

Bachelor of Arts Thesis in European Studies

**The Implementation of the
Marine Strategy Framework Directive in Germany**

To what extent is the Marine Strategy Framework Directive
implemented in Germany?

By

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1. Introduction

For more than thousands of years, the oceans have fascinated mankind. Jacques Yves Cousteau one of the most important marine biologist, once said that: “The Sea, once it casts its spell, holds one in its net of wonder forever” (Cousteau, n/a). When one thinks about the ocean, one thinks about colorful coral reefs with rich diversity of species and about gigantic mammals such as the Great White which glide through the water with sheer grace despite their size. Oceans cover a total amount of 71% of the world’s surface and even the European Union is covered by four major seas and two oceans: the Mediterranean, Black Sea, Baltic Sea, North Sea and the North Atlantic and Arctic Ocean. The ocean is in our days not only just a mystery that fascinates us and leads us to dreaming about distant adventures, pirates and heroes but also functions as contributor to economic prosperity, social wellbeing and quality of live though it is a very sensitive and precious marine environment. They are essential for the survival of mankind. Still, people believe that through its sheer size, the oceans and seas have an inexhaustible amount of natural resources with an infinite regeneration possibility. This is a misbelieve, through the growing influence of men on the eco system ocean, through fishing, pollution and global warming, the eco system is changed which leads and has already led to the decrease and extermination of important and very sensitive live forms without which the ocean is driven out of its natural balance. Oceans and seas belong to the living spaces of the earth, which are used intensively and at the same time poorly protected. The rising sea levels aroused through global warming led to a change in weather conditions and new forms of threats to the life on earth, already leaving its marks on the world’s surface. Those drastic changes do not make a halt before German oceans and Seas. German oceans and seas have a high amount of utilization which superposes the protection of the oceans and seas. Those factors are the rising transport section, fishing and the extraction of crude oil and natural gas, as well as the rising sector of off-shore wind energy. The exploration of crude oil and natural gas are one of the most dangerous human actions, as we could witness in April 2010 with the explosion of the drilling platform ‘Deep Water Horizon’ in the Gulf of Mexico. Such catastrophes underline the immediate danger in front of European coast, as this could happen any time in European waters. As we can see through the example of the ‘Deep Water Horizon’, oceans on the one hand hold a ban over human beings beyond imagination but on the other hand they are not treated with the respect

they deserve. Another quote of Jacques Yves Cousteau was: “Water and air, the two essential fluids on which all life depends, have become global garbage cans” (Cousteau, N/A). Therefore there needs to be a balance between the economical use of the oceans and seas and the protection of its Eigen-value. Within this project, the newest EU environmental protection policy – the Marine Strategy Framework Directive (MSFD) – will be analyzed, in relation to its transformation process in Germany. As EU marine environmental protection is a brought topic in all 27 EU member states, the scope needed to be smaller. Therefore Germany has been selected as the member state to be analyzed, as it is one of the most active countries in this sector, through its participation within marine environmental protection from the beginning on. Through history, Germany has initiated several regional conferences on the topic and has as the first member state made the first contribution to the Natura 2000 network. The MSFD provides the ecological pillar of the new Integrated Maritime Policy, established by the European Commission in 2007 for developing a coherent framework of coordination and cooperation of marine environmental protection between member states and third countries. For reaching the goal of good environmental status by 2020, the MSFD sets concrete deadlines for attaining certain objectives which are necessary for the final achievement. One of these deadlines is the 15 July 2010; the thesis will focus on this deadline as it is the first stop on the implementation process in which member states need to have taken action. As the two main marine ecosystems in Germany are the North and Baltic Sea, it will be paid special attention to the development that has been reached through the years in those areas. Through the years there have been various policies in marine environmental protection, from the Water Framework Directive, Habitat and Birds Directive to the OSPAR and the Baltic Sea Action Plan designed by the HELCOM with which Germany has acquired a leading role in marine environmental protection. All those new policies have an influence on the German marine environment and provide the necessary platform for the Marine Strategy Framework Directive to be implemented into German national law.

The research question to which this paper is constructed, will study the extent to which the MSFD has already been transferred into national environmental law in Germany, “To what extend is the Marine Strategy Framework Directive implemented in Germany in 2010?” To answer this question the thesis will firstly outline the background of EU marine environmental protection and will explain what problem the MSFD addresses. The second part of the thesis

will focus on the role of the MSFD within EU marine environmental protection. This section of the thesis will explain the MSFD in detail, as well as the Integrated Maritime Policy (IMP) under which the MSFD works and build the environmental pillar of EU marine environmental protection. It will give insight into the construction of the Marine Strategy Framework Directive, its implementation guidelines, timetables and its objectives and approaches. The third part will finally focus on the case of Germany and its position within EU marine environmental protection. It will outline the national marine strategy developed by Germany which outlines the approaches taken by Germany for the implementation of the MSFD, as well as the assessment of the current situation in German oceans and what could already be achieved.

2. The Problem of Marine Environmental Protection

The marine environment is a responsibility for everyone here on this earth and it has a whole range of habitats, species and landscapes. Such are located within the near shore coastal zone far into the deep water and they all provide different varieties of biological diversity. Through history, the marine environment has been a central part of people's lives. It has been a linchpin for trade, employment and amusement, this has not changed over the years, except the fact that it has gotten more and more commercial and a collective action problem for all countries.

Through the years of extensive use of the oceans resources, the marine environment has become more and more under pressure due to human actions just like overfishing, pollution, the modification of marine habitats, oil pollution or climate change. This is where marine environmental protection sets in, to hinder such threats to further exploit and destroy the marine environment. If the exploitation of



Source: Die künftige Meerespolitik der EU

the oceans and seas is not reduced, the marine environment will not be able to survive the greed of mankind and will not be able to provide humans with its natural resources.

The world oceans cover an amount of 3/4 of the earth surface and hence build the largest connected ecosystem on earth. This area is of vital importance for all being on earth, not only for mankind but also for all other live forms on this planet. 70% of the world population and about 60% of the Europeans live in coastal areas that mainly rely on the economical, ecological and social use of the maritime environment (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit; 2007). The European Union is the worldwide leading country in the maritime economical sector in particular in the domain, maritime traffic, shipbuilding techniques, coast tourism, (renewable) offshore energy and maritime services. Furthermore 40% of the European GDP comes from the coastal areas (European Commission; 2006;p.7). Still, the European citizens are not completely informed about the importance of their oceans and seas. It is commonly believed that the oceans and seas possess an undying amount of resources. However, it has become clear that the numbers of fishes that have once populated and dominated our oceans have decreased immensely during the years some of them have even been exterminated. Due to overfishing and new developed fishing methods, very important fish stocks like the red tuna and cod fish have reached historical low levels and some of them have been completely erased. Through the diminished numbers of important target fish, also non-target fish species are endangered such as the seal or the seabird, as they depend on the availability of these fish species. Further new fishery technology endangers the coastal habitats as well as marine habitat like the maerl beds and *Posidonia* seagrass beds and deep sea reefs such as trawling. This is a commonly known problem in the European Union as this especially affects the North Sea where most of the fish come from. Right next to overfishing there are five other major threats that bring pressure upon the oceans and seas, alien species, modifications of natural habitats, pollution, oil pollution and the most dangerous one, climate change. Alien species are introduced to the oceans by accident. Those species are genetically modified and may carry diseases which are then transferred to the original species. As the alien species are genetically modified, they are resistant to the disease but the species out in the ocean are not and are therefore extremely vulnerable for infection. If this happens, it can easily be that complete fish stocks are erased. Due to the catastrophic influence of such organisms in the natural ecosystem, environmental protection needs to be applied to avoid such happenings and thereby protect marine biodiversity. Also human activities along the coast and even offshore have an impact on the marine environment and therefore create pressure. One example of such an activity would be the modification of natural habitats of

marine species, with modifications, the construction of ports and harbors is meant as well as tourism and offshore oil and wind power installations. They often result in the direct destruction of marine habitats through massive and extensive demands for marine services and goods. As a second result of human activities, industrial and urban discharges as well as emissions pollute the oceans. Substances that may contain various hazardous substances are discharged into the ocean. Those can disrupt the biological process of marine species and even interfere with the ecological food chain. Many of the substances that pollute the oceans come from agriculture and its nutrients but most of the emissions come from the shipping industry. According to Greenpeace, the percentage of emissions coming from the shipping industry has been highly underestimated. Ships have the potential to be the most clean and ecological mode of transportation but currently, 4.5% of worldwide emissions come from shipping (Greenpeace, 2008). They are responsible for far more emissions than air traffic in the European Union airspace. Further Greenpeace states that the shipping sector emissions have a rising tendency and will be about 30% higher in 2020 (Greenpeace, 2008). Oil pollution is one of the most dangerous threats to the ocean. However, it is believed that most of the oil pollution results out of a spectacular oil slick which in reality comes from routine operations, leaks from coastal installations, harbor tanker terminals and coastal transport pipelines. The damage that is caused though such pollution, mostly along the coastline is highly costly and takes a long time period to recover from the damage. The most dangerous and unpredictable threat to the ocean is the all present challenge, climate change. It is so unpredictable as the extent, to which it influences the marine environment is not yet completely known and understood. Still we notice them more and more each day. What is known today is that the consequences can range from the rise of sea levels to the strength and transport of water capacity of oceans currents. This also incorporates heavy rainfall and the heating up of the oceans which will have a tremendous consequence on fish stocks and marine environment. Through the rise of the sea level, coastal erosion will become the consequence. One fifth of the EU's coastline is already affected, and some places are losing between 0,5 and 2 meters a year and even up to 15 meters on a few alarming cases (Life Focus, 2006, p. 6). All in all, not only the European oceans and seas are under pressure but all oceans and seas on this beautiful world. Through pollution, climate change, alien species, and human activities, the natural conditions under which the oceans function is changed. This mainly happened through human activities and by their competition with each other and the immense

demand for marine products. However, it is only possible to use the oceans economically when they are healthy because only then they provide us with food, work and joy. The biodiversity and the marine habitat of the ocean are necessary for our social and economical well being. However, they are not solely focused on them but also on an ecological way as they provide us with air to breath and therefore to live, oceans regulate the climate and the whole Weather system. Our oceans are more and more under pressure because of human activities. In some cases, even the build-up and the function of the ocean are under danger. This can be seen through the reduction of fish stocks and through the more and more emerging algal bloom.

There are different opinions about the need for a marine environmental protection. Bündnis 90/ die Grünen (the Greens) which is a German party, specialized on nature, is of the opinion that,

„The protection of oceans cannot stop at political borders. The strong network between marine ecological systems as well as versatile stresses and strains, which influence the oceans, make the use of a marine environmental protection policy extremely necessary”. (Für eine nachhaltige und umfassende Meerespolitik für die Europäische Union, 2007, p. 5)

This party is also of the opinion that the main focus should not lie on the economical aspect of the ocean but on the ocean as an ecological system itself which needs to be protected as best as possible. They further see it necessary to have a link between the EU Environmental laws with marine protection, as well as a link between the different policies which have influence on the marine environment such as agriculture and tourism. It is important, if we want to safeguard our existence, to also safeguard the existence of the marine environment. We are not born to rule the world as sapiens, there are other creatures that have been on this earth long before we even existed and we need to share this world with those as it not just only exists for mankind. If we want to keep the environment alive and thus us alive, we need to protect the marine environment and therefore we need marine environmental protection.

3. Methodology

This thesis will look at the Marine Strategy Framework Directive of the European Commission and its implementation in Germany. The title of this thesis will be “the Marine Strategy Framework Directive in Germany” and will specially focus on answering the research question of “To what extent is the Marine Strategy Framework Directive implemented in Germany in 2010?” The research design will focus on assessing the extent to which Germany has implemented the MSFD. The MSFD is a legal instrument through which the member states are obliged to transpose the content of the directive into its national law. If national laws already exist that cover the issue of the directive within a certain member states, it is not obliged to change its law but should focus on the matter to maintain and keep those laws in place. Whereas if a member state does not provide laws on the issue, the member state is obliged to change its current national law on that matter. This process is defined as transposition. This transposition process is needed for the correct implementation of the relevant directive. A directive as provided by the European Union is binding in its entirety and obliges member states to transpose it into national law within a set deadline. It enters into force, the moment it is published by the Official Journal of the European Union. Should a member state not comply with the deadline set by the directive, the European Court of Justice can take legal actions against the member state. In relation to a regulation which is self executing, the directive leaves the member state with a certain leeway of action to attain the goals. As the MSFD is such a directive it provides the necessary deadlines and tools for member state to work on the marine environmental issue by themselves in order to not miss the deadlines set by the MSFD and hence attain the goal of good environmental status by 2020.

For the research done in this thesis, it will be necessary to first look at the legal basis of an EU directive and then specifically at the marine environmental policies which structure today’s marine environmental protection processes. The first part of the thesis will therefore explain the existing policies, the Water Framework Directive, the Birds- and Habitat Directive, the HELCOM and the OSPAR as well as the Natura 2000 network and will show the newest EU environmental protection policy - the IMP - as it for the first time provides a coherent policy under which all aspects concerning the marine environment are included. Special focus will be laid upon the MSFD and its descriptors, which are needed for member states to define their

‘good environmental status’ through the established descriptors. The MSFD has been further chosen in this thesis for analysis, as it provides the ecological pillar of the new IMP and is therefore currently the main policy for regulating marine environmental protection at the EU level. It further provides a coherent framework in which member states need to cooperate in order to find a consensus about their shared marine environment. The MSFD builds upon already existing policies and combines them under one roof. As Germany is one of the most active member states in marine protection, it has been chosen to be subject of this paper. Germany has in the early stages of marine environmental protection initiated the most important conventions on the protection of the North-East Atlantic and on the Baltic Sea and hence already provides national laws which focus just like the MSFD on the issue of marine environmental protection. Hence Germany can provide the needed information for assessing the implementation of the MSFD as it has the necessary enthusiasm to protect its seas as well as having a good marine protection system, however which also needs improvements and hence transposition of national law in order to not hinder the implementation process.

The first deadline set by the MSFD was the 15 July 2010 which was not that long ago and is therefore up-to-date and is the first deadline that can be assessed by this paper. The future deadlines which will be reached along the way until 2020 will only be assessable for future researchers. Therefore the thesis will clearly look at the implementation of the MSFD until now. The necessary information about the policies and the history of marine environmental protection will be derived from EU documents and legislative acts, with special focus on the directives. To gain information about the German situation of its marine areas, assessment papers as well as projects and national strategies will be used. Through legislative acts and decisions, it will become clear what kind of actions the German government undertook to implement the first objective of the MSFD. The information that is given through the texts will be displayed within the different chapters by first of all gathering and collecting relevant text through European and German organizations as well as authorities. Then the texts will be sorted and the relevant topics for the respective research questions. As a last step the information found will be compared to one another. In this case it will be seen, how Germany has enhanced the descriptors and in what way they have been implemented into national law. This will provide the results to the research question, to what extent the MSFD has been implemented into German law by 2010. Therefore the thesis will go from a descriptive part of

marine environmental protection and the relevant policies to an empirical part, in which the MSFD and its implementation will be assessed.

4. MSFD & marine environmental protection in the EU

4.1 Brief overview of existing policies

The history of marine environmental protection is long and can be divided into conventions on the international level and European Union policies. Marine environmental protection began on the international level with the establishment of the International Maritime Organization (IMO) in 1948 in Geneva. With its headquarters in London, UK the IMO is a specialized organization of the United Nations (UN). The IMO has the sole purpose to maintain and also develop comprehensive regulatory framework for shipping. Those conventions were followed by other global agreements like the International Convention for the Prevention of Marine Pollution from Ships (MARPOL), the United Nations Convention on the Law of the Sea (UNCLOS) and the International Council for the Exploration of the SEA, the ICES. On the European level, the European Union has also established different conventions in relation to marine environmental protection in the last decades. In the early 1970's, the London (1972), Oslo (1972), Helsinki (1974), and Paris (1974) conventions were created. The London convention as well as the Oslo convention (OSCOM), are known as an inter-governmental conference on the convention of the dumping of wastes at sea and were the first major initiatives on a global level to protect the marine environmental and stop unregulated waste dumping at high seas. The Paris Convention (PARCOM) focuses specifically on the marine protection of the North Atlantic. The OSCOM was revised in 1992 together with the PARCOM and were joined in 1992 to form the OSPAR Convention. The goal of this convention is the protection of the North Sea and the North Atlantic. Following the OSCOM and the PARCOM was the Helsinki Convention (HELCOM) in 1974 and focuses for the first time on the protection of the Baltic Sea. Again also this convention has been revised in 1992 and has the focus on the Baltic Sea area. It further includes the inland waters and the sea-bed. Further framework decisions were established by the European Union to protect its seas. Those are the EU Water Framework Directive 200/60/EC (WFD) from

October 2000, the Council Directive 79/409/EEC on the protection of wild birds (1979) and the Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (1992). The WFD covers inland surface waters, groundwater, coastal waters and transitional waters. As any other environmental protection policy, it tries to prevent and reduce pollution, the promotion of sustainable water usage, improvement of aquatic ecosystems. Its overall aim is the achievement of ‘good ecological and chemical status’ in all Community waters by the year 2015. The Wild Birds Directive together with the Habitats Directive forms the cornerstone of Europe's nature conservation policy while the Habitats Directive also established the Natura 2000 network, the largest ecological network in the world. Natura 2000 is a network of protected areas across the whole European Union and provides marine species the necessary areas in which their stocks can recover.

Through the conventions, nations were provided with the obligation, to safeguard the marine environment as well as the protection of scientific research on the high seas. The European Union, as well as the international community has become increasingly aware of the problem our oceans face, especially increasing concern has risen for the European oceans and seas. The European Community has been a contracting state of all conventions and agreements which have been established in all those years. As the European Union sees the problem which the marine environment faces, it has established different regulations itself. Therefore they have been included into the Sixth Environmental Action Program with the special focus, to develop a strategy especially for the conservation and protection of the marine environment, in order to promote the sustainable use of the seas, as well as to conserve the marine ecosystem. Those regulations will further be discussed in this thesis and are therefore subject of chapter four. Table 1 will highlight different marine policies in which the European Union and or Germany are contracting states.

Table 1: Marine policies with the EU and Germany as contracting states.

Year	International Agreement	Content	Level of government
1972	London Convention	Dumping of waste at sea	Inter-governmental Germany and other EU member states but not the EU itself
1972, 1974,	Convention for the	Conservation of marine	current legal instrument guiding international

1992	Protection of the Marine Environment in the North-East Atlantic (OSPAR)	ecosystems, to safeguard human health in the North-East Atlantic Prevention, eliminating of pollution; protection of the marine environment from the adverse effects of human activities; and by contributing to the sustainable use of the seas.	cooperation on the protection of the marine environment of the North-East Atlantic - Legal binding decisions - Recommendations and decisions are set out to be taken by the contracting states OSPAR Commission, fifteen Governments of the western coasts and the European Community
1974,	Convention on the Protection of the Marine Environment in the Baltic Sea Area (Helsinki Convention)	covers the whole of the Baltic Sea area	governing body = Helsinki Commission framework for cooperation
1992		covers the whole of the Baltic Sea area + inland waters and sea bed	contracting parties undertake all appropriate and necessary measures to prevent, control and reduce any trans-boundary impact signed in 1974 by seven Baltic coastal states (Germany) 1992 by all the states bordering on the Baltic Sea (Germany), and the European Community.
1979	Council Directive 79/409/EEC on the protection of wild birds	Protect, manage and regulate all wild bird species within the territory of the Member States, including: eggs, nests, habitats;	Germany and other EU member states
1992	Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora	Ensuring bio-diversity by the conservation of natural habitats and wild fauna and flora in the Member States.	Germany and other EU member states
1992	Natura 2000 network	maintain or restore the habitats and species at a favorable conservation status in their natural range	Germany and other EU member states
2000	EU Water Framework Directive 2000/60/EC	good ecological and chemical status' in all Community waters by the year 2015	Germany and other EU member states
2007	Integrated Maritime Policy; COM(2007) 575 final	Maximizing the sustainable use of the oceans & seas • Building a knowledge and innovation base on which to further develop • Delivering the highest quality of life in coastal regions • Promoting Europe's leadership in international	the principle of subsidiary established by the European Commission, on European Level

		maritime affairs • Raising visibility for Maritime Europe	
2007	HELCOM-Baltic-Sea Action Plan	Eutrophication Hazardous substances Maritime activities Biodiversity	Regional intergovernmental program of measures for the protection and management of the marine environment explicitly based on the Ecosystem Approach.
2008	Marine Strategy Framework Directive	-protect more effectively the marine environment across Europe. -achieve good environmental status of the EU's marine waters by 2020 -protect the resource base upon which marine-related economic and social activities depend.	European Union level Germany and other EU member states
2009	Birds Directive; Directive 2009/147/EC	Codified version of Wild Birds Directive 79/409/EEC Protection of all wild bird species which occur naturally within the EU territory	Germany and other EU member states

In relation to Table 1, most maritime policies are made on the international, European level and then let the contracting states decide in which way they implement the objectives or give clear and strict orders. Therefore the thesis mainly will focus on the Marine Strategy Framework Directive and the Integrated Maritime Policy, as they are both developed on the European level and also provide in light of the IMP the subsidiary principle as well as giving member state the full range of action in implementing and developing marine protection regulations.

4.2 The Integrated Maritime Policy

Through various deficits in the Common European Fisheries Policy (CFP) such as the overcapacity of fishing fleets, imprecise policy objectives, short termism in decision-making, the lack of responsibility by the industry and last the lack of compliance. Hence, the fisheries have contributed a great deal to the catastrophic collapse of the resource they were established to maintain (Wakefield; J.; 2010; p.323). It was agreed on European as well as on international level, that Fisheries could not be seen as a discrete sector. As the fishing sector could not be seen as a standalone sector, an integrated approach was necessary. Therefore a thematic strategy has been developed by the EU's sixth environmental action plan in 2002 in which the protection and conservation of the marine environment as well as the sustainable use of the seas and the conservation of marine ecosystems will be founded. It is an effort to achieve a coherent approach in which the demands on the marine environment are addressed at the same time the strategy provides environmental protection. In 2007 then the Commission published its communication to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions in which it outlines its plan for an Integrated Maritime Policy (IMP). The communication: An Integrated Maritime Policy for the European Union coined the following sentence: 'The seas are Europe's lifeblood' (European Commission, 2007). The integrated maritime policy is a proposal from the Commission from the year 2007 and was adopted on October 10th, 2007. It was presented together with an action plan for an integrated maritime policy which comprised different proposals. The IMP,

“... takes into account all aspects germane to Community waters was perceived necessary to enable the EU to respond to current urgent problems arising from 'globalisation and competitiveness, climate change, degradation of the marine environment, maritime safety and security, and energy security and sustainability'” (Wakefield; J.; 2010; p.329)

Sustainable development belongs to the priorities of the European Union's engagement for maritime affairs. It is of interest, to combine the interdependencies of economic growth, social prosperity and environmental protection. To do so, the European Union can rely on its leading

role in the knowledge of its oceans and seas as well as on its broad expert knowledge and skills in order to tackle new challenges. The purpose of the IMP is an integrated, sector overlapping concept which can only be implemented through stronger co-operation and coordination of all marine measures on the different decision-making levels. It is supposed to "...lay out a foundation for the governance framework and cross-sectional tools necessary to support the policy together with the main actions" (Wakefield; J.; 2010; p.329)

Due to the fact that the creation of a maritime policy framework requires strict and precise management framework, the commission has established a Maritime Policy task force. This Task force has the function to 'analyze the interactions between the sectoral policies and coordinate them', further it has 'requested help from the Agencies of the European Union with maritime related functions to draw up new policies', (Maritime Affairs; Action plan for an integrated maritime policy; 2010).

The principle under which the IMP works for decision making and guiding actions, are sustainability and competitiveness, the ecosystem approach and stakeholder participation. Under the principle of sustainability and competitiveness, the European Union wants to increase the growth of maritime economy and its coastal regions. It is important for the EU 'to ensure the competitiveness, safety and security of the sector' (Maritime Affairs; Action plan for an integrated maritime policy; 2010). The IMP was overall designed, to overcome the "... discordance between the competing demands on the marine environment:" (Wakefield; J.; 2010; p.232)

The IMP has been designed to be "(...) holistic and (...) serve as a framework for coordinating European marine environmental management, overseeing the progress of individual Member States and regional efforts towards MSP" (Marine Spatial Planning) (de Santo; 2010; p.416). Further the IMP is developed as a policy that "(...) covers all aspects of our relationship with the oceans and seas" (van Hoof; van Tatenhove; 2009; p.729). It will provide a coherent policy framework in which the development of all sea related activities will be done in a sustainable manner. Within the IMP the Marine Strategy has been established, as well as the MSFD to be the 'environmental pillar'. The IMP wants to seek integration and participation through all policy areas in relation to the protection of marine systems. Through its cross cutting sectors, it can be seen as an "(...) integrative and participatory policy arrangement". (van Hoof, L.; van Tatenhove. J.; 2009; p. 730) The IMP wants to bring together all actors from across the wide variety of policy sectors. This wide

range also means a wide range of issues that have to be taken into account. The IMP is the new centerpiece when talking about marine and maritime management.

4.3 The Marine Strategy Framework Directive

The MSFD is an integral part of the IMP and has a clear environmental focus and building the second pillar of the IMP next to the Green paper of the European Commission and was adopted in 2008. It is an EU legal instrument and gives member states the possibility to change their national laws and find the relevant measures by itself. The MSFD is seen as “(...) being the means by which an overarching framework can be provided enabling positive action to be taken which will be ‘co-ordinated, consistent and properly integrated with action under other Community legislation and international agreements’” (Wakefield; J.; 2010; p. 329) It will “...provide a framework in order ‘to protect and preserve the marine environment, prevent its deterioration or where practicable, restore marine ecosystems’” (Wakefield; J.; 2010; p.232) The main objective of the MSFD, to achieve ‘good environmental status’ by 2020 will be achieved through establishing marine regions and sub-regions which will be then managed by the member states. The management of such regions will be done through an integrated manner based on the environmental criteria. Therefore the member states are required to draw up their own marine strategies for the waters within their marine regions. The regional and sub-regional strategies as they are called will consist out of action plans which will then be implemented. They will be structured as followed: First the member states need to make an assessment of their environment and define the main pressure that lies upon the respective marine regions. Secondly, they will need to define what they understand under ‘good environmental status’. Within the directive the European Commission already gave a definition of good environmental status:

“...‘good environmental status’ means the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations. i.e. (a) the structure, functions and processes of the constituent marine ecosystems, together with the associated physiographic, geographic, geological and climatic factors, allow those ecosystems to function fully and

to maintain their resilience to human-induced environmental change. Marine species and habitats are protected, human-induced decline of biodiversity is prevented and diverse biological components function in balance;
(b) hydro-morphological, physical and chemical properties of the ecosystems, including those properties which result from human activities in the area concerned, support the ecosystems as described above. Anthropogenic inputs of substances and energy, including noise, into the marine environment do not cause pollution effects;” (Directive 2008/56/EC)

Thirdly the member states will establish their own targets, indicators and monitoring programs. This has to be done until 2015 to still be able to attain ‘good environmental status’ by 2020. Further is the MSFD based upon an ecosystem based approach to which the management of all human activities that have an impact on the marine environment are considered. As the MSFD is a framework directive, it sets fixed deadlines within a timetable for the member states to keep up with. The obligations put upon the member states for the correct implementation of the outcome need to be transposed into national law. The following table shortly summarizes the objectives set by the MSFD in order to attain the goal of reaching ‘good environmental status’ by 2020.

Table 2: Timeline for deadlines and objectives to be reached

Deadline	Objective
December 2007	The (Environment) Council and the European Parliament agreed upon the legislative text
15 July 2008	The legal text entered into force
15 July 2010	First concrete implementation deadline. <ul style="list-style-type: none"> - Definition of descriptors and Indicators - Draw up a National Marine Strategy - Transposition into national law of the member states
15 July 2012	First round of assessing the current status; Secondly the definition of ‘Good Environmental Status’ Thirdly defining targets and

	indicators.
15 July 2014	Monitoring programs will be put in place (for assessments & regular updating of targets)
15 July 2015	Measurement programs need to be developed, to reach or even maintain ‘ good environmental status’
15 July 2016	National programs of measures must enter into force
15 July 2020	Good Environmental Status should be achieved in all EU marine waters

Source: Janine Günzel

In order to reach the goals, the MSFD makes use of different kinds of approaches, the main one being the eco-system approach. Sustainable development includes in its definition, the concept of an ecosystem approach. It requires that the management focuses specifically on the maintenance of the health of the ecosystem alongside the human use of the marine environment. The ecosystem needs to be protected for future generations. The ecosystem approach was first defined in the Convention on Biological Diversity (CBD) and it was defined as “(...) a strategy for the integrated management of land water and living resources that promotes conservation and sustainable use in an equitable way” (The Convention on Biological Diversity, 2010). The ecosystem is defined by the CBD as “(...) an interacting complex of living communities and the environment, functioning as a largely self-sustaining unit.” (The Convention on Biological Diversity, 2010) In other words, the ecosystem approach wants to convey that humans are part of the ecosystem and not above it. As the ecosystem approach is also applied to the MSFD its range has been extended. According to the MSFD the eco system approach is a comprehensive integrated management of human activities. Such management is based on the best scientific knowledge about the ecosystem as well as its dynamics. Through this and new scientific knowledge that is of disposal for the MSFD, influences on the ecosystem are identified and acted upon to ensure a healthy and strong marine ecosystem. What is also important for the ecosystem approach is that actions taken on land can have an effect on the marine environment; therefore actions taken under it have to take the environment and its natural changes into account and needs to understand that it does

not control these natural processes. It is a long term perspective method and underlines the importance that the social and economic sustainability depends on the ecological sustainability of the marine environment. Next to the ecosystem approach, there are different instruments that are provided by the IMP for better implementation. Such instruments are on the one hand European networks for maritime surveillance, to make sure that the seas and the European Union's borders are safe and secure. Therefore, more cooperation between the different coastguards and relevant agencies is encouraged by the Commission. Second instrument consists out of the 'integrated coastal zone management', which includes land and sea, to further 'enable maritime spatial planning' (Maritime Affairs; Action plan for an integrated maritime policy; 2010). The integrated coastal zone management includes the sea, the land and their interface areas into a single integrating management. Since 1996 the European Commission tried to promote Integrated Coastal Zone Management (ICZM) through its Demonstrating Program. According to the Commission, the ICZM is an approach to integrated planning and management in order to achieve sustainable coastal development in the European Union. It is up to the member state to promote the ICZM through establishing their own strategies for further developments. To make this realistic, Europe-wide commitment is needed, even though the Member States have the main competence of action in this field. The third and last instrument, will be to establish a 'European Marine Observation and Data Network', (Action plan for an integrated maritime policy, 2010) to provide a source for data and knowledge information on 'natural and human activity on the oceans', (Maritime Affairs; Action plan for an integrated maritime policy; 2010). This will be of interest in order to facilitate more strategic decision making on maritime policy.

As the MSFD cannot be assessed in its fullest at the current state, this thesis only focuses on the first implementation deadline at the 15th July 2010. At this date, member states need to have defined the relevant descriptors as well as the necessary criteria. Such descriptors are needed, to provide the framework directive with the necessary coherent and EU-wide approaches which can be assessed and compared. The descriptors have been already established preliminary by the MSFD in Annex I of the Directive. The WFD, the Birds – and Habitats Directive as well as in the regional conventions HELCOM and OSPAR also provide their own criteria for the assessment of good environmental status. The descriptors published by the MSFD are the following:

1. *Biological Diversity*

- The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.

2. *Non-indigenous species*

- Not to be introduced by human activities and should be held at a level that does not adversely alter the ecosystems.

3. *Commercial fish*

- Are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.

4. *Food web*

- Occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.

5. *Eutrophication*

- Minimized, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.

6. *Sea floor*

- At a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.

7. *Alternative hydrographical conditions*

- Does not adversely affect marine ecosystems.

8. *Contaminant and pollution effects*

- Are at levels not giving rise to pollution effects

9. *Contaminants in fish and other seafood*

- Do not exceed levels established by Community legislation or other relevant standards.

10. *Litter*

- Do not cause harm to the coastal and marine environment.

11. *Energy and Noise*

- At levels that do not adversely affect the marine environment.

The descriptors are necessary in the assessment of ‘good environmental status by 2012 which is the upcoming deadline. When each member states assesses its own marine territory according to those standards, then the assessment of ‘good environmental status’ will be coherent and comparable through all member states. When talking about implementation and

transposition, it is important to provide a clear definition of the processes they include. The general definition of implementation an action which must follow any preliminary work to the end that something happens afterwards which results out of the action taken. In this area of research, this means that after the drawing up of a European strategy, something has to happen in order to apply the strategy and benefit from it. This process that leads to the benefit and application is the necessary implementation process of various methods to attain the benefit or reach the objectives. Implementation methods or what can be done to reach the implementation of the objectives, can be found within the national marine strategies which are to be established by each member state. For the implementation, each member state has to develop a national marine strategy for each of its marine regions or sub regions. The MSFD has broadened through this aspect its marine policy for the part which was still missing in the Water Framework Directive (WFD). Within the WFD, the following marine waters are covered, inland surface water, groundwater, transitional waters and coastal waters. Through the application of the MSFD the EU has broadened the scope of marine waters to the 12 nautical mile zone as well as the relevant Exclusive Economic Zone (EEZ) in this case the German EEZ.

The other objectives of the MSFD will be assessed through the set descriptors and criteria in the upcoming years. In 2012, member states will need to undertake the first round of assessment of the current situation of their marine environment. This will be done through the descriptors and after the assessment, new environmental targets and improved indicators will be established to improve the environmental situation. The next steps that will be taken in the process focuses on monitoring programs which will be established for further assessments and regular updating of marine environmental targets and hence make marine environmental protection more secure and accurate. By 2015, good environmental status should be reached according to the Baltic Sea Action Plan however; the MSFD has set this date to 2020 therefore in 2015 measurement programs to on the one hand reach or where already existing maintain good environmental status. Those need to be entered into force in 2016 and finally in 2020 good environmental status should be reached in all EU marine waters.

4.3.1 Marine Strategy Framework Directive as the main marine policy

The MSFD is the first encompassing piece of EU legislation specifically aimed at the protection of the marine environment. As its main goals, the MSFD applies the eco system approach to all marine related policies also established through human activities on land. This approach is imposed to the management of all human activities that have directly or indirectly an impact on the marine environment. Further under the guidelines of the MSFD all EU member states are obliged to take all measures necessary to reach and achieve as well as maintain good environmental status within their respective marine waters by 2020. Through its regional approach to its implementation, it makes use of regional seas conventions, such as the Water Framework Directive, the Birds Directive or the Habitats Directive but also it takes into consideration the HELCOM and the OSPAR, which in relation to Germany covers the North and Baltic Sea, which are the main seas important for Germany. As the MSFD has entered into force in 2008, it builds upon the other directives which have entered into force some years earlier. As an example the Water Framework Directive can be taken, as this directive is extended through the new targets set by the MSFD. The MSFD has broadened the scope of marine protection competences up to the 200 Nautical miles zone also known as the EEZ. Even though Member states have already cooperated in terms of marine environmental protection, the MSFD further enhances it as also third countries which are not a member of the EU are also taken into the discussions. They as well have right to decide what will happen within their marine environment

These aspects make the MSFD an interesting and important European directive, which has an effect on all member states and for the first time provides a coherent framework on how to deal with marine environmental threats and challenges. Moreover, as it builds upon older marine environmental protection policies, it embodies all important policies and therefore provides the best possible policy to use on environmental protection.

5. The Marine Strategy Framework Directive in Germany

5.1 Existing policies

German marine protection policies have reached a lot of success during the last decades. It all started in the end of the 1960's, early 70's. In those years, marine environmental protection has placed itself more and more into the mind of the people of Europe. As Germany has as its only marine environment, the north and the Baltic sea, its marine environmental protection policies mainly focus on those two seas as well as on the North-East-Atlantic ocean, which is connected to the North Sea. In order to protect the marine environment of the North East Atlantic and the Baltic Sea regional agreements were made between the states which, next to Germany, border to those seas and oceans. Such agreements were, the Oslo Convention, the Paris Convention, and the Helsinki convention modified at the beginning of the 1990's. They have been renamed into OSPAR and HELCOM. In 1984 the first international North Seas protection Conference was held on German initiative. To the main achievements of German marine policy belongs the '10 point action program', the stop of barging of spent acid as well as waste incineration on high seas. Further the eco system approach has been introduced during a ministerial conference again initiated by Germany. They agreed upon the fact that human activities have an immense effect on the marine environment and therefore those have to be regulated under an approach which takes human activities as well as the well being of the marine environment into account. Further they agreed upon the necessity of developing an integrated approach to marine policy and developing until 2010 a coherent marine protection network. Germany has, as the first member state, developed such marine protection areas in 2004 within the exclusive economic zone (EEZ) and within the North and Baltic Sea. Therefore Germany is the first European member state that has already established the basis for the coherent network of marine protection areas according to NATURA 2000. Most of the marine environmental policies are decided on the international level. Therefore Germany has to apply the requirements set by the international community. Those requirements are set by the United Nations through its 'International Law of the Seas'. Global regulations in regard to Shipping are made under the International Maritime Organization (IMO) and regulations for fisheries by the Food and Agriculture Organization (FAO) another organization of the United Nations. On the European

Level, directives have been introduced during the years, which regulate different aspects of the marine environment. Next to the IMP and also next to the MSFD there are the Water Framework Directive (Directive 2000/60/EC establishing a framework for Community action in the field of water policy), The Birds Directive (Directive 2009/147/EC on the conservation of wild birds) adopted in 2009 and the Habitats Directive (Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora) in 1992. Those directives are of vital interest to the MSFD as it builds upon those directives and enhances them to achieve its goal by 2020. Further some of the policies within the MSFD have already been implemented through those three policies and others which have not yet been implemented can be through the new approaches and measures of the MSFD.

A different and very important policy established for marine environmental protection is the Natura 2000, the Council directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC). The Habitats Directive has given the requirements, to establish Natura 2000 network which by now is the largest ecological network in the world. Natura 2000 is constructed through special areas of conservation which are designed by the relevant member states and includes special areas, which are especially classified to the Wild bird's directive from 2009.

In conclusion, all policies that touch upon the marine environment are taken into consideration by the MSFD and hence provide the coherent framework necessary for a coherent and effective marine protection, may it be directly or indirectly.

5.2 Transposition of the Marine Strategy Framework Directive into national law

The MSFD has only entered into force in 2008 and wants to achieve good environmental status by 2020. Therefore the whole impact and implementation process of Germany cannot yet be assessed. What can be assessed is the first deadline set by the MSFD for 15 July 2010. The objectives set are first of all the naming of relevant actors in marine environmental protection and further the definition of descriptors. In the end those descriptors provide the necessary topics for the action taken in national law. Those descriptors are outlined the national marine strategies of the member state. Further a national marine strategy should be developed as well, in which the objectives and targets of marine environmental

protection should be laid down in order to reach ‘good environmental status’ by 2020. The last objective set out by the MSFD for 2010 is the implementation of the MSFD in German national law. This in short means that the MSFD should be included in all decisions and policy making actions which have an effect on the maritime environment. The implementation of the MSFD could possibly be done like the implementation of the WFD in Germany. Through the nature of a directive, if the necessary laws are not yet present within national law, then the laws need to be changed. This was the case with the WFD which was implemented through the change of the Federal Water Act as well as in the waters acts of its Länder which needed to be adapted to the new law (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit; 2007). In relation to the MSFD this means that to attain ‘good environmental status’ all federal acts which do not have any specific link to the MSFD will need to be changed and adapted to the new framework directive. By now only the way towards the change has been described by the national marine strategy.

The MSFD has contributed largely not only in Germany but EU-wide to the scope of marine environmental protection. At an earlier stage, the WFD was only provided with authority until the 12 nautical mile zone. Through the MSFD this has been broadened up to the EEZ. Other policies, such as OSPAR also covered this area but only at a regional level and not EU-wide.

The first objective of the MSFD by 2010 was to first of all name all the relevant actors involved in the marine environmental protection process. On the European level according to Art. 5 (1,2) of the MSFD all member states are supposed to work together with those with whom they share marine (sub) regions to better enforce marine policies. Due to the fact that Germany’s seas adjoin mostly fellow member states or member states of the European economic area, therefore they are under the same obligations to implement the guidelines. At the national level, the government and the ‘Länder’ work together, to find a common way for the preservation of the Marine environment. The ‘Länder’ are responsible for their respective marine area whereas the government has responsibility for the EEZ. Further are citizens, producers, consumers, the economy and trade union and scientists are integrated into the process, as they provide very important information for the sustainable development. The most important actors are federal government departments, technical authorities and federal government/Länder working groups. To the federal government departments and technical authorities belongs the ‘Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit’

short BMU and responsible for any environmental protection policy within Germany. Its competences reach from environmental, over environmental protection, to reactor safety. Therefore it is the main federal government department on behalf of environmental issues. In relation to transport and shipping the 'Bundesministerium für Verkehr, Bau und Stadtentwicklung'(BMVBS) is responsible for issues on nutrition, agriculture and consumer protection, the relevant federal government department is the 'Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz'(BMELV). This department is necessary to be part of the marine environmental process, as agriculture has an indirect effect on the marine eco system through its fertilizers but also consumers need to be informed about the current marine environmental situation, as for them the fishing sector is very important. When looking at federal departments, important are the 'Bundesamt für Naturschutz' (BfN), the 'Umweltbundesamt'(UBA) and the 'Bundesamt für Seeschifffahrt und Hydrographie'(BSH).

Further there are working groups (WG) in which the federal government and its 'Länder' come together. Those working groups are the LAWA, the WG on water and the LANA WG on environmental protection, rural conservation and recovering and finally the ARGW BLMP, WG on measurement programs for the marine environment in North and Baltic Sea as well as the marine expert group). Other actors involved in the processes are the national office and all other interested parties.

The second objective of the MSFD was to define relevant descriptors, indicators and criteria for the future assessment of 'good environmental status'. In order to have a coherent system through all European member states, the Commission, together with the member states as well as interested parties, came up with the already displayed set of descriptors in section 4.3. As those can only be applicable if a national marine strategy is established, Germany has drawn up its 'National Strategy for Sustainable Use and Protection of the Sea 'in 2008. Within this national strategy, Germany clearly defines the current situations of its fisheries, shipping sector, renewable energies, tourism, agriculture and other activities which can have an impact on the marine environment. Further it provides information about the future actions that will be taken by the German government to reach the targets set by the MSFD. The construction of a national marine strategy orientates itself at the balance between protection and use of the marine environment. Marine science supports the national strategy as it will provide Germany with further relations and solutions for challenges to be better prepared for the future of

marine protection. The national strategy will be used as the foundation for the following measurement program as it is required by the MSFD.

The German national marine strategy has the following goals:

1. Integration of the use of the marine environment and at the same time the protection is the first commandment. It has to be present in each policy which is related to the marine environment
2. Good environmental status by 2020 in the Baltic and North Sea as far as the borders of the EEZ.
3. Reach adequate measures until 2012 to reach good environmental status within the first nautical mile zone as well as a good chemical status in coastal waters of the 12 nautical mile zone. Measures are based on national and international laws.

Germany defines in its national strategy National Strategy for Sustainable Use and Protection of the Sea' from 2008, good environmental status according to the descriptors' within the MSFD guidelines as followed:

- The quality and the appearance of marine habitats as well as the number and frequency of marine species comply with the physiographic, geographic and climate terms and conditions to preserve the marine biodiversity.
- Non-native species are only appear in a not harmful number
- All fish and shellfish stocks which are of commercial use are of great diversity in age and size and of good health within biological boundaries.
- The human action of eutrophication will be reduced to a minimum
- The Marine soil needs to be in a stable status so that it can function in proper ecological way.
- No pollution from hazardous substances
- Hazardous substances within commercial fish will not harm the marine environment
- Energy and underwater noise will be reduced to a limit not harmful for the marine environment.

Those targets are in accordance with the defined descriptors of the MSFD and are necessary to assess 'good environmental status' in 2020. However, to attain these goals every policy

aspect that has a direct or indirect effect on the marine environment needs to be taken under construction. Those issues are according to the national marine strategy, biological diversity, fisheries, shipping and transport, maritime mining, use of renewable energy, eutrophication, tourism and agriculture. However, only a biological diversity and eutrophication can be assessed to what extent they have already been implemented as those are the main aspects that contribute to good environmental status. If the biological diversity of fishstocks and the marine environment is guaranteed, then this is the right way for reaching good environmental status. Therefore biological diversity builds a main aspect to attain the goal for 2020. The same goes for eutrophication.

Biological Diversity

It is the goal of the MSFD to maintain the biological diversity of German seas. Hence Germany has already undertaken several actions to attain this goal. Before the MSFD was entered into force, Germany has implemented its ‘National Strategy on the Biological Diversity’ in 2007 after the UN *Convention on Biological Diversity* (CBD) in 1992. On the regional level, the HELCOM and the OSPAR convention account for the maintenance of marine biological diversity in the Baltic and North Sea through the Baltic Sea Protection Areas (BSPA). Until 2010 a coherent network of protection areas should have been established together with the eco-system approach. According to the BfN, 31% of the German EEZ are Natura 2000 protection areas (Bundesamt für Naturschutz; 2011). 24.5 % of the Baltic Sea are protected areas, such are the Fehmarnbelt, the Kadetrinne, the Westliche Rönnebank, the Adelgrund, the Pommersche Bucht together with Oderbank and by itself (Bundesamt für Naturschutz; 2011). In the North Sea 26.1% are under protection, the Östliche Deutsche Bucht, Sylter Außenriff, Borkum-Riffgrund and Doggerbank (Bundesamt für Naturschutz; 2011). They have been established through the Natura 2000 network and through the Council Directive 79/409/EEC on the protection of wild birds and the Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. The MSFD (18) states that all member states have the duty to contribute to the establishment of the Natura 2000 network. Through the already established marine protected areas in North and Baltic Sea, Germany highly contributes to this duty. Until 2015 according to the WFD and until 2020 Germany wants to reach good environmental status within these areas.

Eutrophication

Eutrophication is the oxygen lack within marine waters through hazardous substances through which algae population increases rapidly within the warm seasons. Though the immense explosion of algae the plankton eating species are not able to keep up which result in a mass mortality of those algae, hence the lack of oxygen and a high mortality of marine species. The mass use of fertilizer within the agricultural sector has such an effect on the marine environment. Targets set by Germany to reduce eutrophication are set by OSPAR, within a special strategy for the fight against eutrophication. It is written in this strategy that until 2010 no eutrophication should take place anymore. There should be no introduction of hazardous substances into the marine environment anymore, also not through emissions. This has also been included into the targets of the WFD which wants to achieve a ‘good ecological status’ as well as a ‘good chemical status’ by 2015 within the first nautical mile. This goal is supplemented by the MSFD however, the deadline is expended until 2020 and the good status should be reached within territorial waters as well as in the EEZ. A contributor to eutrophication is the policy sector agriculture, through its fertilizers. Even though the emissions and introduction of hazardous substances into the oceans has been reduced according to it was not possible to completely terminate eutrophication by 2010 as proposed by the OSPAR. Hence, it is the goal of the German government to establish an integrative concept for the sustainable use of agriculture. Further it is of vital importance, that the various policies like the WFD will be consequently implemented (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, 2008; p. 60)

All necessary actions taken under the MSFD at this moment and in the future will be carried out by the eco system approach. The first time Germany has come across the eco system approach was during the minister conference in 2003 in Bremen within the OSPAR and HELSINKI convention. According to the National Strategy for Sustainable Use and Protection of the Sea’ the eco system approach is still in its starting blocks (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, 2008; p. 47) The ecosystem approach demands an integrated management of human activities and desires the goal to influence those actions which put the German seas under pressure. Through such action, the sustainable use of natural resources should be reached. The application of this approach has the result that the goals of the MSFD are comprised in all policy fields.

As a second approach used by Germany, the integrated coastal zone management (ICZM) will enhance the protection of coastal zones and will maintain them as ecological save and economical prosperous habitat. The German government has enforced its integrated coastal zone management already in 2006, before the MSFD trough the ‘National Strategy on the Integrated Coastal Zone Management’. ICZM is a management approach aiming to reduce marine related conflicts and maintain and enhance the marine environmental quality and further at reaching coordination between the economical, social and ecological interests of further coastal development through the principle of sustainability. The implementation of the ICZM in Germany has to occur on different levels, “(...) „top down” as well as „bottom up” (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, 2008; p. 86). The top down approach results through the responsible government or Länder legislative bodies. The government and the Länder are responsible for providing the necessary resources and communication platforms through which concrete coordination measures are implemented. The bottom up approach instead focuses on the regional and local level as well as the public. It is necessary in order to develop their own ICZM initiatives that all actors on each level, on state or social level are integrated and taken into the decisions. The ‘National Strategy for Sustainable Use and Protection of the Sea’ understands the ICZM as voluntary approach which is supported by good integration and cooperation, communication and participation and through which it can enhance the sustainable use of marine ecosystems (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, 2008; p. 59). The national ICZM has the following goals, according to the ‘National Strategy for Sustainable Use and Protection of the Sea’:

- Sustainable development of coastal and marine areas
- General principle for political and social actions
- Integrates all relevant policy fields
- Continuing process in order to reach the best information possible to make the knowledge available for future actions

Germany embodies the leading role in marine environmental protection. However, even in Germany not all aspects of the MSD have yet been implemented. It is up to the next 10 years, to see if the changes Germany made for the marine environment have a positive effect on the

marine environment and the ecosystem. Still Germany has up until now followed up in the MSFD guidelines and will further try to do so, as set within the national strategy.

6. Conclusion

The central Research question of this thesis was “To what extent is the Marine Strategy Framework Directive implemented in Germany in 2010?” Marine environmental protection within the European Union is a very broad topic. Therefore the thesis has specifically focused on the implementation of the MSFD in Germany. In short marine environmental protection is the protection of threatened and destroyed marine areas, to reduce the pressure and support the marine environment in recovering and gaining its strength back. Marine environmental protection is needed in this world, as $\frac{3}{4}$ of the worlds surface is covered by water and provides species with water, air and food. Through more and more human activities which are not of a natural source but established through technologies and chemicals, the world’s oceans and seas are put under pressure and hence fail to keep up with the exploitation driven by the demands of mankind. This is the current situation of European oceans; hence the European Union developed the IMP in 2007 and later the MSFD as its ecological pillar. This framework directive has the aim to reach good environmental status within European waters by 2020. Older policies, had the same target, however, were not able to reach it. Therefore all hope was set into this new framework directive. The MSFD requires its member states to develop their own national strategies, in which they lay down their plan on how to achieve ‘good environmental status’ by 2020. In order to reach this goal the MSFD has through its legislative power set several deadlines which need to be fulfilled. The thesis focused on the first deadline set by the MSFD by 15th July 2010. Until this moment, Germany and the other member states were required to draw up their national marine strategies, provide the relevant actors that focus on the work and define the descriptors, this was done by the Commission and the member states. In the end this should have been implementing into national environmental law. Some of the marine issues such as Biological diversity and eutrophication have already included actions supposed to be tackled by the MSFD. Such as the coherent network of marine protected areas. It could be nicely seen, how Germany has already worked on this through the HELCOM and the OSPAR. As Germany is

a contracting member of the HELCOM as well as of the OSPAR, targets have already been set earlier. Hence Germany can within its national marine strategy already provide a definition of 'good environmental status' and already established ten marine protection areas under Natura 2000. When looking at Germany, it becomes evident, that member states are capable of cooperating and finding a consensus on marine environmental protection. Through the new development of the MSFD the old policies have been expanded by the new targets and competences. Through the new descriptors a new coherent framework was established, in order to make it possible to compare member state and their development in this area. As already established policy also focused on attaining 'good environmental status' but those could not be used as an assessment for the MSFD. Therefore new assessments of the current marine environmental situation need to be drawn up. Even though policies like the WFD already include 'good environmental status' as the final goal, the MSFD gave member states an extension of the deadline from 2015 until 2020. On the way to 2020 and good environmental status, the next important deadline will be in 2012 were Germany wants to have achieved adequate measures for good environmental status and good chemical status within the first nautical miles as well as good coastal waters within the 12 nautical miles this is 3 years earlier as the WFD targeted 'good chemical status' in 2015. For implementation, Germany has committed itself to applying the ecosystem approach, as well as the ICZM.

Within the Water Framework Directive, good environmental status should be reached by 2015 within the first nautical mile this has been enhanced by the MSFD through reaching it by 2020 and within the 12 nautical miles and the EEZ. The MSFD will be implemented in the same way as the WFD, national laws which are touched by an issue of the MSFD will need to be adapted to the general rule set it.

Hence when trying to answer the research question, it is to say that the extent to which the MSFD is implemented into Germany can only be partially assessed at the moment, as it is far too early in the implementation timeline. However, it could be assessed, that Germany has fulfilled its obligations. It provides a coherent system of marine protected areas within the North and Baltic Sea. With a total 31% of the EEZ being such an area the issue of biological diversity within European seas is under construction and already implemented into national law. Germany provides a large framework of actors which are involved into marine environmental protection directly or indirectly like the BMELV. In the end, it showed that

Germany included the ecosystem approach in its actions and hence makes use of the MSFD for its policy making. In addition the ICZM is used to provide further enhancing biological diversity.

However, even though Germany has such a high standard in marine environmental protection, the documentation of what has been done and how is poorly in contrast to other member states. Through the administrative barrier of transparent documentation, further information on the implementation of the MSDF into national environmental law could not be found and therefore could not be displayed. It is up to the following 10 years, to see how Germany applies the objectives set by the MSDF and its national marine strategy to reach good environmental status by 2020.

Through the extreme use of marine resources, the marine environment is in danger and cannot recover by itself and therefore we need to give something back. This has become marine environmental protection, in form of protected areas and safer and better regulated policies so that the situation will not get worse. However, through the years many different directives and regulations have been drawn up and the situation has not changed, in contrast, the situation in some oceans and seas have even worsened. It is not enough to just implement policies but to take active participation in making a difference. In the case of Germany one can see the motivation and the participation in providing the necessary measures to rid European seas of the pressure. In the end, it is up to time to see if the MSFD will effectively influence the marine environment and enhance its protection. Further it is up to time to see how Germany implements the objectives and targets; therefore it is important to not let this topic slide but further conduct research.

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