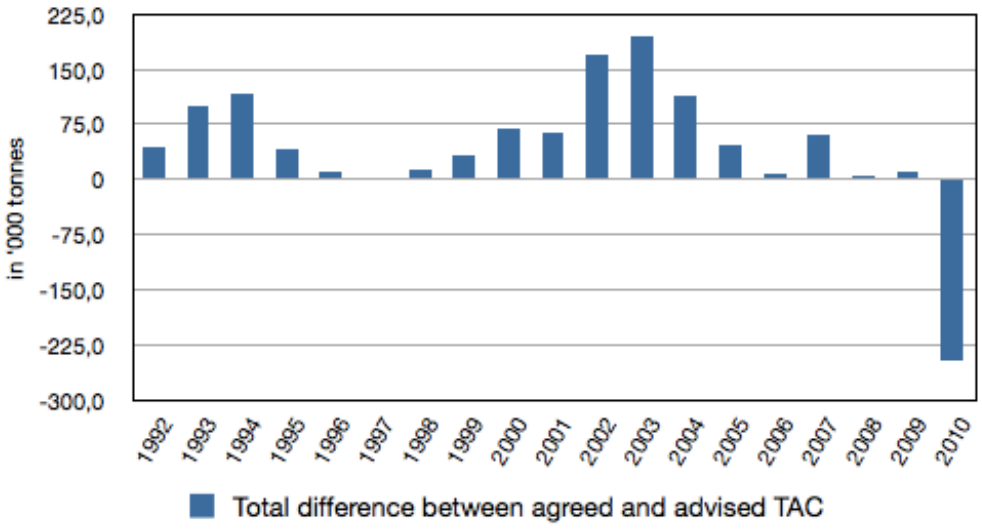

Figure 16: Total difference between the ICES advised and agreed TAC in area IV

If we have an overall look at the difference between the ICES advised TAC and the agreed TAC on by the European Council on cod, haddock[104], herring[105], horse mackerel[106], nephrops[107], Norway pout[108], plaice[109], saithe[110], sole[111], sprat[112] and whiting[113] in *figure 16*, we see that the general trend is a higher agreed TAC than what is advised by the ICES. We should take into account that this figure may be misleading; however it does illustrate an overall picture of the relationship between ICES advice and agreed TAC. A summary of total catches of other fish stocks in the North Sea and the relationship between ICES advice and agreed TAC can be found in Appendix 5.1. In some cases as in *figure 29*, TAC and advice from the ICES on sole in area IV are relatively equal with only minor differences. However, the overall trend is that the agreed TAC by the Council tend to be higher than the ICES advice, and in case of coherence, the agreed TAC seems to be lagging some years behind the ICES advice, as shown in *figure 12* and *15*, in addition to *figure 25* and *31* for haddock and whiting. Furthermore, all catches are at a lower level in 2010 than in 1950, indicating that the increase in catches in the time between have had a negative effect on fish stocks, reducing their reproductive capacity, as shown in *figure 24, 26* and *28,* in addition to *figure 11* and *14*.

From the two examples we can see a tendency of the Council not following the scientific advice given until the fish stock is in serious danger of reducing productivity. But before we can conclude that the reason for reductions in fish resources is due to higher TACs than advised by the ICES, we have to look at other factors that might be affecting fish stocks. Environmental factors, like climate change, may affect all fish stocks in some way, and not only the negative correlation between ocean temperature and cod in the North Sea.

4.3.3 Environmental factors

Reductions in overall catches are a fact, and more fish stocks have been proven to be overfished. This is illustrated by the map from the European Environmental Agency (EEA) regarding the number of stocks within and outside biological safe limits[114];

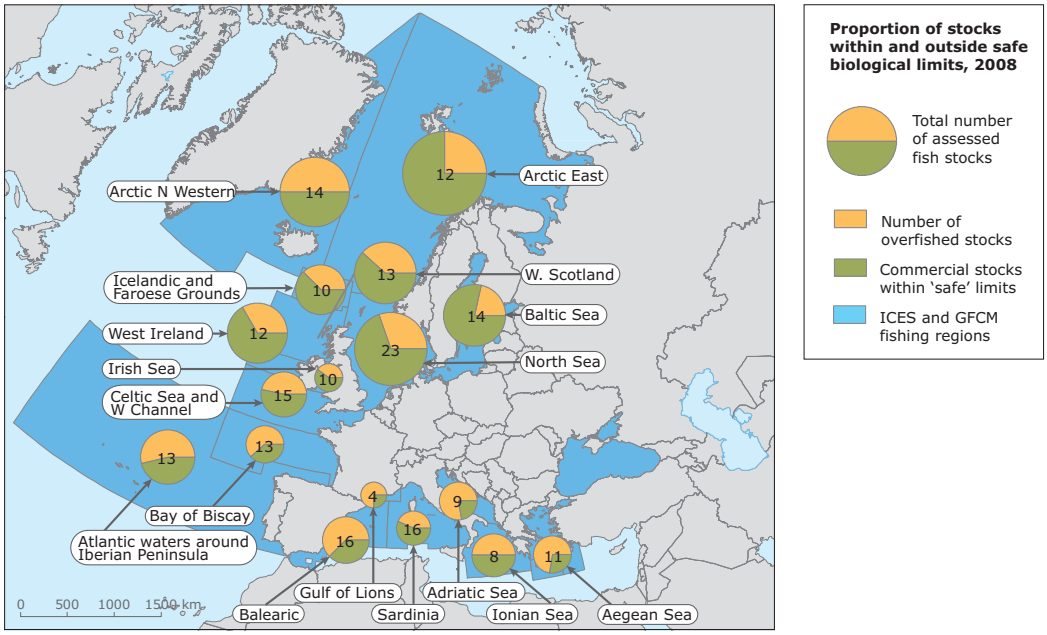

Figure 17: Proportion of stocks within and outside safe biological limits, 2008

From *figure 17* we can see that the North Sea is the region with the largest amount of assessed fish stocks, hence the scientific advice given on stocks in this region is closer to the real situation. However, still there are fish stocks exposed to the risk of reduced productivity due to overfishing, approximately 27% of assessed fish stocks in area IV. Hence I will check if environmental factors can affect fish stocks, and not the fishing pressure alone. The main climate parameters affecting the ocean are temperature, which I mentioned in the previous section, turbulence and light conditions.

Turbulence changes with the wind, hence affects drifting organisms like plankton, which is also affected by currents. Light conditions affects the production of plankton, more light increases the availability of plankton. However, the most important parameters are temperature and ocean currents, since fish stocks are dependent on ocean currents for the movement of larvae from spawning grounds to nursery grounds.[115] If currents change due to climate changes, fish stocks need to find new spawning grounds which can have severe effects on fish stocks. In addition to currents, the ocean temperature can also affect fish stocks, as illustrated with cod. Temperature is important because it affects all the elements of an ecosystem, hence affects fish stocks indirectly in the sense of the availability of food and directly regarding productivity.

In the North Sea, temperature has been rising and was 1-2 °C higher than normal in 2007. To what extent this has been affecting the main fish stocks in the North Sea is difficult to determine, however, we cannot exclude climate change as an important element needed to study closer. Reduced catches can be due to lower productivity caused by a combination of increasing temperature and overfishing. The latter is subject to discussion as the definition of overfishing itself may be shifted and adjusted over time and is not constant. If the target objective on preserving a fish stock has been changed, taking into account climate change, a fish stock can be classified has overfished if the TAC is not adjusted to meet the new objective.

Environmental factors will not be discussed in further depth, as it is a rather comprehensive area which is outside the scope of this thesis. They are only mentioned as a possible element affecting marine ecosystems in relation to fishing.

4.3.4 Analysis of the ecosystem approach under the CFP

The list of important elements for a successful ecosystem approach according to the FAO is long[116], hence I will select the elements I regard as most important, and where the CFP has not introduced necessary measures to comply with an ecosystem approach.

The selected elements are:

- Management objectives are societal choices
- Decentralization of decision and action to a local level, in addition to a higher level of coordination
- Balance between available fish resources and fishing capacity
- Transparency, public awareness and consensus building
- Effective mechanisms for conflict resolution and enforcement
- Decision making based on scientific advice
- Short- and long-term management objectives
- Ensure both human and ecosystem well-being
- Prevent overcapacity, IUU, by-catch and discards

And are discussed in more detailed below.

The first element discussed deals with the objectives of the CFP. The FAO says *"...that management objectives are a matter of societal choice."*[117] With regards to this element, the societal choice means that it depends on the European society to make a decision regarding the objectives in the CFP, including all stakeholders such as member states, fishermen, the fishing industry, regions dependent on fishing and consumers. The main objectives include economic, environmental and social aspects, and stress the point of equal importance of all aspects. This may be the point where the CFP has failed, since the objectives may be perceived as unclear to certain stakeholders.

The second element is decentralization of decision and action to a local level, at the same time as the actions and decisions taken are consistent and coordinated at a higher level. In this sense, the creation of the Regional Advisory Councils (RACs) in the 2002 reform decentralized part of the decision making, but only in agreement with the higher level, meaning the European Commission or the Council. The involvement

of local fishermen and other stakeholders in the RACs has led to further decentralization. However, whether the voice of the stakeholders involved in the RACs is heard is another question. For the decentralization to be effective, the inclusion of all stakeholders is crucial, in addition to the communication between the RACs, the Commission, the European Parliament and the Council.

The next element includes the importance of matching the boundaries of the fleet capacity and the fish resources. This is even stated as part of the objectives of the CFP, and should therefore be part of the management. Hence the measures introduced should be set to comply with the objectives. However, this is not necessarily the case, as the analysis above has illustrated. The reasons for this are several and I will come back to some of them when discussing the following elements.

"Introduce measures to ensure transparency, public awareness and consensus building."[118] This element includes involvement of the public and the availability of information. Today, it is easy to access information regarding statistics, policies and regulations. This is an important element when introducing new measures to comply with the ecosystem approach to fisheries management, since to be able to effectively change the CFP, the involvement of all stakeholders is crucial. Everybody needs to understand the content of the objectives set for the CFP, hence the translation of the ultimate objectives of the CFP into more operational objectives is important.

Another important element is the establishment of more effective mechanisms for conflict resolution and enforcement. This has been one of the main problems with the CFP since its creation in 1983. The problem is that all the changes proposed by the Commission have not effectively been implemented due to the fact that the European Parliament and the Council is more aware of each member states' interest than the common interest of a common fisheries policy. To change this, a proposition of more power to the Commission can be a more effective way of managing the CFP.

Furthermore, the FAO stresses the importance of scientific advice in decision making. This is an element the EU has not been able to carry out, which is reflected in the mismatch between the advised TACs by the ICES and the agreed TACs in the Council. The agreed TACs reflect the difficulties of forgetting about the individual

member states' interest and setting a TAC that could result in a better basis for an economic sustainable fishing industry.

The next step is to introduce both short and long term management objectives. This element has been implemented by introducing multi-annual recovery plans as well as management plans. But an important aspect regarding this element is the annual decision on TACs, which is discussed at the end of December by the Council. Therefore, the multi-annual management plans are failing to secure fishermen with stability and knowledge regarding future catches and also resulting in setting a higher TAC due to pressure from each member state.

As mentioned earlier, the objectives giving equal importance to economic, environmental and social aspects should also *"...ensure both human and ecosystem well-being and equitable allocation of benefits, as a condition for compliance."*[119] This indicates the crucial element of balancing fleet capacity with available fish resources, in addition to distribute the TACs and structural aid fairly among the member states. I concluded earlier that this is an element of the ecosystem approach to fisheries management where the CFP has not been able to fulfill. This has also resulted in the lack of managing the CFP in an economic context. To manage the CFP in an economic context implies a reduction of market distortions that have a negative impact on biological diversity, which means e.g. the balance between fleet capacity and available resources. Furthermore, it should also create incentives for fishermen to comply with the objectives regarding conservation and sustainable use of fish resources. It is clear that overcapacity of the fishing fleet has led to overfishing, which has resulted in a reduction of the productive capacity of fish stocks, lower catches and increased costs due to more effort used to catch the agreed TAC.

The last element regards overcapacity and IUU, in addition to by-catch and discards. This is tied to the previous element and stresses the importance of taking uncertainty and lack of information about fish stocks into account. Hence collecting information on discards and by-catch are important elements in setting appropriate TACs and measures to maintain a sustainable use of the resources. In this sense mixed fishery management is also important to account for fish getting caught as by-catch. The

statistics on by-catch and discards should be included to be better able to determine the status of each fish stock. Again, this stresses the importance of the ICES and the advice they are giving the EU.

From this analysis I conclude that the CFP has not yet been able to satisfy the necessary elements of an ecosystem approach to fisheries management. However, this analysis is based on the past and not on the current reform of the CFP. In the Commission staff working document *"A Diagnosis of the EU fisheries sector"*, the Commission recognizes most of these deficiencies, and proposes necessary changes to adjust the CFP to the ecosystem approach.

4.3.4 Brief economic analysis of the EU fisheries

To have a further look at the development of the EU fishery I will have a look at the economic development of the sector. In the working document of the European Commission, they stress the economic importance of the fishery sector in relation to certain regions, while the overall economic importance of this sector is decreasing. To illustrate this, the total gross value added of fisheries by the EU in 2005 represents 0.1 % of the total gross domestic product (GDP) of the EU. However, in some coastal regions the value added amounts to more than 2 % of the regional GDP. The most important fishing nations in the EU are France, Spain, Italy, and the United Kingdom. Together they account for 62 % of the total income generated by the fishery sector in the EU. The total value added generated by the catching sector in the EU amounted to 3.9 billion € in 2005.[120]

Another important aspect of the economy is employment, and this makes the fishing industry more important than when looking only at the value added to the GDP. Since 1996 the number of fishermen has decreased by 4 to 5 % annually. In the period between 1997 and 2005, total employment in the fishing sector in the EU-15 decreased by approximately 31 %, while it dropped by 44 % in Spain. Spain is therefore the country which has made the largest reductions regarding the fishing fleet and employment.[121] In the 2010 Annual Economic Report on the European Fishing Fleet from the OECD, they write that the main reason for these reductions is reduced fishing opportunities.[122] If we have a look at the profitability of the Spanish fleet,

there seems to be a trend of negative operating cash flow (OCF), however, the lack of submitted data by Spain makes it difficult to determine the actual profit.

The Danish fleet, however, had a positive OCF in the period from 2002-2008, but seems to make a loss, which is a result of increased operating costs, e.g. that the price of fuel increased in 2008. Regarding 2009 and 2010, the gross value added seems to be decreasing further due to lower TACs for the most commercial fish stocks, and if prices do not change, this will have a negative impact on the value of landings.

The profit of the total EU fleet is impossible to determine due to missing data from some important member states such as Spain, Ireland and Greece. Therefore, the data for profitability of the EU fleet excludes these three countries; however, we can see an indication of decreasing or increasing profitability. The gross value added amounts to 2.1 billion € in 2008, and the OCF amounts to approximately 1 billion €. This is a decrease of approximately 23% and 8% respectively from 2007. If we have a closer look at the profitability, we can see from *figure 18* below that there is a decreasing trend[123];

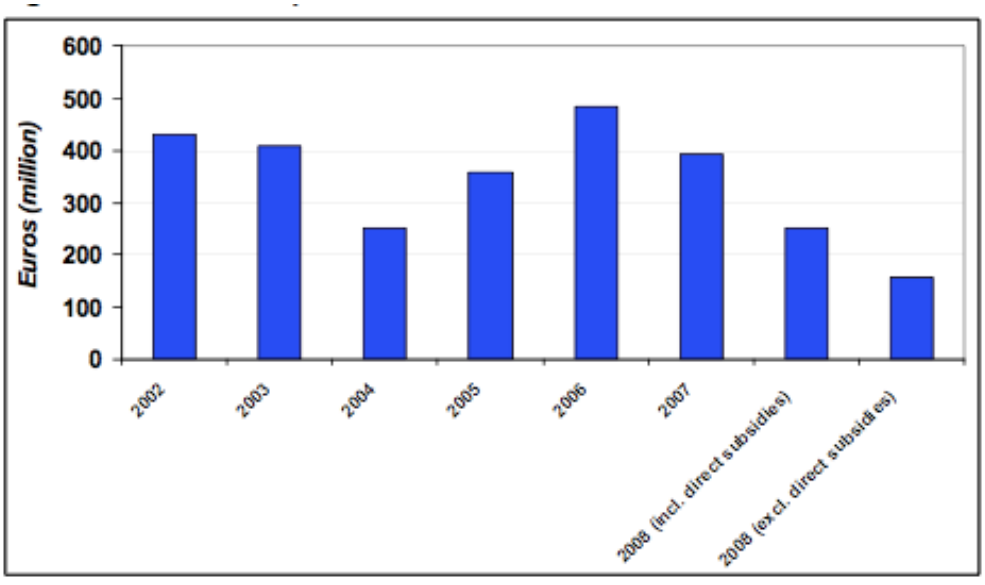

Figure 18: The European Union fleet profits

The data used in *figure 18* excludes Greece, Ireland, Latvia, Portugal (including Madeira and the Azores) and Spain. Predictions for 2009 and 2010 show further reductions in TACs, reducing the fishing opportunities for certain important

commercial stocks. This will again affect employment and possible earnings of the EU fishing fleet.

4.4 COMPARING WITH NORWAY

In this section I will compare the CFP in the EU with the fisheries policy in Norway, since Norway is the largest fishing nation regarding catches and exporting 95% of total production of fish products.[124] *Figure 19* below illustrates the development in quantities of fishing and size of the fishing fleet[125];

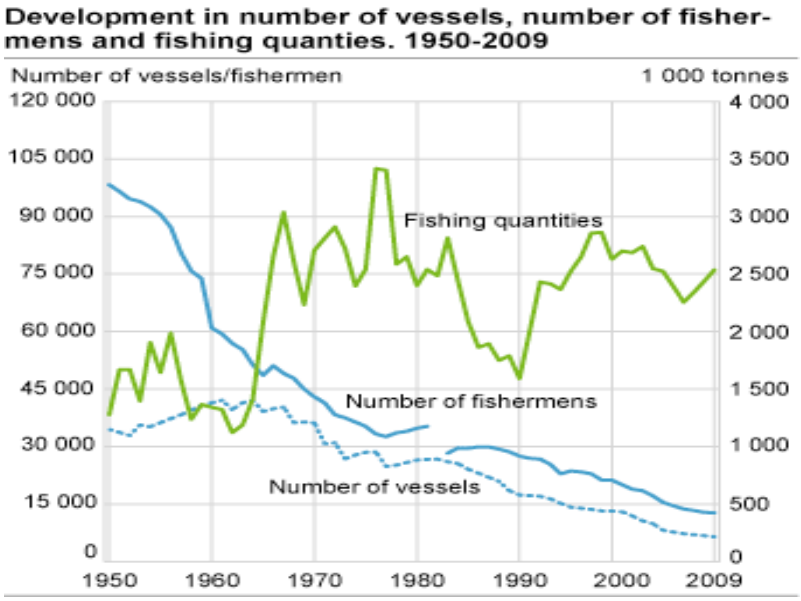

Figure 19: Development in number of vessels, number of fishermen and fishing quantities.

Norway has followed the general trend in reducing the number of fishing vessels since the 1950s until 2009, while catches have increased. Since Norway shares many important commercial stocks in the North Sea with the EU, they are experiencing the same problems with reduced catches. The most important fish stocks Norway share with the EU are cod, haddock, whiting, saithe, plaice, herring and mackerel, some of which are mentioned in the analysis, section 4.3.2.

The most important difference between the EU and Norway comes to the restructuring of the fishing fleet. In terms of number of fishing vessels they have both reduced the fleet substantially, while in terms of power and gross tonnage, the trend in Norway differs from the EU[126];

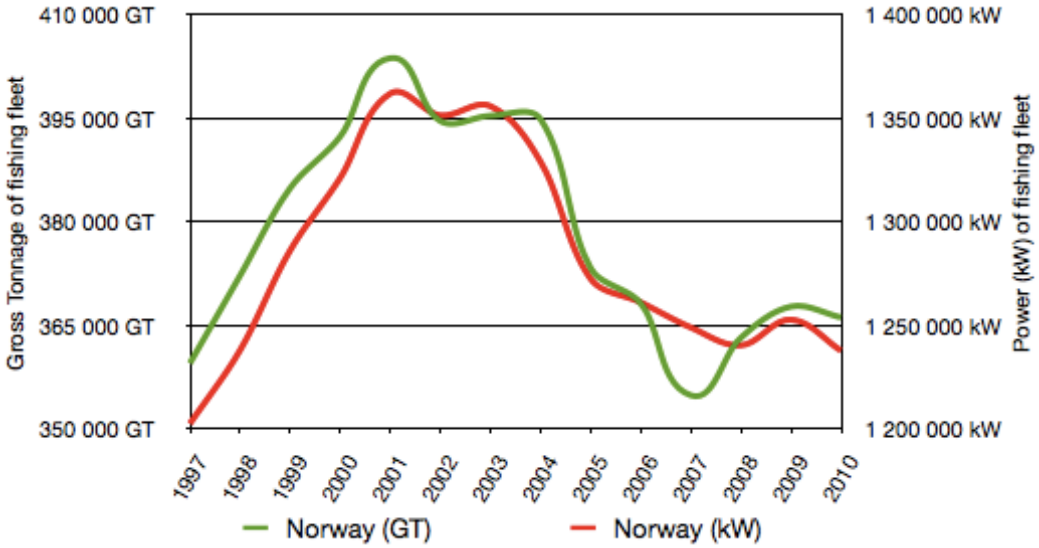

Figure 20: Total gross tonnage and power of the Norwegian fishing fleet

From *figure 20* above, we can see that the total gross tonnage and power increased until 2001, while it decreased until 2010, ending with a slightly larger fishing fleet compared to 1997. This is also reflected by increasing trend in average gross tonnage and power as shown in *figure 21* and *22*[127].

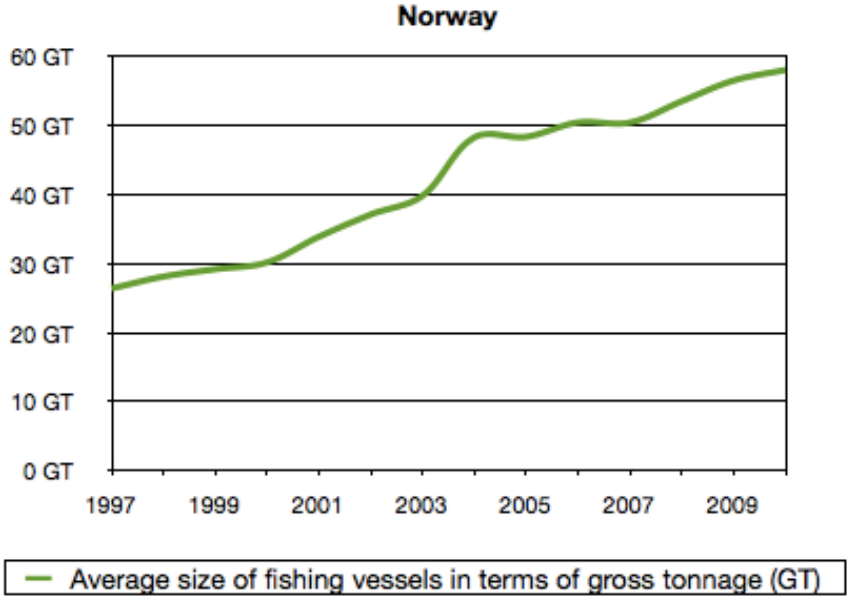

Figure 21: Average size of fishing vessels in terms of GT

Figure 21 shows that Norway has not effectively reduced their fleet capacity in terms of average gross tonnage of fishing vessels. They have actually increased their capacity from an average of approximately 26 GT to 58 GT, which is more than twice the capacity in terms of gross tonnage per vessel.

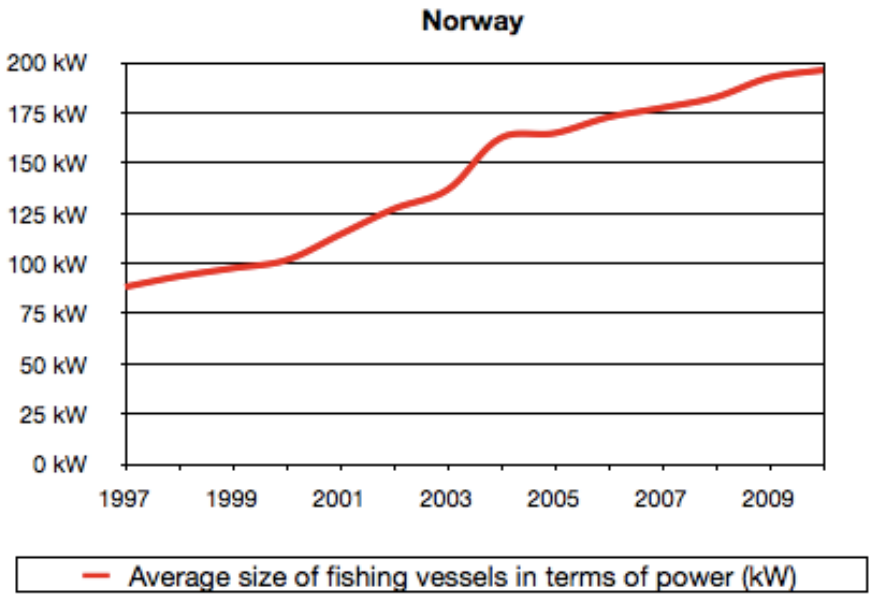

Figure 22: Average size of fishing vessels in terms of power (kW)

In terms of power, *figure 22*, we have the same case as with GT, indicating a doubling of individual vessel capacity in terms of power and gross tonnage. To explain this development, we need to look at the history of the fleet, which has changed dramatically after World War II. The Norwegian fleet earlier consisted of smaller vessels operating mainly in the coastal area of Norway. Through government buybacks and retirement of licenses while at the same time preventing accession of new vessels through the system of licenses this changed, making the fleet larger in terms of average GT and power, and changing part of the fishery from the coastal area to the high seas.[128] This is reflected in the total catch by Norway in *figure 23* below[129];

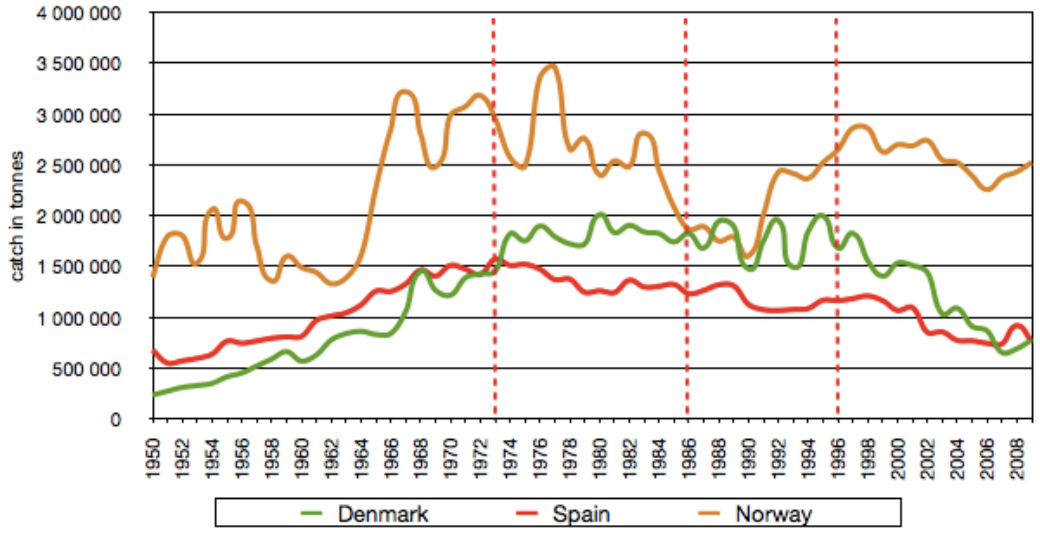

Figure 23: Total catch in tonnes by Denmark, Norway and Spain

As we can see from *figure 23*, there is a remarkable increase in catches from the 1950s to the mid 1960s. The increase is more gradual in Spain and Denmark, indicated by an initially larger fishing fleet in terms of number of vessels, GT and power compared to Norway. The last point I will mention in relation to Norway is the different characteristics in terms of population and the distance between decision making and fishermen. Before Norway discovered oil in the 1960s, the fishing sector was an important part of the economy, contributing with approximately 2-5 % of gross national product (GNP). Today, the same contribution is less than 1%.

The main objectives of the fisheries policy in Norway is *"...sustainable harvesting, multi-species approach, adequate regulations and an efficient control and enforcement scheme."*[130] This differs from the objectives of the CFP, since they do not specify the need for control in the overall objective. In addition, there is a problem in specifying who should be controlling the fisheries under the CFP, the member states or a common independent organization. In comparison with the member states of the EU, Norway has a large fisheries administration, in order to enforce the regulatory system. Hence it is easier for Norway to regulate and introduce necessary measures to deal with changes, e.g. the closing off certain areas if catches contain large amount of small fish or by-catch leading to discards.[131]

The last important point that distinguishes the Norwegian fisheries policy from the EU is the use of transferable quotas. It is permitted to trade quota allocation with

other fishing vessels within the regulatory group (11-15 meters, 15-21 m, 21-28 m, larger than 28 m, purse seiners and trawlers) and keep a part of it, where an upper limit applies, for 20 years. After this period the quota reverts to the common pool for the vessel group. In addition, regarding the purse seine fleet, there is a 40 % loss of transferring the quota from north to south, while only 5 % the other way. Transferable quotas makes the Norwegian fleet able to restructuring the fishing fleet to consisting of fewer boats that can be better utilized and are capable of handling the natural fluctuations of fish stocks in the Norwegian Sea, the North Sea and the Barents Sea, in comparison with the EU fishing fleet.

4.5 CONCLUDING REMARKS

The main indication, rather than conclusion, I can make from the analysis is that the Common Fisheries Policy in the EU has not been able to manage the fisheries. The reasons for this indication are mainly linked to fleet capacity, the availability of resources, scientific advice, decision-making, control, management and enforcement.

The first is linked to managing the balance between fleet capacity and available fish resources. Since the Commission has identified that the fishing fleet is oversized, the use of efficient effort and catch management could have reduced the fleet capacity further. On this point management has failed to enforce necessary measures to balance fleet capacity with available fish resources. This is linked to the next point of following scientific advice.

The advice given by the ICES on TACs and measures is crucial in order to maintain the balance. Since the decision taken by the Council is not always in line with the scientific advice, which contributes to further imbalance between fleet and resources. The Green Paper by the Commission underlines many important problems with the CFP and proposes changes to better be able to manage the fisheries. However, the source of the problem, as I see it, is the Council and the European Parliament being the decision-maker regarding quotas and the change to be made in the CFP. Hence, the crucial point from my analysis is distribution of management, decision-making, control and enforcement, which has pointed me in the direction of the Council. The main problem may seem to be the mismatch between available fish resources and

fleet capacity, but this is rather a result of the main problem. The main reason why the CFP has been unable to manage the fisheries is therefore decision-making, and the individual interests of the member states in the Council when deciding on quotas and the European Parliament regarding changes to be implemented.

In addition, it seems that the objectives of the CFP have been well written but not translated into how to comply with these goals. Therefore, the current reform is necessary due to failures in the past reforms regarding implementation of necessary instruments to meet the objectives.

4.5.1 The Future of the CFP

Regarding the future of the CFP, it depends on the current reform and what kind of changes will be decided on by the European Parliament and implemented by the Commission and the member states. In a presentation video, the Commission states that the main challenge is *"...the imbalance; too few fish in the sea and too many fishing boats on the sea."*[132] Hence the objective of the reform is to reestablish plentiful stocks, a growing fishing industry and sustainable fishing. Furthermore, they will achieve this by the absolute rule of maximum sustainable yield, indicating what is explained in chapter 3.3. However, fishing at this level would imply that quotas are based on scientific advice that takes into account environmental fluctuations affecting the size and availability of fish resources. The Commission says that multi-annual plans will become the priority method to enable more stocks to achieve the maximum sustainable yield. To this point these plans have only been used for some stocks.

In addition to reducing the fishing pressure, the Commission proposes that discards of by-catch should be gradually banned. However, this will be a first priority for commercial stocks, and not other fish stocks taken as by-catch.

Regarding the problem with too many fishing boats on the sea, the suggestion is to introduce the system of transferable catch or effort quotas. This will be similar to the system of individual transferable quotas, in the sense that quotas could be grouped together on fewer vessels. This would make the fishing fleet more flexible and more suitable to meet the challenges of fluctuating stocks and variable catches, in addition to reducing the total number of fishing vessels operating on the sea, and increasing the

possible profitability by reducing costs. However, as the Commission is aware, it will be important to avoid a concentration of ownership, and this will be done by not making the quotas for fishing vessels less than 12 meter long with passive fishing gear transferable. Since a lot of coastal regions throughout Europe are dependent on fishing, this will maintain the economic viability of these regions. In this sense the policy will be divided into two parts, one for small vessels operating in coastal areas and another for large scale industrial fishing. The Commission stresses the importance of separation between these two parts, since the characteristics are quite different for small and large scale fishing.

Another important part of the reform, and as mentioned as one of the failures of the former CFP, is the distribution of decision-making should be decentralized and include all stakeholders in the fishing sector in the process of decision-making. The European Union will therefore limit its power, and only set the overall objectives and schedules of the CFP, while measures to achieve the objectives will be decided by member states, involving fishermen in a system of co-management. By involving all levels in the fishing sector, fishermen will be given greater incentives to comply with new measures since they have been part of the process. This includes the importance of the RACs, which could be a possible platform for regional decisions, including management of shared stocks, while more national stocks or coastal fishing could be regulated by each member state, in compliance with ultimate objectives.

If all these changes are agreed upon in the European Parliament by the member states, the future for the CFP looks brighter. However, the reform implies substantial changes, and the history and ability to change of the CFP might limit the possibility of a positive development of the fishing sector in the EU. In addition, the financial crisis has also affected this already struggling sector, further pressuring and limiting the scope of actions. This could also be a potential force in restructuring the sector, as e.g. Germany could set demands for changes if they are to help the member states struggling the most.

4.5.2 Concluding summary

To make a short summary of the main points from the previous conclusion I will start by referring to my main question; *How has the development of the Common Fisheries Policy (CFP) in the European Union (EU) changed since it began?* The main change is measures to help the downsizing of the fishing fleet. In addition, the objectives have been changed and specified to meet the new challenges occurring from accession of new member states and a downward trend in available fish resources.

Furthermore, I included three additional questions;

What are the effects of the changes made in the CFP and are these coherent with the objectives of the CFP?

What are the reasons for the changes and the current reform of the CFP?

How is the fisheries management in Norway compared to fisheries management in the EU?

The first, whether or not the changes made are coherent with the objectives, can be discussed, but overall the intention of the changes made were coherent with the objectives. However, they failed to fully fulfill the objectives and only partly completed the wanted effect. The conclusion is that in principle the changes were coherent, but not sufficient to complete the objectives.

Secondly, the reasons for the changes made through the history of the CFP are mainly due to accession of new member states, in addition to more available scientific data making the imbalance between fishing capacity and available fish resources clearer, which is the main reason for the 2012 reform. Furthermore, the economic development of the European fisheries also indicates a need for change.

Finally, it seems that the new reform will make the CFP more similar to the fisheries management in Norway. The different ways of management may be due to different characteristics of fisheries in the EU and Norway. Furthermore, the development of a more similar way of managing fisheries may be due to the sharing of fish resources

and that scientific advice has made it clear that cooperation is needed to preserve the future of European fisheries.

5. APPENDIX

5.1 Catch, advised and agreed TAC in area IV

Total catch of haddock in area IV, the North Sea[133], and agreed TAC and advised TAC by the ICES[134];

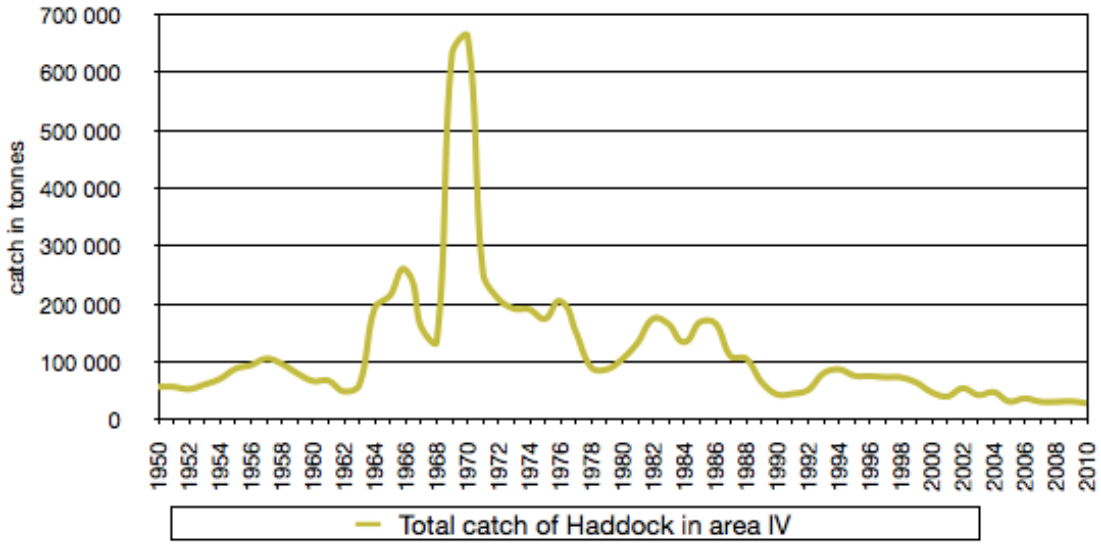

Figure 24: Total catch of haddock in area IV

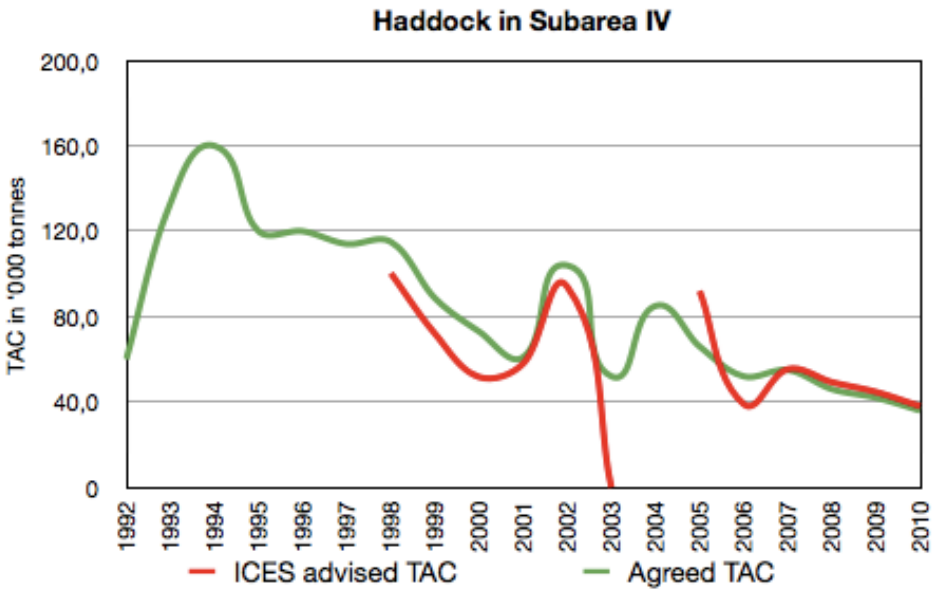

Figure 25: the ICES advised and agreed TAC of haddock in area IV

Total catch of Atlantic herring in area IV, the North Sea[135], and agreed TAC and advised TAC by the ICES[136];

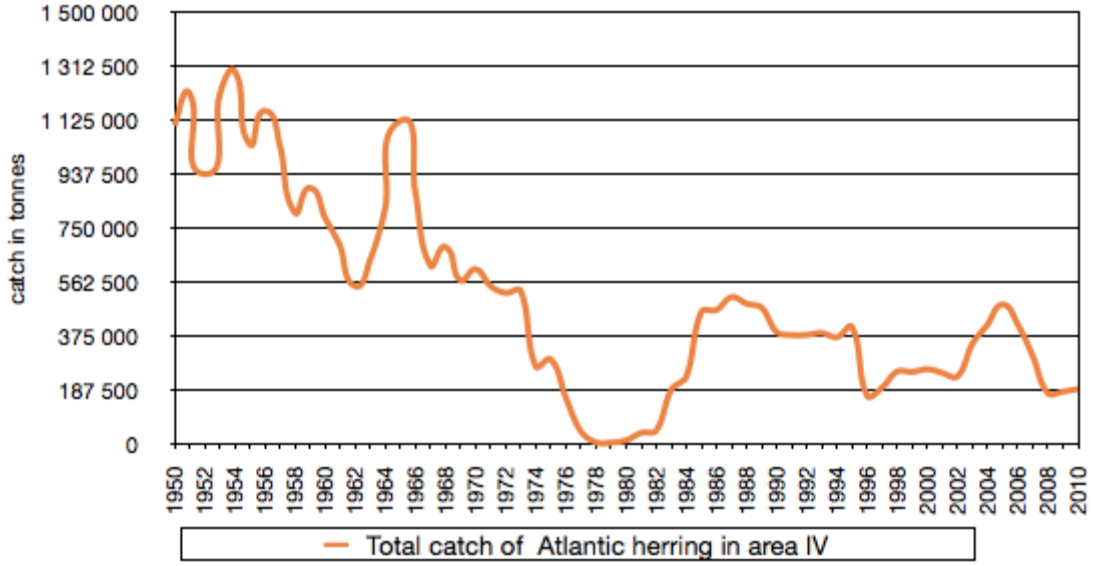

Figure 26: Total catch of Atlantic herring in area IV

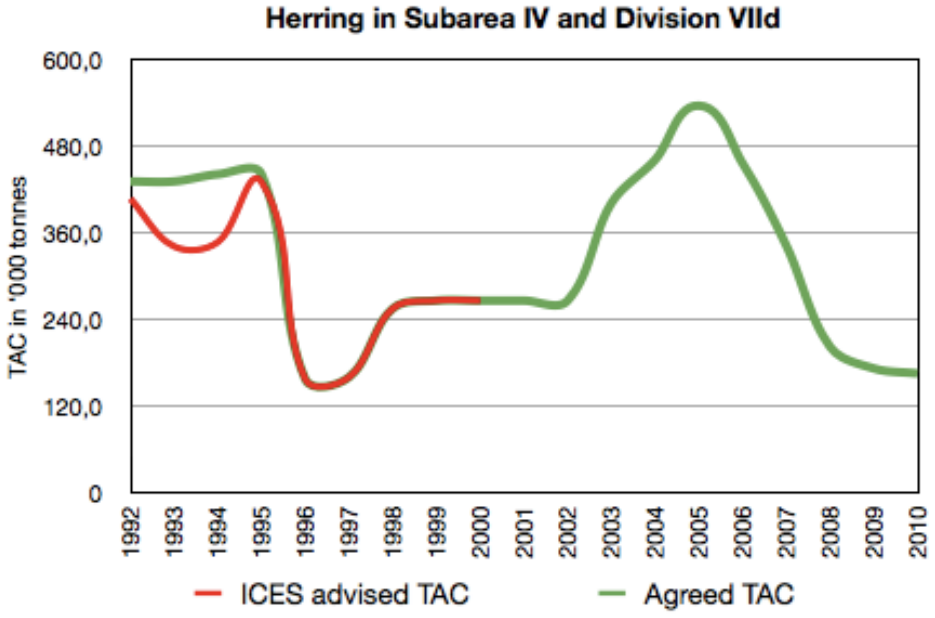

Figure 27: the ICES advised and agreed TAC of herring in area IV

Total catch of sole in area IV, the North Sea[137], and agreed TAC and advised TAC by the ICES[138];

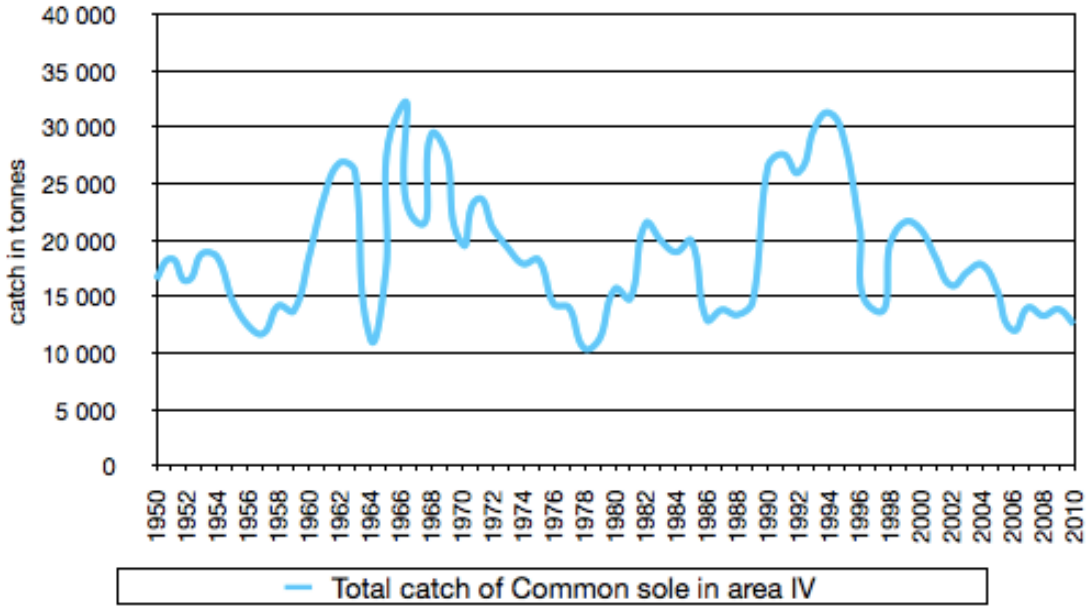

Figure 28: Total catch of common sole in area IV

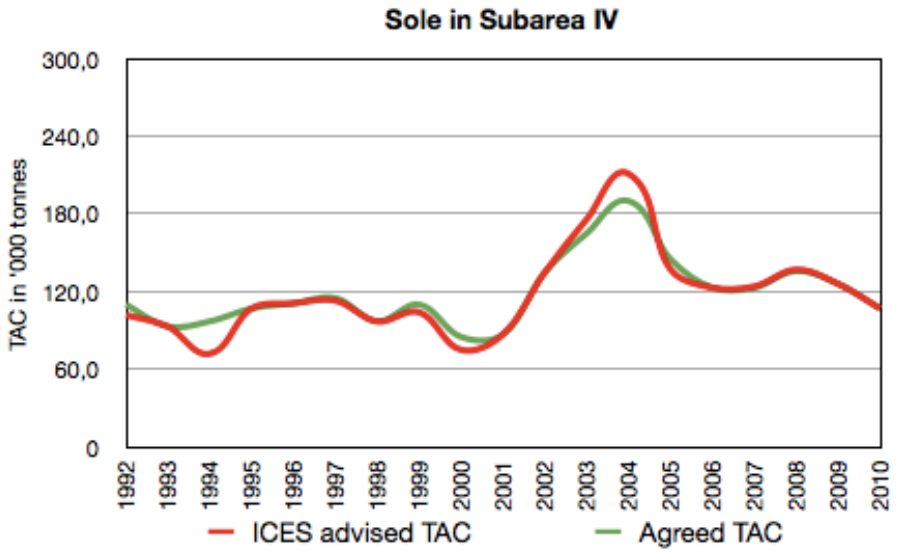

Figure 29: the ICES advised and agreed TAC of sole in area IV

Total catch of whiting in area IV, the North Sea[139], and agreed TAC and advised TAC by the ICES[140];

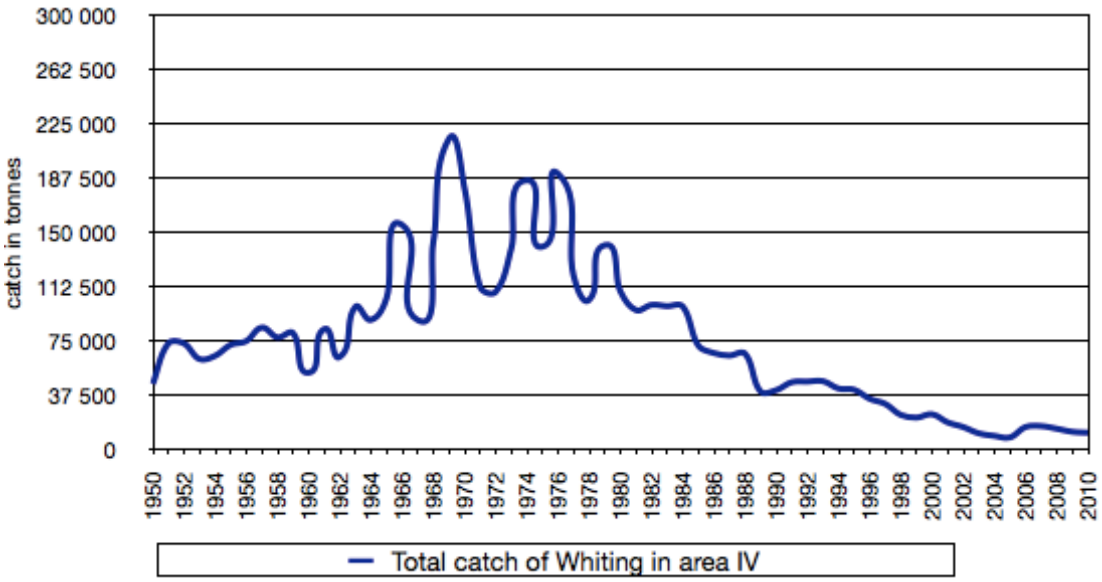

Figure 30: Total catch of whiting in area IV

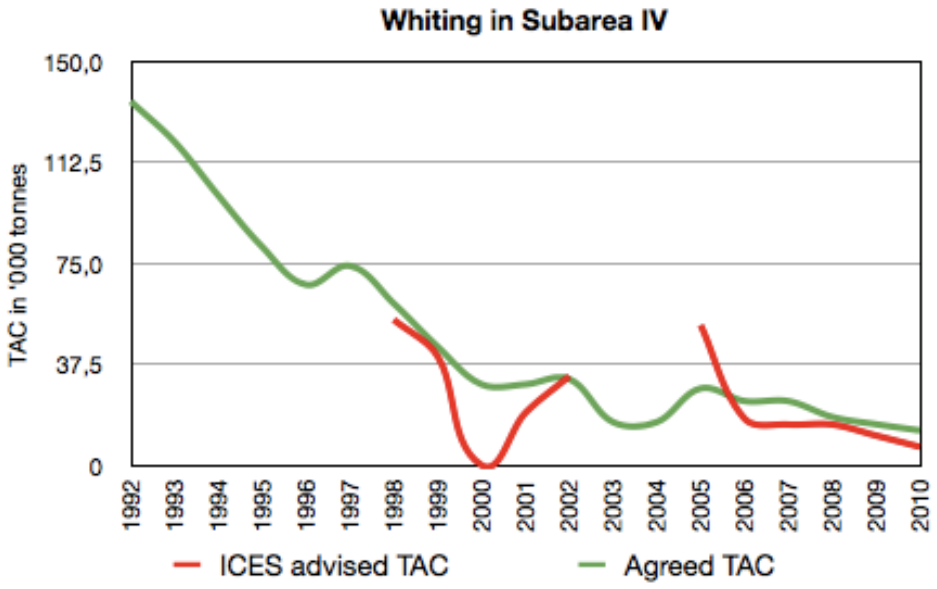

Figure 31: the ICES advised and agreed TAC of whiting in area IV

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