UNIVERSITY OF AGDER

What are the consequences of overfishing in West-Africa, and how can sustainable and flourishing fisheries be promoted?

Master's Thesis

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This Master's Thesis is carried out as a part of the education at the University of Agder and is therefore approved as a part of this education. However, this does not imply that the University answers for the methods that are used or the conclusions that are drawn.

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Abstract

Overfishing is a worldwide phenomenon and an issue at global scale. It is a problem that cannot be solved alone by the efforts of a single country, but it requires a substantial amount of efforts from both countries and international organizations to successfully mitigate and eliminate overfishing. How can fisheries promote flourishing and sustainable development in inadequate institutions, and how is it possible to know that fishing activities are just and fair or basic human rights being violated? What are the consequences of overfishing, and who are held responsible? In this thesis, the fisheries partnership agreements between the European Union and Senegal are the main focus. The theoretical frameworks of ethics and justice, human rights, utilitarianism and responsibilities will be used to analyze the case of fisheries partnership agreements between the European Union and Senegal. Other West African countries will also be taken into consideration. IUU fishing activities, bycatch and discards are also problems related to overfishing. These are some of the variables that will be put under investigation. The case of fisheries agreement between the European Union and Senegal is one of many examples where developed countries may have taken advantage of developing countries with weak governance through fisheries agreement. Excessive and irresponsible fishing activities have led to overfished waters, which in turn may negatively influence poor fishing communities. Institutions are inadequate to prevent people from harm, and basic human rights may have been violated, which result in pain and misery.

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Acronyms and Abbreviations

The following acronyms and abbreviations are used in this thesis:

ACP	African, Caribbean and Pacific (Countries)
BRD	Bycatch Reduction Device
BSAI	Bering Sea Aleutian Islands
CCRF	Code of Conduct for Responsible Fisheries
CFFA	Coalition for Fair Fisheries Arrangements
CFP	Common Fisheries Policy (European Union)
CIA	Central Intelligence Agency
CTA	Technical Centre for Agriculture and Rural Cooperation
EC	European Commission
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FPA	Fisheries Partnership Agreement
FOC	Flags of Convenience
HSTF	High Seas Task Force
IBSFC	International Baltic Sea Fishery Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
ICSF	International Collective in Support of Fishworkers
IFREMER	French Research Institute for Exploitation of the Sea
IUU	Illegal, Unreported and Unregulated (Fishing)
MCS	Monitoring, Control and Surveillance
MEY	**Maximum Economic Yield**
MLS	Minimum Landing Size
MNC	Multinational Cooperation
MSY	**Maximum Sustainable Yield**
NAFO	Northwest Atlantic Fisheries Organizations
NGO	Non-governmental Organization
PRSP	Poverty Reduction Strategy Papers
SCRS	Standing Committee on Research and Statistics

SOFIA	The State of World Fisheries and Aquaculture (FAO)
TAC	Total Allowable Catch
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	**United Nations Development Programme**
UNEP	United Nations Environment Programme
UNFSA	United Nations Fish Stocks Agreement
WWF	World Wide Fund for Nature

Summary

The most important source of protein in Senegal is fish, and it accounts for more than 75% of the total protein consumption. More than half of the Senegalese population lives below the poverty line, and fish is a relatively cheap source of protein. Fish also generates employment opportunities and a source of income for the Senegalese population. The fisheries sector generates roughly 600,000 direct and indirect jobs in Senegal. This makes the country highly dependent on fish.

The problem of overfishing is negatively influencing the fisheries sector and the people living in Senegal. The majority of the fish stocks in West African waters are currently in the state of depletion or collapse. Moreover, it may have exacerbated the food crisis, and increased the competition between industrial trawlers and small-scale fishing vessels in Senegal. Despite the lack of food, the majority of the catch is being exported. The fish price has also increased, which keeps people in Senegal from purchasing not only high-valued species but also low commercial-valued fish species. Consequently, the Senegalese population was forced to migrate to Europe for the lack of fish, food, income and quality of life. In the voyage to Europe, many people lost their lives at sea. Around 6,000 people either died or disappeared at sea.

The Senegalese government is driven by corruption and foreign fishing nations (e.g. from the EU, Japan, Russia, China) are taken advantage of the weak governance for personal gain. Although, there are other fishing nations who contributes to deplete fish stocks from the West African waters, the EU is usually criticized by NGOs and the media for their actions in developing countries. The case of fisheries agreement between the European Union and Senegal is the main focus of this thesis. The European Union is one of the world's largest markets for fish and sea-food products. However, fish stocks in the European Union are overexploited (42%) and depleted (7%). For this reason, the EU is not self-sufficient and highly dependent on third-countries' fish stocks to meet the increasing demand. Therefore, it is often argued that the EU dispatches their fishing fleets to other developing countries in order to transfer their problems of overfishing to developing countries. Fish provided through fisheries agreements with developing countries accounts for a quarter of the fish consumed in the EU.

The state of the world exploitation of marine fish stocks had increased significantly in the last few decades. In 2008, 28% of the world fish stocks are overexploited, 3% depleted and 1% is

in the state of recovering. Conversely, underexploited and moderately exploited world fish stocks reducing with 3% and 12% respectively. This gives serious concern to world fisheries as the majority of the world fish stocks are moving towards a trend where most fish stocks are in the state of collapse. In the EU, catches beyond sustainable levels have increased from 10% to 21% in 2000 to 2006. This means that unsustainable catches have doubled. Half of the world's marine and inland fish catch is contributed by small-scale fisheries. Most of these fish catches are used for direct human consumption. 80% of fish exports that originates from Africa are supplied to the European market, and 66% of the total exports from Senegal are supplied to Europe.

As regard to bycatch and discards; global discards of fish is estimated to be 7 million tons annually. Industrial large-scale fisheries tend to have a relatively higher discard rate relatively to small-scale fisheries. The EU territorial waters have a high rate of discards in general. Due to the lack of information, it is assumed that discards in small-scale fisheries in West-Africa is low. In Senegal, the discard rate of some shrimp fleet is estimated to be around 63%. The total value of losses worldwide due to IUU fishing is estimated to be between $10 billion and $23.5 billion annually. In terms of tonnage, it is equal to about 11-26 million tons. This means that 13% to 31% of the total reported catches in the world are lost to IUU fishing each year.

1.0 Introduction

In this thesis, Senegal and its fishery agreements with the European Union will be the main focus of the thesis. The reason is to narrow down the area of study. However, the other countries in the Sub-Saharan West Africa will also be taken into account.

The purpose of the thesis is to find out the consequences of overfishing in the Sub-Saharan West African coastal countries, and seek how the European countries have contributed to overfish the West African waters through the case of fisheries partnership agreements between the European Union and Senegal. Recommendations of how flourishing and sustainable practices for the fishing communities in West Africa can be promoted will be presented.

1.1 Study Objectives

The main study objective of the master's thesis is to seek key solutions for the problem of overfishing in terms of recommendations and suggestions to promote sustainable development. Through the case of fisheries agreement between the European Union and Senegal, the question of ethics will be put to the test. The European Union is operating in jurisdictions where institutions seem to be inadequate to prevent people from harm, to promote justice, human rights, flourishing lives and happiness with the absence of pain and misery. The consequences of overfishing in the West African coastal waters are devastating to the local fishermen and the population in Senegal, which their lives are dependent on fish as a main source of food and income. Thus, the main focus in this thesis is also the local population who suffers from the consequences of overfishing.

1.2 Research Question

The research question of the thesis is expressed as follows:

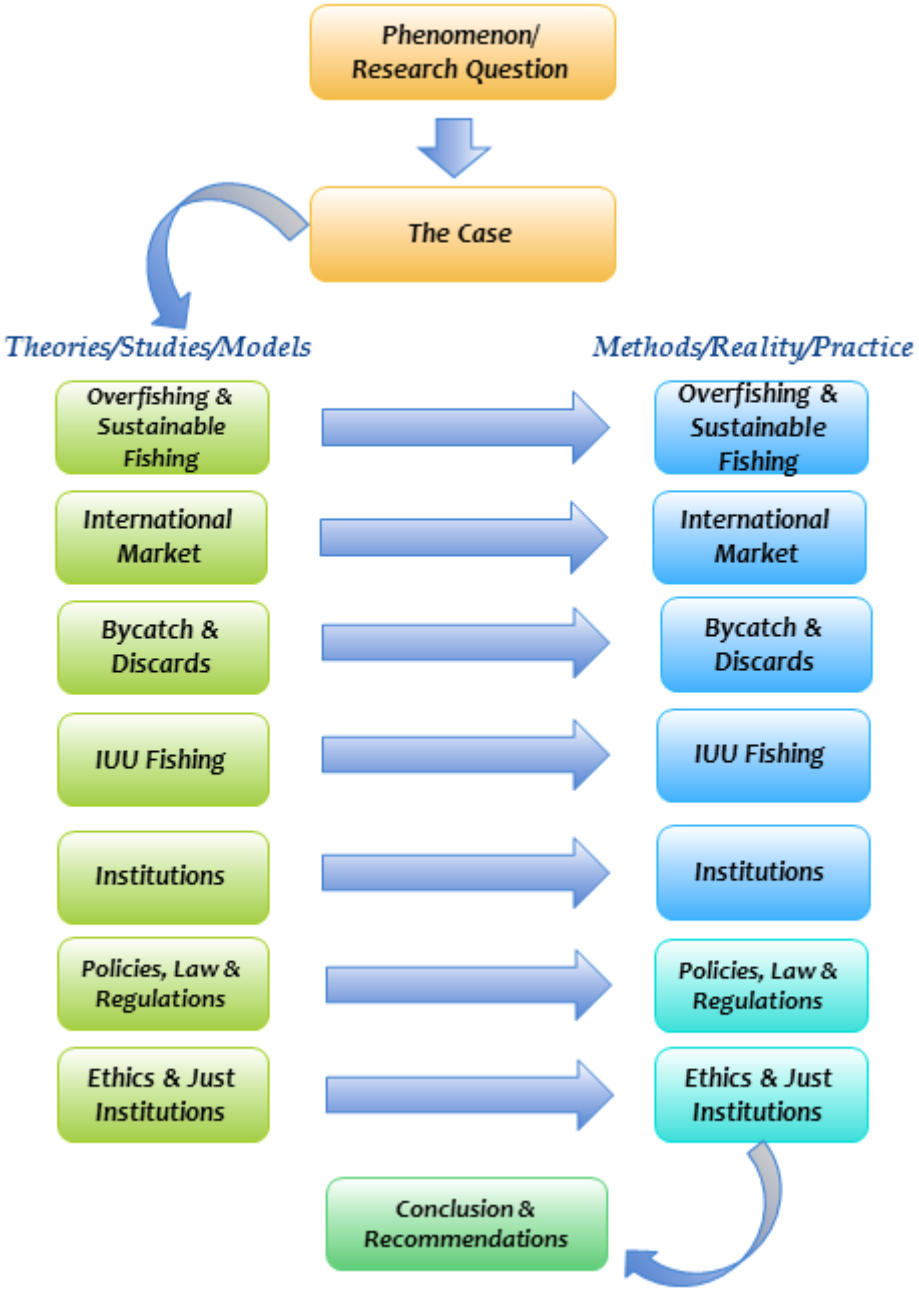
"What are the consequences of overfishing in West-Africa, and how can sustainable and flourishing fisheries be promoted? West-Africa versus Europe"

In the attempt to successfully seeking the answer to the selected research question, it is believed that there are several variables that may play a major role as driving forces behind the question of overfishing or exploitation of marine resources. In the case of the fisheries agreements between the European Union and Senegal, it is believed that these factors may contribute to explain the phenomenon of overfishing; the international market for fish and seafood products, the illegal, unreported and unregulated (IUU) fishing, bycatch and discards,

the policies (e.g. the EU's Common Fisheries Policy), and the law and regulations (e.g. UNCLOS), and; the theory of ethics. In order to answer the question of how sustainable and flourishing fisheries could be promoted, recommendations will be presented and the theory of ethics will be of use. The situation between the European Union and the West-African countries is to be tested through the three basic principles for 'the good', basic human rights, utilitarianism and responsibility to see if the parties are just or unjust and whether institutions are adequate or inadequate. The conclusion of the master thesis will be based on recommendations and suggested actions for how the problem of overfishing could be mitigated or eliminated.

1.3 Thesis Structure

The thesis is structured in such a way that the theory of each variable will be first introduced which will then be closely followed by what is happening in practice, i.e. the findings, the reality, and the methods. For example, the theoretical part of 'bycatch and discards' will be first introduced and then the practical part will be immediately presented followed by the recommended solutions. A small structural model will be used to guide the reader throughout the thesis and at the same time serve as a reminder of where the reader is currently located in the thesis. This model will be presented at the beginning of each section. The structural model could be found on the next page.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2.0 The Case of the European Union and Senegal

2.1 Basic Facts about Senegal

The Republic of Senegal covers a land area of 196,722 km^2 where the coastline is 531 km long (CIA, 2012). With such a long coastline, it does not come as a surprise that the sea and its resources are the main wealth of the country (Iossa, Niang, & Polack, 2008). The Central Intelligence Agency (CIA) of the United States of America estimated the population of Senegal to be approximately 13 million in 2012. According to Iossa et al. (2008), over half of the Senegalese population lives below the poverty line, i.e. 54% of the total population in 2001 according to the estimate from the CIA (CIA, 2012; Iossa, et al., 2008, p. 1). Senegal is a member of the Economic Community of West African States (ECOWAS). ECOWAS consists of a total of fifteen member states. These include Cape Verde, Benin, Burkina Faso, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo (Lundstedt, 2009).

2.2 The Importance of Fish

In Senegal, the most important source of protein is fish (Iossa, et al., 2008; UNEP, 2002). According to UNEP (2002), fish accounts for more than 75% of the protein consumption in Senegal. While Iossa, et al. (2008) estimated the protein intake of fish to be around 70% of the total protein consumption. As a matter of fact, fish is a relatively cheap source of protein that is consumed by both the rural and urban population in Senegal (Iossa, et al., 2008, p. 2; UNEP, 2002). Other source of animal protein, such as chicken, beef and mutton, are relatively more expensive than fish and fishery products. By this means a higher purchasing power is required, in which the population in Senegal do not have since more than half of the population live below the poverty line (Iossa, et al., 2008). Thus, fish is not only essential for the Senegalese government's food security policy, but it is also important for the majority of its population (UNEP, 2002). The UNEP (2002) stated that *"in view of the importance of fish in meeting the population's protein needs, the threat of resource depletion is thus coupled with a threat to food security"* (p. 58). Moreover, the fisheries sector in Senegal generates around 600,000 direct and indirect jobs for the Senegalese people.

2.3 The Problem of Overfishing in Senegal

Although, the fishing sector is no doubt a crucial factor for the survival of many people's lives in Senegal, the country is also influenced by the worldwide issue of fish stock depletion due to overexploitation of marine resources that is causing extensive damage to the industry today. According to an article from the New York Times (2008), small fleets of industrial

trawlers have cleared the West African ocean floor out of fish, and those responsible include the European Union, China and Russia (New York Times, 2008). As a result, the majority of the fish stocks in West African waters are now in the state of collapse or depletion. The consequences that follow are particularly severe in Senegal, since more than half of the population lives below the poverty line. Iossa et al. (2008) explicitly stated that "*the depletion of fish stocks is exacerbating the food crisis in Senegal"* (p. 3). This particularly concerns high value species or coastal demersals, e.g. lobster, cuttlefish, octopus, shrimp, sea beam, threadfin, sole and grouper, as they are in great demand (Iossa, et al., 2008, p. 3). Due to the high market value of these species, the country is encouraged to export to the European market.

The world's fish stocks are in decline. One issue of particular concern regarding this is the increase of competition between large industrial trawlers and the traditional Senegalese fishermen in small pirogues[1] in which has intensified over the years (Iossa, et al., 2008). While this fierce competition has increasing, the earth's fish stocks have been declining (Nordberg, 2003). As a result, marine resources are limited and scarce. Since high value species and coastal demersals are in great demand, they account for approximately 25% of the total catch in terms of tonnage (Iossa, et al., 2008). Due to these species' high market value, the competition between the are especially fierce and fishing of these species are mainly for export purposes (Iossa, et al., 2008). In addition, the playing field for catching fish is not even between the parties as industrial vessels had been frequently spotted in fishing areas that are intended for small-scale, traditional fishing (Iossa, et al., 2008, p. 7). According to Iossa et al. (2008), industrial vessels are not allowed to fish inside the area of 6 miles off the coast, which is considered a zone reserved for artisanal fishing only (Iossa, et al., 2008). Thus, jeopardizing their own lives, traditional fishermen are then force to sail out to dangerous waters in their pirogues, which is only suitable for sailing along the coastline due to their small size, in order to compete in what is considered a losing battle against the enormous industrial trawlers (Iossa, et al., 2008).

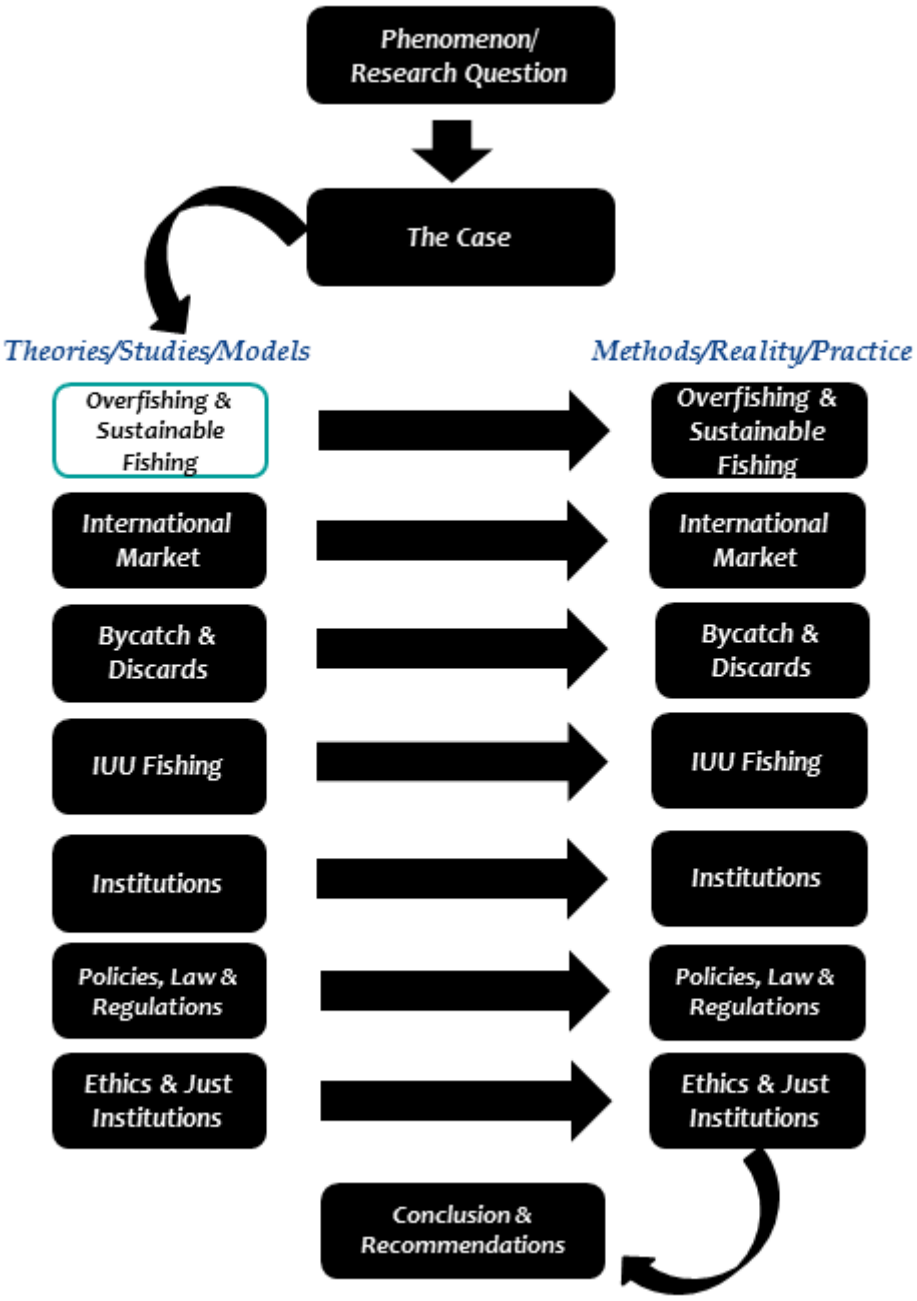
In addition to the problem of increasing overexploitation of marine resources, malnutrition has become another problem that Senegal is currently experiencing (Iossa, et al., 2008). Local fish prices have increased due to the increasingly high demand in which encourage fish

[1] A pirogue is a motorized wooden canoe. In this thesis, pirogues and traditional fishermen are terms used simultaneously with the term "artisanal fishery". Generally, these terms are referred as small-scale marine fisheries. In the case of Senegal, **"all inland fisheries are small-scale"** (See table in "big numbers project").

exports. In turn, the price increase keeps the majority of the Senegalese population from purchasing the high value species. However, what is more troubling in the recent years is the price increase of the cheaper fish, which is no doubt a factor in worsening the food crisis in Senegal as the people can no longer afford to purchase neither the high value species nor the cheaper fish species (Iossa, et al., 2008). This particularly affects those people who already struggling against poverty and famine.

As a result from all of the problems in Senegal, such as overexploitation of marine resources, food crisis, competition between pirogues and industrial trawlers, and the rising prices of fish, many people within the fishing communities that are affected by the depletion of fish stocks are in deeply concern for their survival. Due to the increasingly high exploitation of marine resources in the Senegalese waters, traditional fishermen catch just enough fish to buy fuel for their pirogues, which is difficult to make ends meet (New York Times, 2008). As they are on the verge of desperation, many people find themselves in a situation where there are no other options than to sell their belongings in order to immigrate illegally (Iossa, et al., 2008). In search for a new beginning and a fair chance to survive, they risk their lives by setting sail in wooden pirogues to Europe not knowing whether they will reach their destination or not. Those who manage to get to Europe are most likely going to be arrested and deported back to their home country (New York Times, 2008). In addition, the poor immigrants were fined for their illegal voyage to Europe. Due to their circumstances, many of the immigrants would have no other choice than to sell their most valuable assets, which in this case is their own pirogues, in order to get enough money to pay for the fine (New York Times, 2008).

According to an article published by New York Times (2008), over 900 pirogues with approximately 31,000 West Africans attempted to immigrate to Europe through the Canary Islands in 2007. The United Nations estimated that 6,000 of the immigrants died or disappeared during their tragic voyage to Europe (New York Times, 2008). According to Iossa et al. (2008), the total number of pirogues in Senegal in 1997 was estimated to be 10,707. However, this number had dramatically reduced nearly by half as there were only 5,615 pirogues registered in 2005 (Iossa, et al., 2008, p. 6).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3.0 Overfishing and Sustainable Fishing

3.1 Definition of Overfishing

The United Nations Food and Agricultural Organization (FAO) defines a fish stock that is overfished as follows; *"A Stock is considered "overfished" when exploited beyond an explicit limit beyond which its abundance is considered "too low" to ensure safe reproduction"* (FAO Fisheries Glossary: Overfished, http://www.fao.org/fi/glossary/default.asp, last visited Jan. 19, 2012). Thus, this means that overfishing is to excessively fish beyond what is considered sustainable levels. According to FAO (2010b), the term 'overfishing' is defined by three different phenomena; (1) the biological overfishing, (2) the economic overfishing, and (3) the ecosystem overfishing (p. 1). Hannesson (2004), also divided the term into three degrees. The two first degrees of overfishing, which are the biological and the economic overfishing, are identical to the classification provided by FAO (2010b). However, Hannesson (2004) did not include the third and last classification from FAO (2010b), which is the ecosystem overfishing. Instead, Hannesson (2004) included a classification called the 'extinction of fish stocks', which simply means that one or several fish stocks are, often carelessly and irresponsibly, exploited to the extent where the population would not be able to replenish itself, and, thus, may become extinct (p. 43).

FAO (2010b) defines biological overfishing of any exploited fish species, either target or non-target species, *"as a situation in which the fishing pressure exerted on the species is higher than the pressure theoretically required for harvesting the maximum sustainable yield (MSY), or would, if continued in the medium term, impair the population productivity"* (FAO, 2010b, p. 1). Maximum sustainable yield (MSY) means that the *"fish populations could increase and generate more economic output if they were left for only a few years under less fishing pressure"* (European Commission, 2009a, p. 7). Economic overfishing takes place when the level of fishing efforts is considered far too great in order for the fisheries to acquire the maximum rent that is obtainable from the catches (FAO, 2010b). Thus, the rent generated through the fishing efforts is much lower than what is obtainable, leaving the fisheries in a situation that is considered unfavorable, i.e. below the maximum economic yield (MEY) (FAO, 2010b). Furthermore, Hannesson (2004) suggested that economic overfishing may occur regardless of whether biological overfishing has occurred or not. Finally, ecosystem overfishing refers to the given fish specie's relationship with another, and this type of overfishing occurs when *"the long-term historical species balance […] have been significantly modified by fishing"* (FAO, 2010b). This means that if fish predators are heavily

fished out to the verge of extinction, then there will be more of those fish species that are considered to be preys, given that the chances of them being eaten have been significantly reduced. In turn, the ecosystem of the given region will be harmfully unbalanced. Note that in this example the predator is assumed to be the only fish species that eat a given fish prey.

Furthermore, the harmful effects of overfishing to any given ecosystem can either be direct or indirect (FAO, 2010b). Direct effects of overfishing are directly related to unreasonable high level of fishing activities, which causes harm to the ecosystem by excessively fishing large quantities of both targeted and non-targeted species (FAO, 2010b). On the other hand, indirect effects of overfishing harm the ecosystem in several ways. The harm caused to a species may have an effect on another. Thus, the indirect effects of overfishing may emerge from *"(1) thinning or elimination of prey populations (bottom-up forcing); (ii) excessive reduction of predators (top-down effect); and (iii) altering the size composition or the life history traits of the resource"* (FAO, 2010b, p. 2). Moreover, the direct and the indirect effects of overfishing tend to intensify as the fishing pressures are increasing (FAO, 2010b, p. 2).

Examples of fishing activities that are related to overfishing include illegal, unreported and unregulated (IUU) fishing, unreported bycatch and discards, and ghost fishing (FAO, 2010b), which will be introduced on the following sections. Ghost fishing is basically lost fishing gears that are left uncontrolled at sea, which may eventually unintentionally or accidently caught fish on its nets. It is believe that this particular problem is not relevant for the research question. Therefore, it will not be included.

3.2 The Different States of Exploitation

According to a report from FAO (2005), there are six different levels or stages to characterize the state of exploitation of fish stocks; (1) Underexploited, (2) Moderately Exploited, (3) Fully Exploited, (4) Overexploited, (5) Depleted, and (6) Recovering. Fish stocks are underexploited when the fisheries are either undeveloped or new. Thus, newly founded fisheries in a given area will have a significant amount of potential for further expansion in their total production (FAO, 2005b). When the fish stocks are moderately exploited, the level of fishing efforts are low and fisheries may find some limitations as they attempt to expand their total production (FAO, 2005b). A fish stock is considered to be fully exploited when a *"fishery is operating at or close to an optimal yield level, with no expected room for further expansion"* (FAO, 2005b, p. 213). Similar to the previous term, overexploitation of fish stocks will occur as fisheries are exploited beyond a level *"which is believed to be sustainable*

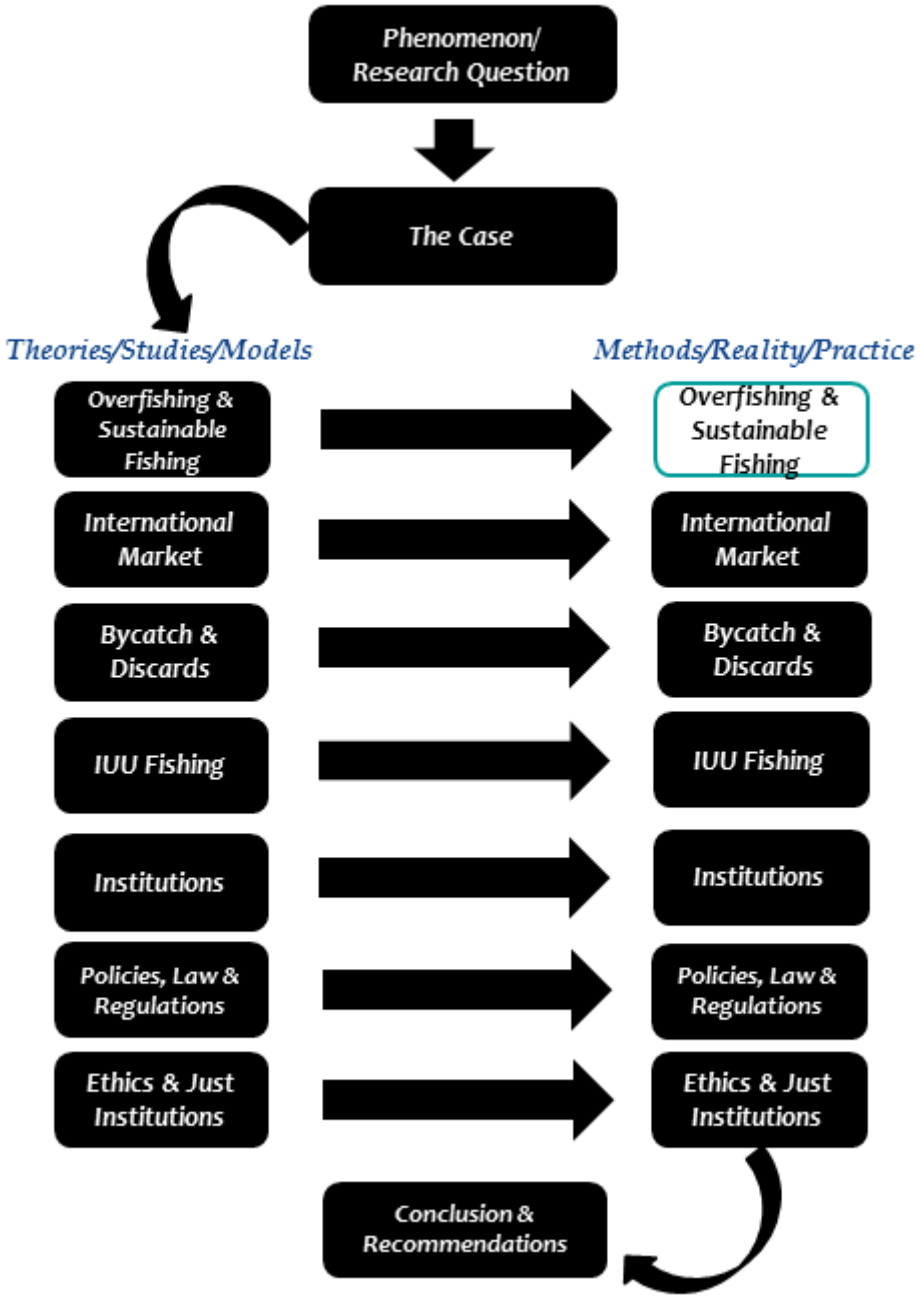
in the long term" (FAO, 2005b, p. 213). This will give them no room for further expansion in their total production. Thus, the stock will be in a high risk of depletion or collapse (FAO, 2005b). If the fisheries are being exploited even further, the fish stocks will be depleted or collapsed. In this state of exploitation, the fish stocks are in danger of extinction and *"catches are well below historical levels, irrespective of the amount of fishing effort exerted"* (FAO, 2005b, p. 213). If the exploitation is handled in a respectively manner, the fish stocks may get a chance to recover (FAO, 2005b). Thus, in order for the fish stocks to increase after being depleted, it is required that all fisheries in a given area have to end their fishing activities that exploit the sea.

3.3 Definition of Sustainable Fishing

According to the United Nations Food and Agricultural Organization, sustainable fishing is defined as *"fishing activities that do not cause or lead to undesirable changes in the biological and economic productivity, biological diversity, or ecosystem structure and functioning from one human generation to the next"* (FAO Fisheries Glossary: Sustainable Fishing, http://www.fao.org/fi/glossary/default.asp, last visited Jan. 8, 2012).

3.4 Definition of Maximum Sustainable Yield

Maximum Sustainable Yield (MSY) is defined by WWF (2011) as follows; *"The maximum sustainable yield (MSY) for a given fish stock means the highest possible annual catch that can be sustained over time, by keeping the stocks at the level producing maximum growth. The MSY refers to a hypothetical equilibrium state between the exploited population and the fishing activity"* (p. 1).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Conclusion & Recommendations

3.5 State of World Fisheries

The state of the world exploitation of marine fish stocks has since the 1970s increased substantially. FAO (2010a) identified that 32% of the marine fish stocks were either in the state of overexploited (28%), depleted (3%) or recovering (1%) in 2008 as opposed to 10% in 1974 (p. 8). Thus, giving the high fishing pressure to most fisheries due to the continually increasing demand, the remaining amount of fish stocks would give less maximum potential production to the fisheries, as 32% of the fish stocks are either overexploited, depleted or recovering (FAO, 2010a, p. 8). This would call for a need for rebuilding plans as the overexploited or depleted stocks would be in a dangerous state of extinction if these stocks are continuously being exploited. Moreover, the combined percentage in 2008 was the highest recorded percentage in the period from the mid-1970s to 2008. While the proportion of overexploited, depleted or recovering marine fish stocks have gone up during the period from 1974 to 2008, the stocks that are either underexploited or moderately exploited have in fact decreased from 40% in the 1970s to 15% in 2008 (FAO, 2010a, p. 8). Furthermore, the underexploited (3%) and moderately exploited (12%) stocks monitored by FAO in 2008 were in fact the lowest percentage ever recorded since the 1970s (FAO, 2010a).

Despite the considerably decrease of underexploited or moderately exploited stocks and the increase of overexploited, depleted or recovering stocks, marine fish stocks that are fully exploited have been relatively stable during the same period. Fully exploited stocks in the period of 1970 to 2008 accounted for nearly 50% of the world marine fish stocks (FAO, 2010a, p. 8). In 2008, fully exploited marine fish stocks were monitored as being slightly more than 50%, which indicates that the current world catches are imminently close to the maximum sustainable production (FAO, 2010a, p. 8). At this point, there will be no room for further expansion. The trend of where the marine fish stocks are heading towards to, give reasons for serious concern as the percentage of overexploited, depleted and recovering fish stocks are continuously increasing, whereas the percentage of underexploited and moderately exploited stocks are considerably decreasing over the years (FAO, 2010a). It is estimated that approximately *"half the amount of fish available in 1970 would be available by 2015 and only one-third in 2050"* (UNEP, 2011, p. 87). Unless considerable action is taken, all commercial fisheries will share the faith of being collapsed by 2050 as researchers estimated (AFP, 2010).

3.6 Sustainable Fishing and the European Union

In the European Union, there has been made great improvements between the period of 2003 and 2005 as far as fish stocks conservation is concerned (European Commission, 2009d). However, in the following year in 2006, it has been reported that the overall fish catch or exploitation of fish stocks has been beyond sustainable levels. Catches beyond sustainable levels have, according to the European Commission (2009d), increased from 10% to 21% in the period between 2000 and 2006. Thus, unsustainable catches have been more than doubled in this period despite the efforts that have been made to mitigate overfishing in 2002 and 2005 (European Commission, 2009d). This raises serious concerns of the state of the fish stocks in the EU waters.

The continuously overexploitation of fish stocks beyond sustainable levels has not only cause a significant decline in fish stocks, but it has also caused a decline in employment in the fishery sector within the EU (European Commission, 2009d). For a very long time, the exploitation and consumption of natural resources (i.e. including fish or marine resources) has been a major factor in contributing to the EU's economic growth and welfare (European Commission, 2009d). As fish stocks are overexploited and, consequently, the amount diminished, the human welfare in the EU may also be lost in some degree (European Commission, 2009d).

Clearly, the trends in fish stocks conservation in the EU have been unfavorable (European Commission, 2009d). Biodiversity is under pressure, and fish stocks are undoubtedly threatened. According to the European Commission (2009d), the EU fishing fleet has been decreased in order to cope with the decrease in available fish stocks. However, the same could not be said for the fishing capacity as it still remains at the same level due to technological advancements. Furthermore, assistance to developing countries as in the EU's international commitments have been greatly reduced (European Commission, 2009d, p. 10).

The EU's response to the rapidly diminishing fish stocks in their waters is to promote sustainable use or consumption of the remaining fish stocks. In addition to the potential damage to the ecosystem systems, overfishing may cause substantial economic damage to the fishing sector (European Commission, 2009d). According to the European Commission's Green Paper on the Reform of the Common Fisheries Policy (2009a), *"economic and social sustainability require productive fish stocks and healthy marine ecosystems. The economic and social viability of fisheries can only result from restoring the productivity of fish stocks."*

(p. 9). In the short-term, the ecological, economic and social objectives may be in conflict. For instance, there are in some cases where fishing activities have to be reduced for a limited time in order for overexploited fish stocks to replenish themselves (European Commission, 2009a). Some parts of the social objectives could be related to employment. In some cases, unemployment may be reduced by granting new jobs opportunities through increasing fishing activities for a limited of time. However, such action may bear risks associated with the fish stocks concerned as well as all threaten the individuals, groups and communities that may be highly depend on the given natural resources in order to make a living and to survive (European Commission, 2009a). Thus, in both cases, the fishermen whose lives are dependent on fish resources seem to be in a lose-lose-situation due to the fact that further restrictions on fishing activities will result in less fish to catch, and the same could be said about an increase in fishing activities – the fish stocks may not have enough time to replenish themselves in which means that there are less fish to catch at sea. Thus, it is essential to take into consideration how minimizing fishing activities may influence the economic and social objectives as well. According to the European Commission (2009a), the ecological sustainability is *"a basic premise for the economic and social future of European fisheries"* (p. 9). In the long-term one should aim to promote ecological sustainability, which is to ensure catches stay within the MSY, mitigate IUU fishing, reduce bycatch and discards, and minimize the overall ecological impact (European Commission, 2009a).

3.7 Sustainable Development and Human Rights Approach

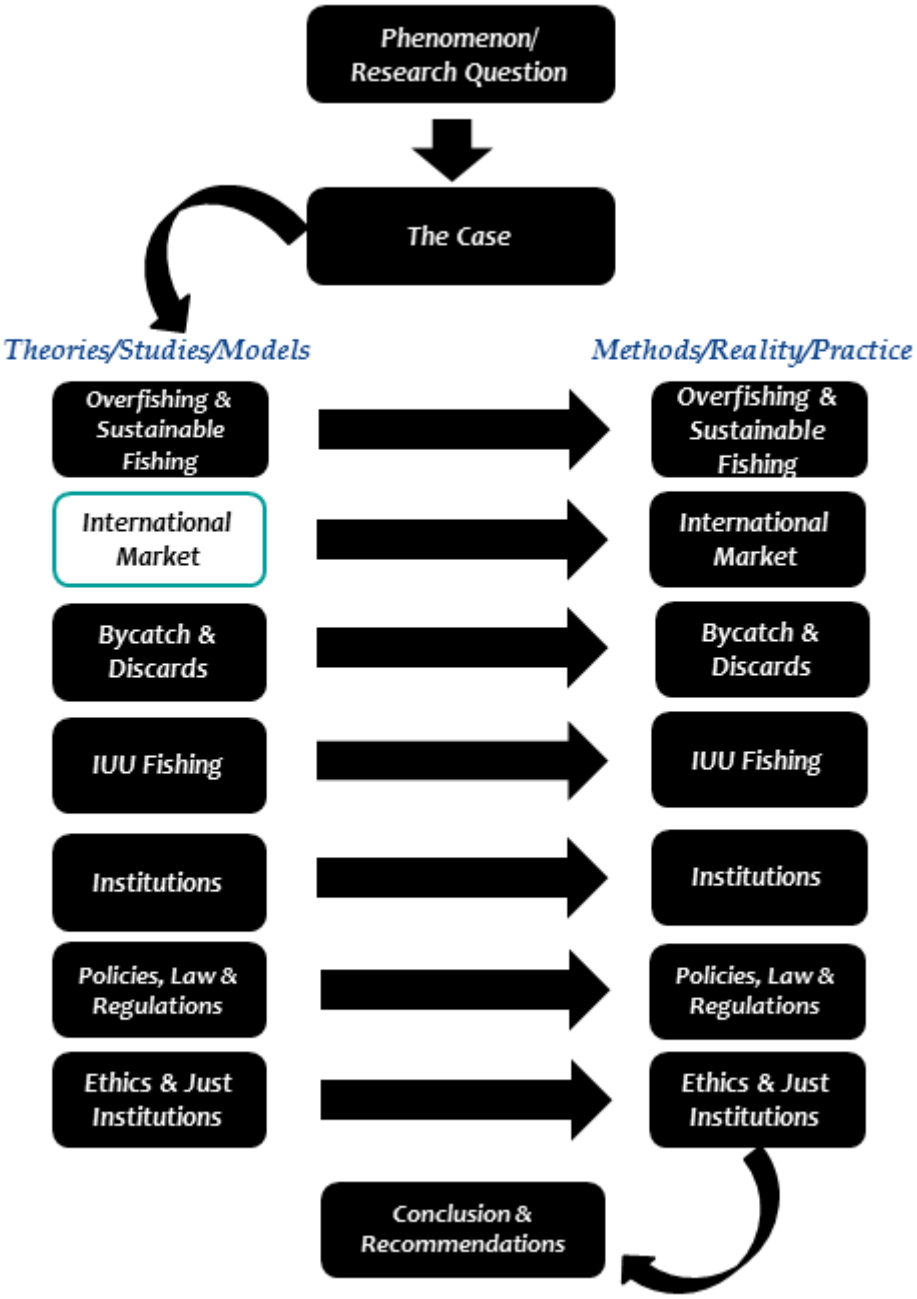
In the global conference on small-scale fisheries in Bangkok in 2008, Dr. Edward H. Allison suggested that there is a need to adopt *"a human rights approach to sustainable development of small-scale fisheries"* (FAO, 2009b, p. 15). The terminology "rights based approach" is used by analysts in economic and social development. Analysts in the fishery sectors have been adopting the same terminology as well. The aim of the human rights approach is to establish cross-sectoral partnership in order to addressed social development issues in developing countries. The sectors that needs to be included are non-governmental organizations, international organizations, various of government departments and bi-lateral agencies (FAO, 2009b). According to FAO (2010a), *"the human rights approach stresses the importance of removing obstacles, such as illiteracy, ill health, lack of access to resources, and lack of civil and political freedoms, that prevent people from doing legitimate activities that they want to do"* (p. 72). It was further suggested that the Universal Declaration of Human Rights and its supported legal framework may have the potential to contribute to

guide both *"investment and development action in securing sustainable small-scale fisheries"* (FAO, 2009b, p. 15).

Given the circumstances of those who work as fishers and as workers in the post-harvest sectors in small-scale fisheries in developing countries, these people often have to face daily challenges and subsequently have to deal with many uncertainties in their lives (FAO, 2009b). Thus, the concern for overfishing and the potential of fish stock decline or even collapse may not be perceived as an immediate threat to their livelihoods and well-being (FAO, 2009b, p. 15). As a result, the concerns from these communities may rather be directed towards issues related to their immediate or basic needs. These include issues such as *"rights to food, justice representation, health (malaria and other common illness), decent work and dignified lives"* (FAO, 2009b, p. 15). Therefore, unless these issues are addressed first, then there may be a lack of incentive and effort from the local fishermen to participate in resource management. By establishing a cross-sectoral partnership, there is a belief that the well-being of the people and the fishery communities will be improved (FAO, 2009b). This may lead to the increase support and contribution to responsible fishing in which may further lead to poverty reduction and food security (FAO, 2009b). Thus, according to FAO (2009b), in the order that the agenda is based on is to first of all strengthen the human rights, secondly the access or property rights need to be reinforced, and, thirdly, the markets need to be invested in. It is argued that by adopting the *"human rights based framework for these efforts would strengthen the ability of government fishery departments and other fishery organizations to support fishing communities in securing their development, including their role in sustaining the contribution of fisheries to the wider economy"* (FAO, 2009b, p. 15).

During the Global Conference on Small-Scale Fisheries in 2008, Sharma (2008) also stressed the importance of adopting the human rights approach. However, her point of view is rather towards securing social, economic and cultural rights of fishworkers and fishing communities (Sharma, 2008). According to Sharma (2008), *"given the international consensus on achieving human rights, the […] committed action to realizing the human rights of fishing communities, as indeed of all vital, yet marginalized groups and communities, is really not a matter of choice. It is an obligation"* (p. 1). There is in strong belief that the adoption of a human rights approach may significantly improve the life and livelihood of the fishing communities, i.e. including marginalized groups and communities (Sharma, 2008). Furthermore, Sharma (2008) suggests that it may contribute to strengthen the development in a given country in terms of establishing *"a strong basis for citizens to make claims on their*

States, and for holding States to account for their duties" (p. 1). Thus, in order to successfully implement the human rights approach, it is required from both the given State (the duty bearers) and the fishing community as well as the fishworkers (the citizens) *"to be aware of, and to claim and exercise their rights effectively, and of duty-bearers to fulfill their human rights obligations"* (Sharma, 2008, p. 1). In his work titled 'A human rights approach to development: Primer for development practitioners', Tomas Amparo (2005) defined, in general, a human rights approach as follows: *"a framework for the pursuit of human development that is normatively based on, and operationally directed to, the development of capacities to realize human rights"* (Tomas, 2005, as cited in Sharma, 2008, p. 4). Thus, UNDP (2000) stated that human rights and human development may *"share a common vision and a common purpose – to secure the freedom, well-being and dignity of all people everywhere"* (p. 1). Thus, the challenge is to figure out how and what is needed in order for small-scale fishing communities to secure their freedom, well-being and dignity. By freedom, UNDP (2000) means *"freedom from discrimination – by gender, race, ethnicity, national origin, religion; freedom from want – to enjoy a decent standard of living; freedom from fear – of threats to personal security, from torture, arbitrary arrest and other violent acts; freedom from injustice and violations of the rule of law; freedom of thought and speech and to participate in decision-making and from associations"* (p. 1). According to UNDP, *"human freedom is the common purpose and common motivation of human rights and human development"* (UNDP, 2000, p. 2).


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Conclusion & Recommendations

4.0 International Market

4.1 International Market for Fish

One of the world's most important renewable resources is *fish*. This renewable resource plays an important role to a significant portion of the world's population for both their survival and health (UNEP, 2011, p. 84). According to United Nations Environment Programme's (UNEP) Green Economy report (2011); *"Marine fisheries provide nutrition and livelihoods for millions of people in coastal communities, notably in South and South-East Asia, West Africa and Pacific Island states"* (p. 84). However, the fisheries managers and policy-makers often find themselves in trade off situations where they are *"under pressure to sacrifice the long-term health of marine fish resources in favour of perceived short-term economic benefits to the fishing industry and consumers"* (UNEP, 2011, p. 85).

As many of the international commercial fish stocks are fully exploited, overexploited or are in the state of collapse, the worldwide demand for fish and fish products continues to increase which has led to an increase in the international fish trade as well. This resulted in a global crisis which will have a major impact on the whole industry in the nearest future. From the report of UNEP (2009), it clearly stated that "*action undertaken by governmental and intergovernmental institutions has fallen short on redressing the crisis*" (p. 6). They argue further that this situation was driven by numerous factors related to unsustainable consumption and production patters (UNEP, 2009, p. 6). These factors include *"increasing consumption levels, over-fishing and unsustainable aquaculture, as well as the contribution of pollution and climate change"* (UNEP, 2009, p. 6).

The estimates provided from the report stated that *"38% of fish production (capture and aquaculture combined) enters international markets"* (UNEP, 2009, p. 15). According to FAO (2007b), fish captures in the wild are estimated to be 95 million tonnes a year where 9.2 million tonnes are captured by inland fisheries and 85.8 million tonnes are captured by marine fisheries. It is further stated that fish captures in the wild has reached a new record. Moreover, including the marine and inland capture fisheries and fish farming, the global fisheries production has reached a total of 141.6 million tonnes annually (FAO, 2007b). From this total, 75% or 105.6 million tonnes are produced for direct human consumption, while the rest is used for non-food products, e.g. the manufacture of fishmeal and fish oil, culture, bait, pharmaceutical uses, direct feeding in aquaculture, and fur animals (FAO, 2007b, 2010a; UNEP, 2009, p. 17). The most recent report from FAO shows that the global fisheries

production has increased to 144.8 million tonnes annually in 2009 and it is expected to increase to around 151.7 million tonnes by the end of 2011 (FAO, 2011b). Approximately 81% (118 million tonnes) of the total world fish production was used for human consumption in 2009, whereas the rest of the total production (26.8 million tonnes) was used for non-food products (FAO, 2011b). Thus, there has been a significant increase in the percentage of the total production used for direct human consumption.

In the 1970s the world per capita consumption of fish and fishery products increased from 11.5kg to 14.8kg in the 1990s, which is considered a steady growth (UNEP, 2009, p. 15). According to FAO (2007a), the global per capita fish consumption has continued to grow over the years. In 2001-2003 the per capita of fish consumption grew to an average of 16.4kg (FAO, 2007a, p. 42). Furthermore, it has increased to 17.4kg in 2007 and 17.8kg in 2011 (FAO, 2007a; FAO, 2011). However, FAO (2007a) stated that the high growth of the per capita consumption of fish at the international level is *"strongly influenced by China's dominance"* (p. 42). Given their population of approximately 1.3 billion people in 2007 (UNEP, 2009, p. 15), China's domestic consumption of fish and fishery products per capita went from less than 5kg in the 1970s to a per capita consumption of 26kg in 2007 (FAO, 2007a, p. 42). Thus, the Chinese population has contributed considerable to the high growth in the global per capita fish consumption (FAO, 2007a). According to UNEP (2009), it is rather logical that China's domestic consumption of fish and fishery products per capita has risen so rapidly in a short period of time, since fish is an important protein source for people living in the Asian countries and it accounts for 54 per cent of their total amount of protein intake.

FAO (2007a) argues that there are some large differences across regions when it comes to fish consumption per capita (p. 43). South America and Africa have consumption levels which are considered below-average or stable. However, the major concerns are in the region of Africa where there are low absolute levels of consumption and at the same time having a strong growth in the population (FAO, 2007a, p. 43). Europe is one of the regions that are facing a situation of having high consumption levels while their fish stocks are rapidly decreasing. Thus, they are *"looking towards regions like Africa, where consumption and production are currently low, to source their fish"* (UNEP, 2009, p. 17). UNEP (2009) further argues that *"this adds dangerously to the increased pressure caused by local population growth"* (p. 17).

The majority of the fish and fishery products that come from aquaculture are often intended for human consumption (FAO, 2010a). Over the past four decades, there has been rapidly increasing growth in the international production of fish that comes from aquaculture (Huang, Xu, & Qiao, 2007). In 2008, as much as 45.7% of the world's food fish production destined for direct human consumption was contributed by aquaculture alone (FAO, 2010a), and the growth in aquaculture is expected to increase further more over the years (Huang, et al., 2007). Thus, aquaculture is considered to grow faster than other food producing sectors in the world, i.e. when it comes to the quantity produced from aquaculture and its relatively contribution to the world fish supply (UNEP, 2009, p. 17). According to Huang et al. (2007), the contribution from aquaculture is expected to increase to 50% by 2015. This means that the quantity of the world's food fish supply contributed by aquaculture will be equal to the world's supply of food fish that comes from capture fisheries. The amount of fish supplied through aquaculture for direct human consumption would be equal to the supply of the world's food fish production that comes from capture fisheries. According to UNEP (2009), aquaculture only supplied 9% of the fish that was produced for direct human consumption in 1980. However, in the recent years, these numbers have changed significantly as aquaculture accounted for approximately 38% of the total fish production and around 47% of the fish consumed by humans in 2009 (FAO, 2011b).

As the food fish production provided by aquaculture in 2008 has reached 52.5 million tonnes worldwide, aquaculture currently remains one of the most important production sectors that supply high-protein food (FAO, 2010a). In comparison to the production from aquaculture in 2008, the annually production from aquaculture in 1950 only accounted for 1 million ton (FAO, 2010a). Thus, FAO (2010a) reported that the growth of world aquaculture production from 1950 to 2008 was tremendous as it increased with *"three times the rate of the world meat production [...] in the same period"* (FAO, 2010a, p. 18). On the other hand, there has not been any significant growth in the world production of capture fisheries since the 1980s (FAO, 2010a). According to FAO (2010a), *"in the period 1970-2008, the production of food fish from aquaculture increased at an average annual rate of 8.3 percent, while the world population grew at an average of 1.6 percent per year"* (p. 18). This means that the food fish produced from aquaculture for human consumption increased by ten times in the period between 1970 and 2008, i.e. 0.7kg in 1970 to 7.8kg in 2008 (FAO, 2010a). According to UNEP (2009), *"the increasing fish consumption in a context of over exploitation and dwindling fish stocks has encouraged the rise in aquaculture"* (p. 17).

According to UNEP (2011), there are two major issues regarding the total world fish supply from aquaculture; (1) the fish supply from aquaculture increases as the supply from capture fisheries decreases; and (2) the aquatic plants have contributed to the increase of aquaculture supply (p. 90). According to an impact assessment from the European Commission (European Commission, 2011a), *"aquaculture has negative environmental sustainability impacts related to water pollution by farms, use of antibiotics, the problem of escapees (farmed animals, usually genetically modified, escape from farms and mix and breed with wild stocks) and the fact that feeding the farmed (mostly carnivorous) species requires catching wild fish"* (European Commission, 2011a, p. 16).

According to UNEP (2009), one of the main issues that concerns the fishing industry internationally is *"the condition of stocks of fish species in high seas areas, outside national jurisdictions"* (p. 14), i.e. outside the economic exclusive zone (EEZ). The report from UNEP (2009) further stated that over half of straddling stocks and migratory species (e.g. sharks) are overexploited or depleted (p. 14). In this context, straddling stocks means those fish species which *"migrate between, or occur in both, the economic exclusive zone (EEZ) of one or more States and the high seas"* (UNEP, 2009, p. 14), e.g. Pollock.

According to the European Commission (2011a), fish processing was mostly performed locally after the catch has been landed. This is called the primary processing. However, in modern times, fish are processed with the usage of imported raw materials. This is called the secondary processing, which had made aquaculture increasingly more important. The secondary processing activities have created *"new opportunities in areas where the catching sector and primary processing are in decline"* (European Commission, 2011a, p. 16).

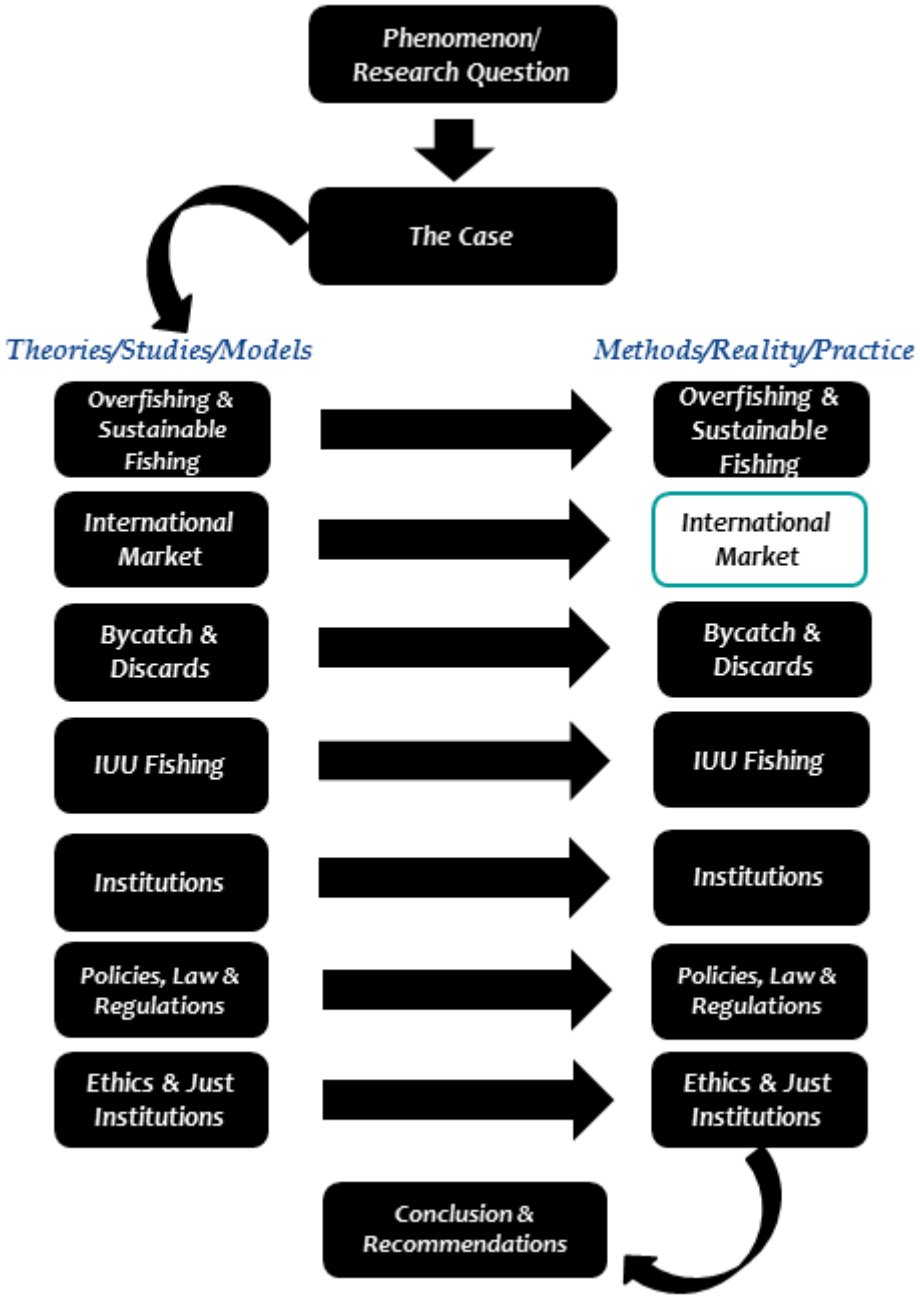
4.2 Employment in Small- and Large-Scale Fisheries

According to the preliminary results provided by the joint activity of FAO and World Fish Center (2008), which was sponsored by the World Bank, employment in the fisheries sector accounted for approximately a total of 30 million people worldwide. This estimate included both fulltime and part-time fishers. Furthermore, this study showed that 90 % of the fishers employed worldwide in the fisheries sector are from developing countries (FAO & World Fish Center, 2008). Another estimate provided by the joint-effort of the World Bank, FAO and the WorldFish Center (2010) shows that there are overall 35 million fishers in the world that are working both fulltime and part-time. Small-scale fisheries account for 32 million

fishers, whereas the large-scale fisheries sector only represents 3 million fishers worldwide (World Bank, et al., 2010).

As far as the global postharvest employment is concerned, the World Bank, FAO and the WorldFish Center (2010) estimated that the global postharvest sector supports around the total of 84 million people in addition to the global number of fishers. The postharvest activities include fish processing, marketing and distribution and other related and supporting activities (World Bank, et al., 2010). At a global level, the number of jobs in the postharvest sector in small-scale fisheries accounts for a total of 76 million jobs, while there are around 8 million jobs in the postharvest sector that are generated from large-scale fisheries (World Bank, et al., 2010). These estimates are based on both developed and developing countries, and incorporate both fulltime and part-time workers.

Thus, the total workforce at the global level is around 119 million, both fulltime and part-time workers (World Bank, et al., 2010). This means that *"119 million people are directly dependent on capture fisheries for their livelihoods"* (FAO, 2010a, p. 71). Furthermore, 90% of these people are working in the small-scale fisheries sector, and 97% of the total workforce is from developing countries (FAO, 2010a). Moreover, according to the World Bank, FAO and the WorldFish Center (2010), the total percentage of women working in the fisheries sector is about 47% worldwide. That is almost half of the total global workforce. FAO (2010a) argued that the total number of people employed as fishers and as workers in the post-harvest sector may be even higher than what has been estimated. It has been suggested by FAO that this number may have reached remarkably 170 million people in the whole fishery industry (World Bank, et al., 2010). This estimate incorporates both full and part time workers and additionally includes employment in aquaculture. Most of these may have been working as seasonal fishers, mostly in Africa and Asia. However, FAO (2010a) further argued that these people who are hired occasionally *"are not recorded as "fishers" in official statistics"* (p. 70).


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Overfishing & Sustainable Fishing
International Market
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Institutions
Policies, Law & Regulations
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Conclusion & Recommendations

4.3 International Trade

According to Sharma (2008), very few small-scale fishers and fishworkers have benefited from the growing international trade in fish and fish products (p. 11). In fact, the development in small-scale fisheries has led to export-oriented fisheries (Sharma, 2008). This means that small-scale fisheries may have been pressured to export fish and fish products due to the growth of the international market. In addition, there is a lack of effective fisheries management and conservation measures that are planned or implemented in some countries. In this respect, Sharma (2008) argues that the combination of these elements may have led to overexploitation of marine resources. Furthermore, these factors may have negatively influenced the livelihoods of small-scale and artisanal fishers, fishworkers and the fishing communities as a whole (Sharma, 2008).

The fishers' and the fishworkers' economic and social rights need to be secured. In order to achieve this, sustainable management of marine resources is essential and need to be ensured by all means necessary (Sharma, 2008). This may in turn serve as a countermeasure against those countries that are subject to export pressure from the international demand for fish and fish products. Moreover, Sharma suggests that the rules of trade need to be *"structured so as to bring concrete benefits to fishing communities, through, for example, higher prices for fish, and greater employment opportunities, including in fish processing"* (Sharma, 2008, p. 11). Additionally, Sharma (2008) proposes that the livelihood and nutritional rights of small-scale and artisanal fishing communities should not be affected by policies and practices that are related to promotion of international fish trade. This proposal may be consistent with the Code of Conduct for Responsible Fisheries (CCRF) Article 11.2.15. It states as follows:

"States, aid agencies, multilateral development banks and other relevant international organizations should ensure that their policies and practices related to the promotion of international fish trade and export production do not result in environmental degradation or adversely impact the nutritional rights and needs of people for whom fish is critical to their health and well-being and for whom other comparable sources of food are not readily available or affordable"

(FAO, 2011a, Code of Conduct for Responsible Fisheries (CCRF), Article 11.2.15).

It is further argued that negotiation of bilateral, multilateral and other trade agreements should also be exercised with caution (Sharma, 2008). This is to avoid any form of adverse impacts on the small-scale and artisanal fishing communities (Sharma, 2008). This is especially in

regard to the case of EU-Senegal fishery partnership agreements. Sharma (2008) suggests that there is a need to place much greater emphasis on removing obstacles to local, national and regional trade and markets. This is important for food security and to secure economic rights, especially to women in the fishing communities.

4.4 Export Growth in Senegal

FAO (2010a) argued that *"small-scale fisheries contribute more than half of the world's marine and inland fish catch"* (p. 70). The majority of these fish are mainly used for direct human consumption (FAO, 2010a). The Senegalese fisheries sector's increase in export growth is, according to the UNEP (2002), *"largely linked to the trade mechanisms aimed at boosting exports in an adjustment context"* (p. 5). It is argued that the Lomé Agreement, which was concluded in 1982, is one of these trade mechanisms. Furthermore, it is an agreement in which binds the ACP countries with the EU. The Lome Agreement was the core reason for why there was a custom duty exemption regime for fish and fish products that originated from the ACP countries and were exported to the EU (UNEP, 2002). Thus, the Lomé Agreement was responsible for the contribution of the expansion of the Senegalese piscatorial exports (UNEP, 2002). It is argued that the Senegalese products benefited from the customs duties exemption regime of the European market by becoming even more competitive (UNEP, 2002).

In 2002, the exports of fish and fish products from the ACP countries to the European market had increased substantially. As a matter of fact, 80 % of the African exports of sea products are supplied to the European market (UNEP, 2002). Furthermore, around 66 % of the total export of Senegalese fish and fish products is supplied to Europe (UNEP, 2002). The Senegalese exported volumes of fish increased from roughly 90,000 tons in 1982 to as much as 125,000 tons in 1990 (UNEP, 2002). Thus, the volumes of fish exported by Senegal between 1982 and 1990 accounted for an increase of about 39 %. This increase in export from Senegal was mostly absorbed by the European market (UNEP, 2002). Although, Senegal has become export-oriented due to the contribution of the Lomé Agreement, UNEP claims that it did at the same time *"created a dependency on the European market"* (p. 6).

Export of Senegalese piscatorial products in 1980 – 1989 (in tons)

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Volume	84,036	90,204	91,742	93,344	9,4102	95,449	93,975	110,808.6	111,125.5	118,326

Export of Senegalese piscatorial products in 1991 – 1999 (in tons)

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Volume	124,672.6	118,850.6	86,110.65	83,822.79	93,674	103,463	107,080	112,157	109,448	124,338

Source: DOPM, "Résultats généraux de la pêche maritime Sénégalaise, année 1980 à 1998", in UNEP (2002), "Integrated Assessment of Trade Liberalization and Trade-related policies: a country study on the fisheries sector in Senegal", New York and Geneva, United Nations Publication, pp. 5 & 18.

According to UNEP (2002), the EU is the main importer of the Senegalese piscatorial products. The European market receives approximately two-thirds of total piscatorial exports each year under the fisheries access agreements with Senegal (UNEP, 2002). In 1999, the Senegalese total exports of piscatorial products accounted for 125,000 tons. From this estimate, Europe received about 79,000 tons (UNEP, 2002). This means that the EU received roughly 60 % of the total piscatorial products exported by Senegal alone, i.e. not including any other ACP countries (UNEP, 2002). According to UNEP (2002), the Senegalese exports of fresh fish products to the European market only increased from 9,415 tons to 9,938 tons in 1993 to 1999 respectively. In the same period, the exports of frozen fish products from Senegal to the European market increased significantly. In 1993, the export of frozen fish products accounted for 21,000 tons, while in 1999 this number has increased to as much as 58,000 tons (UNEP, 2002). Furthermore, in this period the number of companies in Senegal was doubled (UNEP, 2002).

4.5 Employment in Small-Scale and Large-Scale fisheries in Developing Countries

The total number of fishers employed in developing countries alone, both in small-scale and large-scale fisheries, accounts for around 26-29 million people (FAO & World Fish Center, 2008). From the estimated total number of employment in developing countries, 1-2 million people were employed in the large-scale fisheries, whereas small-scale fisheries accounted for around 25-27 million people (FAO & World Fish Center, 2008). From the latter estimate of small-scale fisheries, approximately 11-12 million people are employed as fishers in the marine fisheries, while more than half of the people (14-15 million) working as fishers that are employed in small-scale fisheries are working in inland water fisheries (FAO & World Fish Center, 2008). Thus, inland fisheries are in particular more important than marine fisheries in developing countries (FAO, 2010a; FAO & World Fish Center, 2008).

Furthermore, employment in large-scale fisheries is significantly lower than in small-scale fisheries.

Based on its case studies, the FAO and the World Fish Center (2008) argued that fishing in the global context is unquestionably an important source for employment. However, related and supporting activities, such as in marketing and processing, may be an equally important source of employment - if not even more important than the actual fishing itself. According to FAO and the World Fish Center (2008), *"for each person employed as a fisher, on an average, there are 2-3 people employed in post-harvest activities"* (p. 24). In developing countries, the number of jobs generated in the fisheries processing and marketing sector accounts for around 68-70 million in small-scale fisheries (FAO & World Fish Center, 2008). Thus, the total number of jobs generated in small-scale fisheries in developing countries is estimated to be about 93-97 million (FAO & World Fish Center, 2008), i.e. the total number of people working as fishers and those who work in the processing and marketing sector combined. However, this number is significant lower in large-scale fisheries as it only represents 6-8 million people (FAO & World Fish Center, 2008). The combined total workforce in the fisheries sector in developing countries is around 99-105 million people (FAO & World Fish Center, 2008). Thus, this means that as much as around 99 to 105 million people are dependent of fisheries for their livelihoods in developing countries (FAO & World Fish Center, 2008).

Considering that the fisheries sector not only generates employment in marketing, processing and fishing itself, it is worth mentioning that there are jobs being generated upstream on the supply chain as well (FAO & World Fish Center, 2008). These jobs are often related to input supplies to the fisheries sector itself. However, the employment generated from these related and supporting activities is significantly smaller compared to the enormous workforce in the fisheries sector (FAO & World Fish Center, 2008). These jobs include *"boat building, engine and gear manufacturing and repairs, as well as providing various support services in harbours and at landing sites"* (FAO & World Fish Center, 2008, p. 24). In the case of Senegal and Ghana, employment generated upstream accounts for 5-10% in addition to the total number of people employed in there fisheries sector (FAO & World Fish Center, 2008).

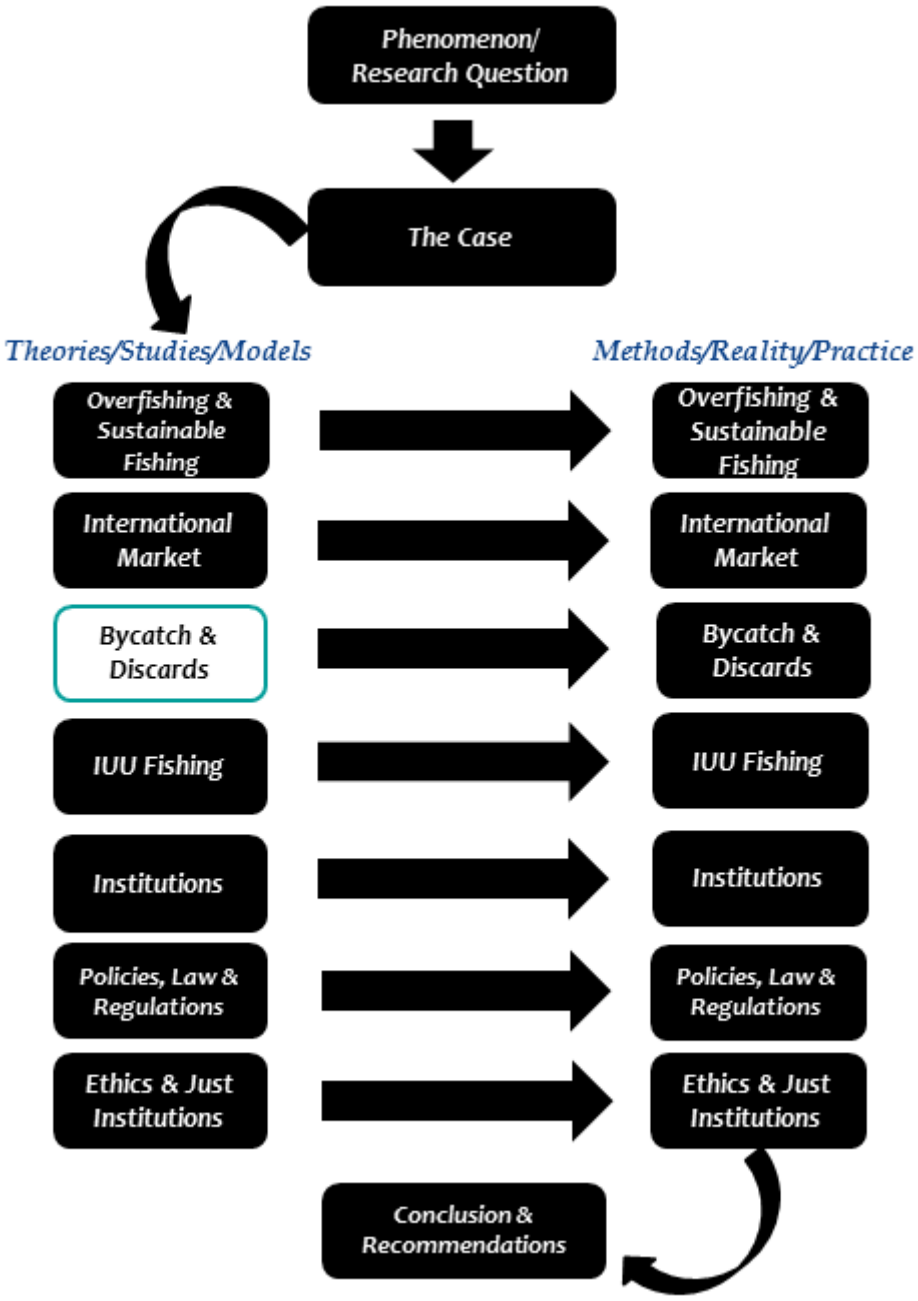
4.6 Employment in Senegal

The fisheries sector in Senegal is indeed important as it does not only provide a considerably amount of fish to satisfy the population's protein needs, but it also generates employment

opportunities and a source of income for the local population (UNEP, 2002). Thus, many people's livelihoods depend on fishing due to its importance in the country. It is stated by Iossa et al (2009) that on the average of *"one in six of the active population works in the fishing industry"* (p. 2). More than 600,000 direct and indirect jobs are created through the fisheries sector in Senegal, where it is estimated that 7.1% of the total population and 17% of the working population are directly employed in the sector (Iossa, et al., 2008, p. 2). According to UNEP (2002), small-scale fishing accounts for 90% of the 100,000 direct jobs generated through the fisheries sector in Senegal. However, the most recent country study from FAO and the World Fish Center (2008) shows that the total employment in small-scale fisheries in Senegal has reached 117,356 people (FAO & World Fish Center, 2008). Based on the total number of people employed in the small-scale fisheries, 42,107 of the fishermen are employed in the marine fisheries, while fishermen employed in inland fisheries account for around 39,962 people (FAO & World Fish Center, 2008). However, whether these estimates include only fulltime or both fulltime and part-time workers remain unclear at this point. Furthermore, the number of other jobs, such as in marketing and processing, that are generated from small-scale fisheries in Senegal accounts for around 35,287 people (FAO & World Fish Center, 2008). From this total, 33,561 and 1,726 people are employed in marine fisheries and inland fisheries respectively (FAO & World Fish Center, 2008). According to FAO and the World Fish Center (2008), the latter estimates mostly include employment in the marketing and processing sectors, and both fulltime and part-time workers. In Senegal, employment in large-scale fisheries represents about 9,828 people (FAO & World Fish Center, 2008). Thus, the preliminary results from FAO and the World Fish Center (2008) show that the total amount of people employed in the fishery sector in Senegal is estimated to be around 127,184 people.

Moreover, Iossa et al. (2008) claim that the number of women working in the fishing sector in Senegal is estimated to be around two thirds of the total people employed in the sector. These women work in areas such as processing, marketing and sales of the catch. However, there are very few studies that could confirm these estimates. According to FAO (2010a), there are around 56 million women working in fisheries in developing countries. In Senegal, 32,456 people working in marine fisheries are women, while there are about 1,622 women working in inland fisheries (FAO & World Fish Center, 2008). Thus, the total amount of women working in small-scale fisheries has reached to about 34,078 people in both marine and inland fisheries combined (FAO & World Fish Center, 2008). The number of women working in

large-scale fisheries is considerably lower than small-scale fisheries, as employment in large-scale fisheries only represents 4,861 people. The total number of men working in small-scale fisheries in Senegal is estimated to be around 83,270, while there are only 4,967 men employed in the large-scale fisheries (FAO & World Fish Center, 2008). Thus, in accordance to these estimates, the number of women that works in the fisheries sector in Senegal is roughly around one third of the total amount of people employed in the sector. However, these estimates and assumptions may be subject to change further down the line as this study conducted by FAO and the World Fish Center is still in progress. The fisheries sector is no doubt important for the Senegalese national economy and the society as a whole, since it plays a crucial role to secure food for the majority of the population and serves as a solution to unemployment in the country (Iossa, et al., 2008; UNEP, 2002).


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Conclusion & Recommendations

5.0 Bycatch and Discards

5.1 Definition of Bycatch and Discards

Bycatch and discards may have different meanings in a different context, and they may be interpreted differently in different parts of the world (Clucas, 1997). Particularly the term bycatch has caused a lot of confusion since it is not available in many published literatures (Alverson, Freeberg, Murawski, & Pope, 1994). Therefore, it is essential to clarify these terms before proceeding ahead.

In the context of fisheries, the term "discarded catch", or in short "discards", means the portion of the fish catch that is thrown away or released back to the sea for whatever reasons (e.g. economic, legal, or personal reasons) (Alverson, et al., 1994; Clucas, 1997), i.e. after the catch has been *"taken aboard the fishing vessel or slipped from the net in the water"* (FAO, 2010a, p. 84). It is further necessary to clarify and specify that the discarded portion of the catch is not retained in any form or shape. As most fishing gears are not guaranteed to catch whatever targeted fish species, non-fish species or sizes of fish that are desired by fishers, a large portion of the catch will be discarded, whether the catch is still alive or dead (FAO, 2010c). However, the reasons are many for why discards occur. It could be due to the lack of value in the markets, the lack of space onboard or due to the regulations in a given country's waters. The several of reasons for why discards occur will be introduced in more detail later in this chapter.

While it is relatively easier to understand the term discards, the term bycatch appears to be more complex and has caused the most confusion to both managers and scientists as it is difficult to characterize even in the context of fisheries. In fact, the term is defined differently depending on the nation, region and fishery. According to Alverson et al. (1994), the term bycatch may be defined in at least three different ways. Firstly, bycatch, which is also called "by-product", is a term that is used to differentiate catches of target species from non-target species which are retained and sold (Alverson, et al., 1994). Secondly, the term could be used to refer to species, sizes or sexes of fish that are discarded for whatever reasons (e.g. result of economic, legal or personal considerations) (Alverson, et al., 1994). Finally, the term may be used to describe all non-targeted species that are retained and sold, in addition to the discarded catches (Alverson, et al., 1994). According to Alverson et al. (1994), the second definition of bycatch is used by scientists in the Northeast and Western pacific, whereas other

scientists in other parts of the world use the third definition. The word 'bycatch' is quite often used interchangeably with 'dead discards' (Horsten & Kirkegaard, 2002).

In order to clear up the confusion of the many variations of how bycatch is defined in the world, FAO (2010c) has in their search for a standard international definition developed one of their own definition of bycatch. Thus, bycatch may be generally defined as follows; *"Catch that a fisher did not intend to catch, did not want to catch, did not choose to use, or which should not be caught for whatever reason"* (FAO, 2010c, p. 12). However, the other different variations of the definition are still viable as they are still being in use for some scientists and managers in certain parts of the world, i.e. it all depends on the different jurisdictions.

In order to simplify the terminologies even further, Alverson, Freeberg and Murawski (1994) defines discarded catch as *"the portion of the catch returned to the sea as a result of economic, legal, or personal considerations"* (Alverson, et al., 1994, pp. Operational Definitions section, para. 4). Bycatch is defined as the discarded catch plus incidental catch. The incidental catch is the portion of the non-targeted catch in which is retained and landed (i.e. with the targeted catch). Thus, this also means that the incidental catch is unintentional. As Alverson, et al. (1994) suggested, one may list the terminologies as follows:

Terminology	***Description:***
Discarded Catch	The portion of the catch that is returned to the sea due to economic, legal or personal considerations.
Incidental Catch	The portion of the catch of non-targeted species which is caught unintentionally, but is retained and landed.
Bycatch	Discarded Catch + Incidental Catch

(Source: Alverson, D. L., Freeberg, M. H., Murawski, S. A., & Pope, J. G. (1994). A global assessment of fisheries bycatch and discards. FAO Fisheries Technical Paper. No. 339. Rome, FAO, Online at: http://www.fao.org/DOCREP/003/T4890E/T4890E00.HTM)

5.2 The Reasons for Discard

People who work in the fishery sector are just like any other people who work in other types of occupations; they would all want to make a living. It may be reasonable to believe that any individual or groups of people would want to maximize their earnings while at the same time minimizing their costs. As far as the thematic of discards is concerned, there will be a lot of

decisions to be made, e.g. decisions related to whether to land or not to land a catch, or to put it into other words: "to discard or not to discard?" Horsten and Kirkegaard (2002) stated that there are many fisheries and management arrangements or scenarios which may have the potential to generate bycatch and discards significantly. Whether a fishery would generate high or low bycatch and discards levels depends on the fishing gears and how selective they are (Horsten & Kirkegaard, 2002). Thus, this means that some fishing gears may discriminate the catch (i.e. high selectivity) to some extent while others may be indiscriminate (i.e. low selectivity). However, fishing gears alone are not the cause of high levels of discards and bycatch. The discard rates may also be dependent on several other factors, such as the place and time, the skill of the fishermen and conditions of the weather (Alverson, et al., 1994; Horsten & Kirkegaard, 2002). While the reasons for why incidental catches are kept is easy to understand, the reasons for why some portions of the bycatch is discarded may be relatively unclear. Clucas (1997) proposes several reasons for why some of caught fish are not landed and instead discarded or wasted at sea. This is shown in the table below.

#	***Discard Reason:***	***Description:***
1	***Fish of wrong species***	*Not of the target species for the particular operator.*
2	***Fish are of the wrong size***	*Command too low a price on the market to be worth landing or outside the limits imposed by management for capture or landing of that particular species.*
3	***Fish are of the wrong sex***	*Usually where gender is important from the processing and marketing point of view.*
4	***Fish are damaged***	*Caused by gear or predation in nets or mis-handling etc.*
5	***Fish are incompatible with rest of catch***	*Slime or abrasion could cause damage to target species.*
6	***Fish are poisonous***	*Or otherwise considered inedible.*
7	***Fish spoil rapidly***	*Causing problems with the rest of the catch.*
8	***Lack of space on board***	*Where fishing operations are successful and target species take precedence over lower value or non-target species.*

9	***High Grading***	*Certain attributes of a fish make it more marketable and therefore more valuable than another and the less valuable is discarded – this is often related to size.*
10	***Quotas reached***	*This may involve discarding of small specimens of the target of the target species to make way for more valuable specimens of the same species for instance – which is often a reason given for high grading.*
11	***Prohibited Species***	*Where quotas are species-based fish may be discarded from one vessel although another vessel with a quota related to the errant species may have been able to land that same fish legally.*
12	***Prohibited Season***	*Where time bound constraints are made on catching particular species, specimens may be discarded if caught in the wrong season.*
13	***Prohibited Gear***	*A quota may be given for capture of a particular species by a particular type of gear – if the wrong gear catches the wrong fish then fish may be discarded.*
14	***Prohibited fishing grounds***	*Fishing ground may be closed for capture of one species but open for others – if the wrong type is caught it can be discarded.*

(Source: Clucas, I., 1997, *"A study of the options for utilization of bycatch and discards from marine capture fisheries".* FAO Fisheries Circular, No. 928, Rome, FAO, Online at: http://www.fao.org/docrep/W6602E/w6602E04.htm)[2]

According to Hall, Alverson and Metuzals (2000), the majority of the discarded fish may have been already dead. While most of the remaining discards of the unwanted caught fish, in which are still alive, may have a very low survival rate after they have been released back into the sea. There is no doubt that the outcome of bycatch may possibly be either life or death, i.e. the fish caught could either survive or die under the capturing process. Of course, this may not

[2] The list over reasons for discard was not originally a table. It has been remade for viewing purposes. However, the content is in its original form.

necessarily mean that such assumptions would only concern bycatch alone, but it could be applied to any other regular catches for that matter – even the catch of targeted fish species. According to Breen and Cook (2002), fishing mortality could be divided into three categories; 1) landings; 2) discard mortality; and 3) escape mortality. If the captured fish has a high commercial value, the chances of it being kept are high. Thus, bycatch of certain fish species may lead to landings given that they hold any values.

Sometimes when fish are caught by certain gear types, they may, as a result of the capturing process, either survive or die. If the caught fish does not hold any commercial value, i.e. they are non-targeted species or non-targeted animals, the chances of them being discarded are high regardless of their condition of being either dead or alive (Breen & Cook, 2002). Thus, one of the causes of death could perhaps be due to the fishing gear currently in use, in which could temporally or permanently damage different kinds of fish species or other animals caught in the gear (Horsten & Kirkegaard, 2002). Thus, whether the catch would survive or die could be dependent on the fishing gears (Hall, et al., 2000). In other words, the rate of discard mortality may depend on the type of gear being used under the capturing process. However, due to its nature, it proves to be difficult to assess and/or to observe whether the fish would die when coming in contact with the fishing gear or if they would survive the encounters (Horsten & Kirkegaard, 2002).

As far as escape mortality is concerned, Breen and Cook (2002) argues that traditional stock assessments have for too long assumed that all fish species will survive a capture process with certain gear types[3]. While there are sometimes the case that certain fish species may survive after they have escaped from the given fishing gear (i.e. escape survival), one cannot ignore the fact that some may die after the escape (i.e. escape mortality). The escape survival or escape mortality of certain fish species may depend on several factors, such as the *"size, age and physical condition of the fish"* (Breen & Cook, 2002, p. 1). Moreover, it may also depend on how the fish is caught, i.e. the type of fishing gear being used. This is referred to the table, which was introduced earlier in this section.

5.3 The Problem of Bycatch and Discards

Why is bycatch a problem? According to Horsten and Kirkegaard (2002), *"bycatch is not only a question of economy but just as important are the question of sustainability and the ethnical acceptance"* (p. 2). However, some bycatch may be sustainable, but it does not necessarily

[3] This is especially the case when it comes to the fishing gear called "towed fishing gear" (Breen & Cook, 2002).

mean that it is accepted by the general public. Bycatch simply exist due to the fishing operators inability to select what to be harvest from the sea (Hall, et al., 2000). As already introduced, bycatch may either be discarded or retained and landed (i.e. incidental catch). Thus, this also means that not all bycatch is undesirable (Horsten & Kirkegaard, 2002). What is not undesirable from the catch is retained and sold (i.e. incidental catch), while the undesirable catch is discarded back to the sea. In some cases, incidental catches may even make the trip to the sea worthwhile for the fishermen, i.e. given that the catch holds commercial value and that profit covers costs (Clucas & Teutsher, 1999, in Horsten & Kirkegaard, 2002, p. 4).

Although, many researchers and practitioners have put a lot of efforts to reduce discards for nearly three decades, e.g. through conducting studies and developing technologies respectively, the concerns regarding the consequences of bycatch and discards still remains. The consequences of bycatch and discards include capturing and killing of threatened and endangered species as well as *"discarding huge quantities of juveniles of economically valuable fish species"* (FAO, 2010a, p. 84). In general, practices of discards are considered to generate waste due to its nature of 'dumping' unwanted catches into the sea. Thus, the exploitation of fishery resources in such a way may prove to be poor and damaging.

Bycatch and discards are undoubtedly an issue of great significance that is still present even to this day, and it needs to be addressed as quickly as possible to avoid more damage to the sea and various fish species. As a matter of fact, bycatch may contribute to exacerbate the global issue of overfishing and threatens effective management of fisheries around the world (FAO, 2010c). According to FAO (2010c), *"bycatch is of concern when it comprises a significant proportion of the capture in a specific fishery, or when, across all fisheries, it comprises a large proportion of the catch in a fishery"* (p. 12). Horsten and Kirkegaard (2002) stated that discards seem to be more common in fisheries that catch fish for the purpose of human consumption rather than those which provide for the purpose of producing fishmeal or fishoil. This is because fish caught for fishmeal and fishoil production seems to be less selective when it comes to product quality, which results in a higher proportion of the catch being retained (Gislason, 1994, in Horsten & Kirkegaard, 2002). For example, the animals that eat the fishmeal are indifferent to the quality of the fish caught. Therefore, there are no reasons to discard the fish caught for the purpose of producing fishmeal or fishoil. However, when the fish caught is intended for human consumption, there are some factors that the fishers have to

consider in order to sell their catch. One of these is product quality. If the fish does not hold the standard or if it is by any means damaged, then it would most likely be discarded.

The problem of discards has multiple related issues. Kelleher (2005) suggests that such issues may include:

- *the moral problem of responsible stewardship of marine resources;*
- *designing a management regime that limits or prevents discarding while meeting multiple social, economic and biological objectives;*
- *the practical problem of enforcing regulation designed to prevent or minimize discards, particularly as discards occur at sea where enforcements is most difficult;*
- *the technical problems of gear selectivity and utilization of species with a low market demand through transformation or adding value; and*
- *the economic problems posed by efforts to reduce bycatch, increase landing of bycatch or increase utilization of bycatch.*

Source: Kelleher, K. (2005), *"Discards in the World's Marine Fisheries: An Update,"* FAO Fisheries Technical Paper, No. 470. Rome, FAO, p. xvii.

Kelleher (2005) identifies four related issues derived from the 'discard problem': 1) Policy and ethical issues; 2) Fisheries management issues; 3) Ecological issues; and 4) Technical and economic issues (Kelleher, 2005). First, discards appear to be often seen as the reverse of responsible stewardship, a waste of natural resources and an unsustainable way to utilize marine resources (Kelleher, 2005). The second issue identifies the difficulties in fisheries management. How can fisheries prevent discards or limit the potential discarded catch while at the same time implement a management regime in which focuses on the social, economic and biological objectives? (Kelleher, 2005, p. 53). The third issue recognizes the potential negative impact discards may have on the marine ecology. The fourth issue deals with the technical and the economic problems. Technical problems are problems related to gear selectivity while the economic problems are related to bycatch reduction while at the same time increase the utilization of bycatch by increasing the bycatch landings (Kelleher, 2005). The following sections will examine these topics in a more detailed level.

5.3.1 Policy and Ethical Issues

It is claimed by Kelleher (2005) that there are a number of societies and religions (e.g. in Islam and Buddhism) that follow a general moral principle when the utilization of natural resources is concerned. Basically, this principle conveys a message to all human beings that

they should to the best of their ability make efforts to seek the best possible way to utilize natural resources, and to ensure that the minimization of waste should be seen as a moral obligation (Kelleher, 2005). In other words, all individuals and groups of people should take responsibility for how they treat the environment, i.e. the state of nature. In the concept of stewardship, it is believed and perhaps required that natural resources should be protected against harm and the utilization should be with caution. However, what is done in practice may prove otherwise.

In some cultures, it seems to be morally wrong to discard or waste natural resources (Kelleher, 2005). Dumping non-targeted fish or other marine animal species back into the sea is, therefore, seen as a wrongful act. As Horsten and Kirkegaard (2002) have stated it; *"there is a growing perception that discarded portions of fishery catches are a wasteful use of natural resources"* (p. 3). The fact that the fish caught would not be utilized for the purpose of food production (i.e. for human consumption), but rather thrown back (i.e. discarded) into the sea is one of the reasons why it may be unacceptable among the general public. The question of wastage could also be seen from the economic point of view. It may be considered a waste if a fishery has retained or discarded non-targeted catches, and by this very act may have prevented other fisheries to generate greater value to society. According to Horsten and Kirkegaard (2002), it is important to stress that the majority of the discarded catch is non-targeted species without any or little economic value. Thus, this means that there is no market for such catches. As previously introduced, there are many reasons for why fishing operators (i.e. fishermen) would want to discard a catch. But the most common reason could be that operators tend to replace less valuable catches with more valuable catches – which is reasonable in their point of view considering their goal is to maximize the profits. In this case, Horsten and Kirkegaard (2002) argue that then *"the concern is not about economic waste, but about conservation of potentially sensitive individuals or assemblages"* (p. 3). In this regard, the general public's awareness on the issue at hand is widespread. The concern lies at the bycatch of sensitive or endangered species. However, even though bycatch of endangered species may to some degrees contribute to threaten the certain fish stocks, the actual amount of these species caught is insignificant (Horsten & Kirkegaard, 2002).

In a response to such problems, the CCRF have several occasions stressed the importance and the need to reduce discards (Kelleher, 2005). As a way to solve bycatch and discard problems, many major fishing nations prohibit discards, i.e. they enforce a so-called 'no-discard' policy (Kelleher, 2005). Such policy is enforced by major fishing nations such as in Norway,

Namibia and Iceland. By enforcing a 'no-discard' policy, the main focus of fisheries management measures has shifted *"from landings to catches and from fish production to fish mortality"* (Kelleher, 2005, p. xviii). In the long term, an implemented 'no discards' approach may be regarded as a norm in certain jurisdictions. Thus, discards of catches may no longer be tolerated or accepted in a given fishing area, and; therefore, anyone responsible of discarding practices needs to adequately justify their acts (Kelleher, 2005).

Technology improvements and other means to reduce bycatch are mandatory in certain countries (Kelleher, 2005). This could be found in fisheries areas in Australia, Europe and Northwest Atlantic Fisheries Organizations (NAFO). The United Nations stressed the importance of *"the need to monitor and reduce discards and unwanted bycatch, in order to assess the impact of discards on marine resources and promote technologies and other means of reducing them"* (Kelleher, 2005, p. xv).

In general, discards may tend to be closely related to wasteful acts. Such assumptions may sometimes be correct, i.e. if it is the case that the fishing activity itself is responsible for the deaths of the discards or if the discards are already dead before the given fishing process has even started. However, one may also argue that not all discards die. Some discards may have a chance of survival. Kelleher (2005) distinguishes between 'good' and 'bad' discards. Good discards are those acts in which correspond with specific guidelines and criteria, which again may be considered 'responsible' discarding. Most importantly, the discarded or the released live animal species have to actually survive the discarding process in order for it to be regarded as a 'good' discard. Thus, 'good discards' are discards of species that have a high probability of survival (e.g. crabs or starfish), or in some cases even discards of egg-bearing females (e.g. lobsters). On the other hand, 'bad discards' are discards of dead animal species that may have had potential commercial values if they were still alive (Kelleher, 2005). This may include endangered species both with and without commercial values and juveniles of commercial species (Kelleher, 2005). In short, 'bad discards' are bad fishing practices.

In theory, this differentiation of discard practices may appear to be very simple. However, the same could not be said in practice. Kelleher (2005) believes that the assessment of discard practices in terms of 'good' and 'bad' practices may be difficult in practice due to its impact on biodiversity and ecosystem. Thus, it is suggested that the development of guidelines on how to promote best practices (i.e. based on responsibility and ethics) should be directed towards the bycatch management rather than the discard practices themselves (Kelleher,

2005). These guidelines may be different between different countries, region or fisheries, and the discard practices could potentially be dependent on several factors. It could be, for instance, differences in national discard policies and/or objectives, fishery economics, markets and food preferences (Kelleher, 2005, p. 56). All of these factors may influence the discard practices either directly or indirectly.

In some circumstances, one may have to assume that discards of catches may sometimes be difficult to avoid. Sometimes it may be completely unavoidable. Thus, there is a need to find an *acceptable level of discards (Kelleher, 2005).* In theory, it may seem reasonable to find an acceptable level of discards in order to limit and/or reduce the overall discard (Kelleher, 2005). However, bearing in mind that most the interest groups would naturally tend to argue and negotiate in their own favor, the question of sustainability may not be considered under these deliberations in practice.

5.3.2 Fisheries Management Issues

As far as the 'discard problem' is concerned, the aim for any given fishery manager could be to design a management regime in which limits discards while at the same time meet the *"social, economic and biological objectives"* (Hall, et al., 2000; Kelleher, 2005, p. 59). In order to succeed in designing such management regime and effectively doing so, Kelleher (2005) suggests that there is a need to assess how discards may impact the biological, ecological and the economic factors. Implementing such assessments may yet to prove to be a tremendous challenge. In fact, it may be even more difficult to assess the impact of bycatch and discards than to assess the quantity of the discards (i.e. the level of discards) (Kelleher, 2005). However, the assessment of the latter is still a struggling matter even to this very day. Thus, little is known of how bycatch may impact the populations of interests or the current achievable level of bycatch and discard reduction is even enough to ensure the populations that are in a critical state by today's technological advancements (Horsten & Kirkegaard, 2002). As far as bycatch is concerned, the main issue is that the mortality of caught fish is not recorded. Consequently, scientific advice to manage fisheries may be one that underestimates the current stock size and its catch potential (Horsten & Kirkegaard, 2002). Therefore, the lack of data may be one of the main concerns when it comes to the issues of bycatch and discards. Moreover, bycatch may in some circumstances perceived *"as though it were biologically different from catch"* (Wallace, 1996, p. 79), i.e. the direct or regular catch of targeted commercial species. Thus, this means that problems related to bycatch should not be treated any different from those emerging from direct catch (i.e. regular catch of targeted

species), and the methods to manage bycatch should be the same as for direct catch (Wallace, 1996).

There are several management frameworks or approaches to bycatch and discards. One of these is related to the so-called "no-discard" policy. But what is actually meant by a 'no-discard' policy? The policy of 'no discards' means that fishing operators are not allowed to discard anything from the catch itself. Moreover, it is an obligation to land all bycatch (i.e. catches of non-target species that are not wanted or intended). According to Kelleher (2005), a no-discard policy is regarded as the best practice in the area concerned. The most important leading countries in fisheries management tend to adopt the no-discard policy. Some countries choose to follow such policy while others may even take it to the next level by prohibiting discards through law and regulations (Kelleher, 2005). Norway is one of the countries which may have adopted a 'no-discard' policy and made it into law. Thus, it means that it is illegal to discard anything caught at sea. However, the extent to which the law and regulations may be enforced depends on the social, economic and biological factors. For instance, if such law and regulations may have prevented fisheries from maintaining their own economic performance or competitiveness with other corporations, then some exceptions to the prohibition of discards must be brought to light (Kelleher, 2005). Thus, the enforcement of such law and regulations must be in several degrees depending on the circumstances. Applying bans of discard should be fair, and it should also consider all the interest groups. That is probably why there is a wide support for this policy among fishers (Kelleher, 2005).

In the discussion of 'no-discard' policies, a question may arise as of whether or not a 'no discard' policy would actually work in practice. According to Hall, Alverson and Metuzals (2000), it may be possible to avoid discards by fishing selectively. This means that by avoiding fishing activities in certain periods, areas or times of the day, fishers may also avoid unanticipated catches, i.e. by-catches, in which may lead to discards (Hall, et al., 2000, p. 207). Technological developments and advancements within the area of bycatch and discards may also serve as an essential contribution to reaching that objective (i.e. the goal of no-discards). However, the success would not be in reach without the data collection of bycatch and discards. The collection of data itself could be done in two separate ways, either by the fishermen themselves or by hiring 'observers' to do the job (Hall, et al., 2000). The former may be too dependent on the efforts and contributions made by the fishers while the latter approach seems to be very costly. Regardless of the costs that may follow, having observers onboard fishing vessels may come with benefits. Some immediate benefits may involve better

monitoring and assessments of the commercial fishing operations due to the fact that these observers are trained agents (Horsten & Kirkegaard, 2002). This should be considered, if extensive coverage of the fishing activity is required. However, Hall, Alverson and Metuzals (2000) suggests that it may also involve long-term benefits: *"(a) encourage research on by-catch reduction gear and techniques with a clear economic disincentive, which is to fill the boat with low-value fish; (b) encourage behavioural changes in fishers with regard to avoiding areas and seasons of high by-catches; (c) help reduce the waste of life and protein caused by the fishery, by forcing the utilization of what was already harvested"* (p. 207). Due to the high costs, some observer programs may be unable to go the extra mile to cover the fishing activities entirely (Horsten & Kirkegaard, 2002). This is where the cost constraints may become a problem for some fisheries. Apart from the high costs, a problem may arise from utilizing the already harvested catch (i.e. (c)). That is to nourish or establish markets for undersized fish, egg-bearing fish, juveniles etc. (Hall, et al., 2000), which a course of development that needs to be avoided. Thus, there is a clear contradiction to the immediate problem and the solution to it, which may have the potential to carry the risk of new problems. Furthermore, it is believed that seeking the level of bycatch may not be sufficient to answer the question of how bycatch may impact on the fish stocks, the ecosystem or the fisheries (Horsten & Kirkegaard, 2002). In other words, it is not possible to measure the impact of bycatch based on the level of bycatch. For instance, the effects of bycatch could be smaller in fisheries with high bycatch rates than those with low bycatch rates (Horsten & Kirkegaard, 2002). Other measures need to be implemented, such as to *"compare the level of bycatch of different areas and historical periods and analyse the result"* (Horsten & Kirkegaard, 2002, p. 4).

According to Kelleher (2005), the allowable landings of undersized fish are limited in Iceland. Landing of undersized fish will result in a deduction from the fisher's assigned quotas. Since the Icelandic fishers are not allowed to land more than a certain quantity of undersized fish, and in doing so may result in less fish to catch, the Icelandic fishers are presented with the opportunity to trade their quotas freely (Kelleher, 2005). Thus, unanticipated landings, such as landings of undersized fish, may be covered through the procurement of additional quotas. Such quota system could also be found in Norway.

According to FAO (2010b), reports of discards are often not required nor included by most fishery management systems (p. 2). Thus, incomplete information may have caused difficulties in quantifying the total amount of global bycatch and discards (FAO, 2010a).

However, a global assessment of fisheries discards has been conducted in 1994. From this assessment, the results of discarded fishes were estimated to be between 17.9 million tons and 39.5 million tons each year, and the average estimation of discarded catch was 27 million tons annually (Alverson, et al., 1994). A more recent assessment of the global fisheries discards has also been conducted in 2005. With a global weighted discard rate of 8%[4], the results from this assessment are estimated to be 7.3 million tons annually (Kelleher, 2005). However, due to the lack of accurate information and data, these estimates display only fractions of the total amount of the global discards. Examples of fish producing countries that are not represented in the latter estimation include *"the Democratic Republic of Korea, the Republic of Korea (no discard information), the Russian Federation, New Zealand and the Philippines"* (Kelleher, 2005, p. 17). In addition, a range of small, unspecified fish producing countries are not included, as well as only a few of the countries in the European Union and partially of India were included in this assessment (Kelleher, 2005). Even though, FAO (2010b) and Kelleher (2005) pointed out that discarding practices may have declined in the recent years, these issues still causes serious concern due to the potential inflicted damage by the practice and especially the unreported and unregulated nature of bycatch.

According to Kelleher (2005), it is impossible to conduct *"an empirical assessment of global trends in discards"* (p. 17). However, he further argues that the discard data of developed countries may have indicated that there has been a reduction in bycatch and discards in most fisheries, i.e. relatively to fisheries in developing countries. With regards to developing countries, Kelleher (2005) argues that the utilization of bycatch has increased while discards have reduced. The reduction of bycatch in many fisheries was a result of several factors. These include the *"decrease in effort and change of target species in some major trawl fisheries"* (Kelleher, 2005, p. 17) and changes made in regulatory regimes. The latter encourages selective fishing and prohibits discards of catches through legislation (i.e. the no-discards policy).

5.3.3 Ecological and Biological Issues

The effects of bycatch and discards could be many. According to Horsten and Kirkegaard (2002), the impact of bycatch and discards on the ecosystem is usually ignored by the fisheries. Only what is directly affected by bycatch and discards on the populations is actually considered in fisheries management.

[4] A weighted discard rate means the proportion of the catch which is discarded (Kelleher, 2005).

Conflicts between industrial and artisanal fishing vessels may arise from discarding practices, especially when there is a large quantity of discards involved (Kelleher, 2005, p. 73). These discards may have been observed by the artisanal fishing vessels either floating dead on the surface or washed into shore. Of course, this does not help to change the public perception of bycatch when the local fishermen are arguing and complaining about the wastage of resources (Kelleher, 2005). In some cases, it may even be perceived as these industrial trawlers are pollution the sea with dead fish, in which many of the local fishermen depend on in order to make a living and provide for their families.

5.3.4 Technical Issues

According to Kelleher (2005), the gear technology is not the sole reason why discard and bycatch reduction is limited, but the willingness to modify the gears may be the main constraint. This could be due to the economic burden that may follow of such gear modifications. Of course, selective gears are preferred over non-selective gears, i.e. non-discriminate catch. Gradually, selective gear should be adopted by fisheries in order for the fishing activities to be more sustainable. This means that fishing activities would not catch more fish than the given fish population may reproduce themselves. Furthermore, Kelleher (2005) suggests that bycatch reduction devices (BRD) should be introduced and in successfully doing so may require a close partnership within the industry. According to Kelleher (2005), particularly there has been evidence that some trawl fisheries[5] in Australia and United States have managed to reduce bycatch by using the BRDs. However, implementation of BRDs is not successful in developing countries in general. The reason appears to be due to the fact that implementing BRDs could lead to substantial economic losses. Take, for example, the shrimp trawl fisheries in developing countries. Most of the reduction of discards in developing countries seems to be due to the increase in utilization of bycatch and not the reduction of bycatch in itself (Kelleher, 2005). Since these countries utilize the bycatch, then it means that the usage of BRD would not work in favor for these countries. It would inevitably reduce the bycatch, which would lead to an economic loss.

5.3.5 Economic Issues

Discarding practices do not come without substantial economic losses. Kelleher (2005) derives two different economic issues that may occur due to discards of catch: *"(1) the costs associated with discards at the level of the fisher, the fisheries authorities and society in*

[5] The trawl fishery referred to is called "Penaeid Trawl Fishery".

general; and (2) the use of economic measures to reduce discards"[6] (Kelleher, 2005, p. 72). In general, fishermen or operators are often in situations where decisions have to be made. This is especially when it comes to whether or not to discard a proportion of the catch. Thus, the economic decisions may be determined by weighing the costs and the benefits of discards. Some of the factors that need to be considered are such as inventory space or the freezer capacity, wage that needs to be paid to the crew, landing costs and/or taxes, the price of the caught fish, the bycatch quotas etc. (Kelleher, 2005). In most cases, fishing techniques used by the fishermen have to be adapted due to discard regulations imposed by the government. Thus, the fishing operations may be less efficient, and the returns could be lower. In situations like these, the operators have to decide whether or not to adopt BRDs or similar measures to reduce the discards. According to Kelleher (2005), *"BRDs introduced in New South Wales resulted in a decline of 90 percent in discards and employment of one less crew per vessel"* (p. 72). This may be served as evidence and proof that the use of BRDs may significantly reduce bycatch and discards.

The costs at the level of fisheries and the administration are related to monitoring, surveillance and control. These costs could be significant. The acquisition of bycatch and discard information as well as information about the impact on the stock and ecology may also involve substantially high costs. For instance, the given fisheries that have decided to implement observer programs have to take the costs of implementing such programs into consideration as well.

The costs of bycatch and discards may also influence the society as a whole. According to Kelleher (2005), there are very few comprehensive studies in this area. Therefore, it may be difficult to understand and identify what the costs of discards may have on the society as a whole as well as who may be responsible to bear those costs (Kelleher, 2005). Furthermore, losses of endangered species and the ecosystem may be seen as a cost to society. This is, of course, a consequence from discarding the proportion of the catch. Thus, acquire such information would only benefit the fisheries in designing management programs.

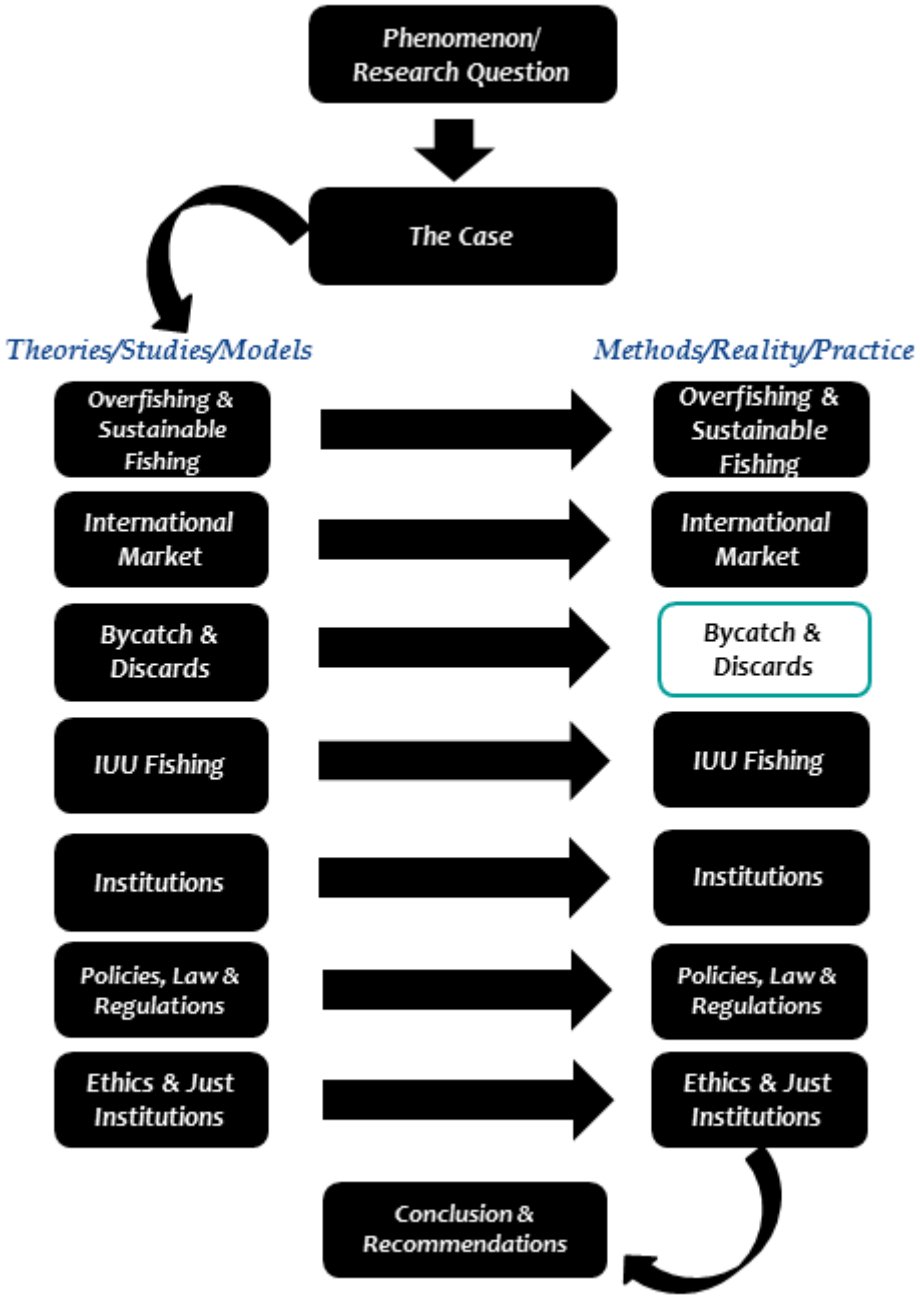
According to Revill (1999), an annual estimation of the total loss of landings due to discarding in the European *Crangon*[7] fisheries is approximately 16,069 tonnes of Cod, Whiting, Plaice, and Sole. More precisely there were discards of 1,890 tonnes of Cod, 1,525

[6] These points were originally put up as bullet points and not as numbers in the original document of Kelleher (2005).
[7] Crangon is a type of shrimp

tonnes of Whiting, 12,066 tonnes of Plaice, and 588 tonnes of Sole. In monetary value, these discards are worth a total of 25.7 million euros (Revill, et al., 1999, p. 60). As previously pointed out, these kinds of studies do not take into consideration non-commercial species, and how bycatch and discards may impact the ecosystem. In this case, the aim of this particular study was only to find the costs of discards on commercial species (i.e. Cod, Whiting, Plaice and Sole).

According to Kelleher (2005), the total discards of the Bering Sea Aleutian Islands (BSAI) groundfish fisheries were estimated to be around 162,161 tonnes of ground fish species in 1994. The total value of the discarded catch was more than US$92 million (Kelleher, 2005). The reason for discard was due to the total allowable catch (TAC) had reached its limit. However, there were also retained catch which was estimated to be 1 699 500 tonnes. The retained catch was valued at US$925 million (Kelleher, 2005). Based on these numbers, Kelleher (2005) argued as follows: *"the ratio of the value of retained catch to discards (retained/discard value ratio), weighted by fishery across BSAI groundfish fisheries, was 10:1"* (Kelleher, 2005, p. 73). Thus, this means that for every dollar lost due to bycatch and discards, about 10 dollars are gained as an output of the retained catch.

Kelleher (2005) suggests that there are some economic measures that can be used to reduce discards. One of such measures is to impose taxes for discards. If the whole regular catch and, additionally, the discards are charged through license fee or royalty payments, then the fishing vessels and the operating crew would be forced to find the best use of the already charged bycatch (Kelleher, 2005, p. 75). However, by use of BRDs the license fee and royalty payments may be reduced. Thus, this would encourage fisheries to make use of BRDs.


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Conclusion & Recommendations

5.4 International Bycatch and Discards

According to the World Bank, FAO and the WorldFish Center (2010), the total amount of discarded fish in a global context has declined in the past few years. There are several reasons for why there has been a reduction of discards. These may include the utilization of bycatch has increased (in Asia); fishing efforts are reduced if high levels of unwanted bycatch are observed; the efficiency of bycatch management; and the usage of selective gear (World Bank, et al., 2010). In spite of this recent reduction of discards, global annual discards are still estimated to be around 7 million tons (Kelleher, 2005; World Bank, et al., 2010). On the average of all discards, 8 % of the catch is being discarded before they are landed. According to Kelleher (2005), the discard rate of tropical shrimp trawl fisheries accounts for more than 27 % of the total estimated discards. This is considered to be the highest discard rate compared to other finfish and shrimp trawl fisheries (Kelleher, 2005; World Bank, et al., 2010). While small-scale fisheries tend to have a lower discard rate in general, industrial large-scale fisheries have relatively higher discard rates (Kelleher, 2005).

Due to its nature, the range of discards of marine resources may be very broad. Additionally, most discards are not properly recorded or, in most cases, they may not be recorded at all. Subsequently, it may prove to be difficult to find out which species are actually discarded. According to Kelleher (2005), studies conducted in this area tend to focus mostly on the discards of commercial species rather than non-commercial species. Sometimes reports of discards is provided, but essential information about the discards is left out, such as the quantity of discards, which of the discards are non-commercial species or whether the discards are juveniles or not (e.g. juveniles of commercial or non-commercial species) (Kelleher, 2005). Instead, what tends to be reported is the information about the weight of only the commercial discarded species. Little or no information of the weight of the non-commercial discarded species are provided. As a result, quantitative information on discards is indeed rare. Thus, under-reported discards are a major problem to the industry even today.

5.5 Bycatch and Discards in the EU

As far as the EU territorial waters are concerned, Kelleher (2005) claims that there are high discard rates in general. There are certain factors that contribute to in high discard rates. Some of these are for instance the dominance of demersal trawl gear, which appears to be the cause of overfishing of demersal stocks, and high discard rates observed in the shrimp and flatfish trawl fisheries (Kelleher, 2005).

According to Kelleher (2005), *"discards are rarely estimated on a systematic and continual basis in most EU fisheries and as EC fisheries legislation does not require mandatory recording of discards, most of the studies are based on limited seagoing observer coverage"* (p. 25). While it is optional for the EU fishing operators to report discards, studies conducted by the EC only focus on discards of commercial targeted species rather than the total volume of discards (Kelleher, 2005). Even though, it is important to include discards of commercial targeted species, these studies seem to neglect to include non-targeted fish species as well as non-targeted animals and non-living material.

Normally, stock assessments of the EU territorial waters do not normally include estimates of discards (Kelleher, 2005). There are several factors for why the estimates of discard mortality are excluded from the stock assessments. Kelleher (2005) suggests that these factors include *"low level of observer coverage, which may not meet the requirement of a statistically significant sampling protocol, and the concern that inclusion of the lower quality of discard data would simply detract from the (higher) quality of the catch and other data used in stock assessments"* (p. 25). Although discarded catch is not included in the stock assessments of certain member states in the EU, the exclusion of it may not significantly affect the stock assessment as a whole (Kelleher, 2005). However, Kelleher (2005) argues that estimates of discards may be relevant as regard to recruitment projections and fisheries management advice. Examples of the inclusion of discard estimates in the fishery stock assessments could be found in the United States, the International Baltic Sea Fishery Commission (IBSFC) or International Council for the Exploration of the Sea (ICES), and those who conducts stock assessments for the North Sea (Kelleher, 2005). In their research paper, Breen and Cook (2002) concluded that the *"exclusion of discard mortality would lead to very significant biases in all aspects of the stock assessment process"* (p. 8).

Although, most of the discard information includes targeted species exclusively, the overall discards in the EU waters are indeed high. This includes the deep-sea fisheries as well. If non-targeted species are also included in the discard information, then the estimate of discard would probably be even higher. According to Kelleher (2005), the Nephrops trawlers are observed to have high discard rates. The discards of demersal finfish trawl[8] represent 62 % of the total catch, while Nephrops and deep-water shrimp trawl account for 70 % of the total catch (Kelleher, 2005). Other European fishing vessels that are responsible for high discards

[8] The demersal finfish trawl targets e.g. hake and seabream (Kelleher, 2005).

are e.g. the Irish razor shell dredge and the French Bay of Biscay hake trawl with discard rates of 60 % and 56 % of the total catch respectively (Kelleher, 2005).

5.6 Bycatch and Discards in Senegal and West Africa

In general, the artisanal fisheries in Africa and the Red Sea are assumed *"to have low or negligible discards unless information to the contrary is available"* (Kelleher, 2005, p. 30). In West Africa in particular, the discards are also low or negligible. This could be explained through the high population in these coastal states combined with a high demand for fish and fish products (Kelleher, 2005). Moreover, the lack of food security may have resulted in most of the catch being retained. However, low discard rates do not necessarily mean that the waters of West Africa are not overfished. It is important to stress that industrial fishing fleets from either foreign or national are not taken into account in the above statement from Kelleher (2005). Only the artisanal fisheries in Africa are considered. Furthermore, the African artisanal fisheries' post-harvest losses are not included in the discard assessment (Kelleher, 2005).

When licensed distant water fleets and national flagged fishing vessels are concerned, there are high level of observer coverage. As a matter of fact, there are some countries which have established what is considered 100 % observer coverage[9] for some of their industrial fishing fleets (Kelleher, 2005). However, the main focus of these observers is not necessarily to collect information of discards, but rather the quantity of the retained catch (Kelleher, 2005). Thus, systematically collected information on discards is sometimes absent in these fishing vessels, despite the fact that they are placed on these ships to collect scientific information about the fish stocks. These observer programs do not only need a great amount of effort to be implemented, but the costs associated with them are substantial (Kelleher, 2005). Although the costs and effort are high to run these programs, Kelleher (2005) claims that these reports and their valuable information are not being utilized as much as they should have in practice. Moreover, Kelleher (2005) suggests that this could be partly explained through *"staff and funding shortages in the research institutes, or because these reports are retained by the enforcement agency and not accessed by the researchers"* (p. 30).

[9] For example, Namibia has two observers on some of their fishing vessels (Kelleher, 2005).

Along the coastline from Morocco to Angola[10], discard rates vary from region to region, i.e. each state's EEZ may vary in discard rates even though they have fishing activities in the same area. In Moroccan territorial waters, the discard estimate of the cephalopod trawl fishery is around 45 % of the total catch (Kelleher, 2005). The discard estimate in Guinea is 33 % of the total catch while Guinea-Bissau had a discard rate of as much as 87 % of the total catch (Kelleher, 2005). In Mauritania, the foreign deep-water shrimp fleet has an estimated discard rate over 80 % (Kelleher, 2005). In a similarly type of fishing fleet in Senegal, the discard rate is estimated to be around 63 % (Kelleher, 2005). While the deep-water trawl fisheries has a high discard rate, the Senegalese shallow-water trawl fisheries have managed to reduce its discards to around 34 % (Kelleher, 2005). This could be explained through bycatch of finfish in the shallow-waters, which has increased tremendously in terms of quantity. Bycatch of these species are often retained and sold in African urban markets due to its high value (Kelleher, 2005). In Sierra Leone, it is required from all industrial fishing trawlers to land their bycatch (Kelleher, 2005). The retained bycatch will then be available for local consumption (Kelleher, 2005). Thus, since fish species with low or no commercial value are not discarded at sea but instead retained and sold at the local markets, the end result seems to be a significant reduction in discards. It appears that the importance of the relation between bycatch and food security is not stressed enough in this context. While certain West African countries struggles to ensure food to their own population, the discard rates are high in some countries due to discards of bycatch. Instead of discarding unwanted bycatch, the catch itself could have been retained and sold in local markets in order to combat famine in certain countries in West Africa. This is of course given that all bycatch are edible and that they could potentially play a crucial role in food security.

5.7 Bycatch and Discard Reduction

Many major and small fisheries have contributed to increase the discard volume globally. However, efforts have been made to reduce bycatch and discards for some fisheries. Typically, these fisheries' attempts to reduce the discards by introducing different measures and methods, such as reducing unwanted bycatch, utilize selective fishing gears or just simply reduce the fishing efforts of local fisheries (Kelleher, 2005).

[10] African coastline and the Red Sea are divided into three areas; 1) Area 34; 2) Area 47; and 3) Area 51. Area 34 stretches from Morocco to Angola, area 47 from Angola to South Africa, and, lastly, area 34 consists of East Africa and the Red Sea. Here, a large part of area 34 is actually the West African coastline.

According to Kelleher (2005), *"there are two principal approaches to addressing the "discard problem""* (p. xviii). These two principal approaches or harvest strategies are 1) to reduce bycatch, and 2) to increase the utilization of bycatch (Kelleher, 2005). Since bycatch could either be kept (i.e. to be retained and sold) or discarded, it seems logical to address the issue of bycatch in order to address the problem of discards. Another problem related to bycatch and discards is discard mortality. In order to reduce discard mortalities of unwanted or non-targeted fish species, Kelleher (2005) suggests that there is a need to reduce discard mortalities for bycatch that are caught alive in which are to be returned to the sea. In other words, the aim is to improve the survival of discarded species, i.e. given that the concerned fish species are still alive after the fishing process. This is not only important for non-targeted fish species and other marine animals, but it is also important for protected or endangered species.

With respect to discards and bycatch, there are several other principles and guidelines for responsible fishing operations proposed by Kelleher (2005). These principles may include acts such as to simply making efforts to avoid unwanted catch, as well as making the best uses of unwanted catch if catching them are unavoidable (Kelleher, 2005). By taking measures to avoid unwanted catch (or bycatch), some of the endangered species may be spared, and one may at the same time avoid to disrupt the functionality of the ecosystem (Kelleher, 2005). In some cases, it appears to be difficult to avoid catching unwanted species, sizes or sexes. Even with the best fishing gear, one cannot, with 100 % certainty, guarantee that the catch of the given target species would have the right size or sex. For instance, the majority of the catch may be undersized, or many of the caught fish are female-bearing-eggs. One should always ensure to make the efforts to seek other methods or measures in order to promote the best practices at sea. However, sometimes it is unavoidable to catch these co-called unwanted species. Thus, it is essential to find the best possible way to make use of such species, i.e. given that the probability of survival after the release of the unwanted catch back to the sea is very low. Furthermore, methods of reducing discard mortalities by increasing the survival of unwanted catches are also important, and there is also a need to keep records of all discards (Kelleher, 2005).

As far as reports of discards are concerned, Kelleher (2005) purposes that the estimation of discards may be more useful if it is to be split into three different categories: 1) always retained species; 2) always discarded species; and 3) partially discarded species (p. 51). Presumably, such data would be relevant to seek better utilization of 'always discarded

species' as well as 'partially discarded species'. In addition, scientific advice may become even more trustworthy and reliable as this information will be available, and one may get a better understanding of how discards and bycatch may have an impact on the marine ecosystems and biodiversity.

Kelleher (2005) claims that fisheries tend to apply a number of regulations in which may have a direct consequence to the discard rates. For instance, minimum landing size (MLS) may encourage discard of catches as the fish caught may not always be in the required size. In other words, it is not possible to guarantee that the right fish in the right size is caught every single time. Most of the time catches may consist of undersize fish species or even juveniles, and this may prove to be inevitable in most cases. Similarly, with respect to fishing quotas, excessive catches may also result in encouraging discards. Other types of regulations that may contribute to encourage discards may be, for example, closed seasons or closed areas. (Kelleher, 2005). In some corners of the world, one may also find different regions in which try to bypass the MLS regulations, e.g. in several Southeast Asian countries or the waters of West Africa. The latter often sell unsorted fish, which is called the 'African mix', or even at sea to collection vessels. This may serve as a mechanism to avoid the MLS regulation.

Bycatch is a phenomenon that has existed for a very long time in fisheries. The importance does not lie in the incidental catch, but the discarded catch and its impact on the marine resources and the ecosystem. Thus, bycatch that leads to discards are by all means undesirable, since discards are basically 'a waste of resources'. In order to limit discards, Horsten and Kirkegaard (2002) suggest that fisheries need to assess its impact on a local level (i.e. micro level). However, the measures to limit discards cannot be standardized for all fisheries, but it needs to be tailored to the specific fishery (Horsten & Kirkegaard, 2002). That is given that all fisheries operate differently due to culture, norms, management, policy, regulations etc.

In order to ensure a sustainable usage of fisheries resources, Horsten and Kirkegaard (2002) suggest that management strategy and actions need to be based on what kind of information that have been received. For instance, this could be information about the bycatch level, the type of bycatch, the bycatch impact on fish stocks, and the bycatch impact on the ecosystem. It is worth noting that there is a general lack of information in the area of bycatch and discards. Thus, it may prove to be difficult to base any management actions on some information that do not exist in the first place. The first recommendation is, therefore, to

collect information and data about bycatch and discards before any management actions and strategies are implemented. After the gathering of information, one may evaluate the bycatch and then implement management measures accordingly.

Based on the classification system developed by Hall (1994), Horsten and Kirkegaard use these criteria to evaluate bycatch:

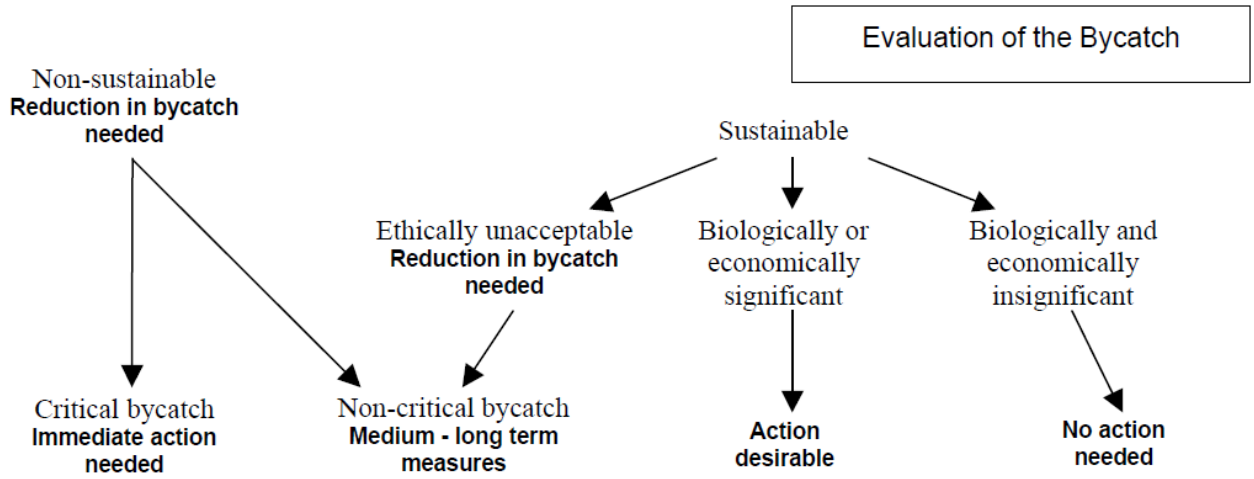
Classification of Bycatch

Critical Bycatch	-	*Bycatch of endangered species.*
Non-Sustainable Bycatch	-	*Bycatch of populations not currently at risk, but which would decline under noted bycatch rates.*
Sustainable Bycatch	-	*Bycatch rates that do not lead to population declines.*
Non-Biologically Significant Bycatch	-	*Bycatch so low as to be considered negligible to the populations involved.*
Bycatch of Unknown Levels	-	*When there is lack of data on abundance on mortality to determine whether bycatch is sustainable or critical.*
Ecosystem-Level Impacts	-	*When bycatch removes a complex of species.*
Charismatic Bycatch	-	*Takes into consideration that different societies value species differently, and that some are perceived to be special, having a value that is independent of the level of effect exerted on the species, or the conservation status of the same.*

(Source: Horsten, M. B., & Kirkegaard, E. (2002), *"Bycatch from a Perspective of Sustainable Use"*. IUCN – European Sustainable Use Specialist Group (ESUSG)/Fisheries Working Group, pp. 4-5)

Horsten and Kirkegaard (2002) have developed a model which illustrates how to evaluate bycatch as well as implementing management measures:

Horsten and Kirkegaard - Evaluation of Bycatch



(Source: Horsten, M. B., & Kirkegaard, E. (2002), *"Bycatch from a Perspective of Sustainable Use"*. IUCN – European Sustainable Use Specialist Group (ESUSG)/Fisheries Working Group, pp. 14)

First and foremost, the question of sustainability in bycatch should be brought into light; are these bycatch sustainable or unsustainable? If it is the case that the bycatch is unsustainable, the bycatch should be limited or reduced immediately (Horsten & Kirkegaard, 2002). The given population concerned may be exposed to excessive fishing pressure and may be in a critical state. Thus, it calls for an immediate action. If the bycatch is considered sustainable, which means that the bycatch may be insignificant both in terms of the ecosystem and the population, then the model suggests that no action is needed (Horsten & Kirkegaard, 2002). This means that bycatch does not have to be limited nor reduced. However, some actions may be needed if the bycatch is biologically and economically significant or if it is ethically unacceptable. The latter could be the general public's disapproval due to their perception of unnecessarily wasted resources (Horsten & Kirkegaard, 2002). An external factor in which fisheries need to take into consideration. As Horsten and Kirkegaard (2002) have suggested; what kinds of actions need to be taken depends on whether the bycatch is sustainable or unsustainable (Horsten & Kirkegaard, 2002).

5.8 Discussion and Recommendations

So what should have been done? What are the solutions to the bycatch and discards problems? First of all, there is a great need to quantify the amount of discards in order to find a suitable management plan for a range of different fisheries. Despite the financial burden of observer programs, it may be essential to consider implementing such programs in order to retrieve accurate information about the quantity of discards. The lack of information on bycatch and

discards is an important issue that needs to be addressed before management strategy and plans may be implemented. However, Kelleher (2005) claims that *"the impacts of discards are not easily quantified and the methods for such impact assessment require further development"* (p. 76), i.e. with not only regard to the impacts on various marine resources and animals but also to the ecological impacts of bycatch and discards. The importance of acquiring information on bycatch (i.e. both incidental catch and discards which may also include endangered species) is not stressed enough. Such information may help fisheries to find the best possible practices as well as measures to mitigate bycatch and discards (Kelleher, 2005). Thus, under the assumption that the information is accurate, the decision-making process of future actions, plans and strategies may be even more precisely adapted to the current situation.

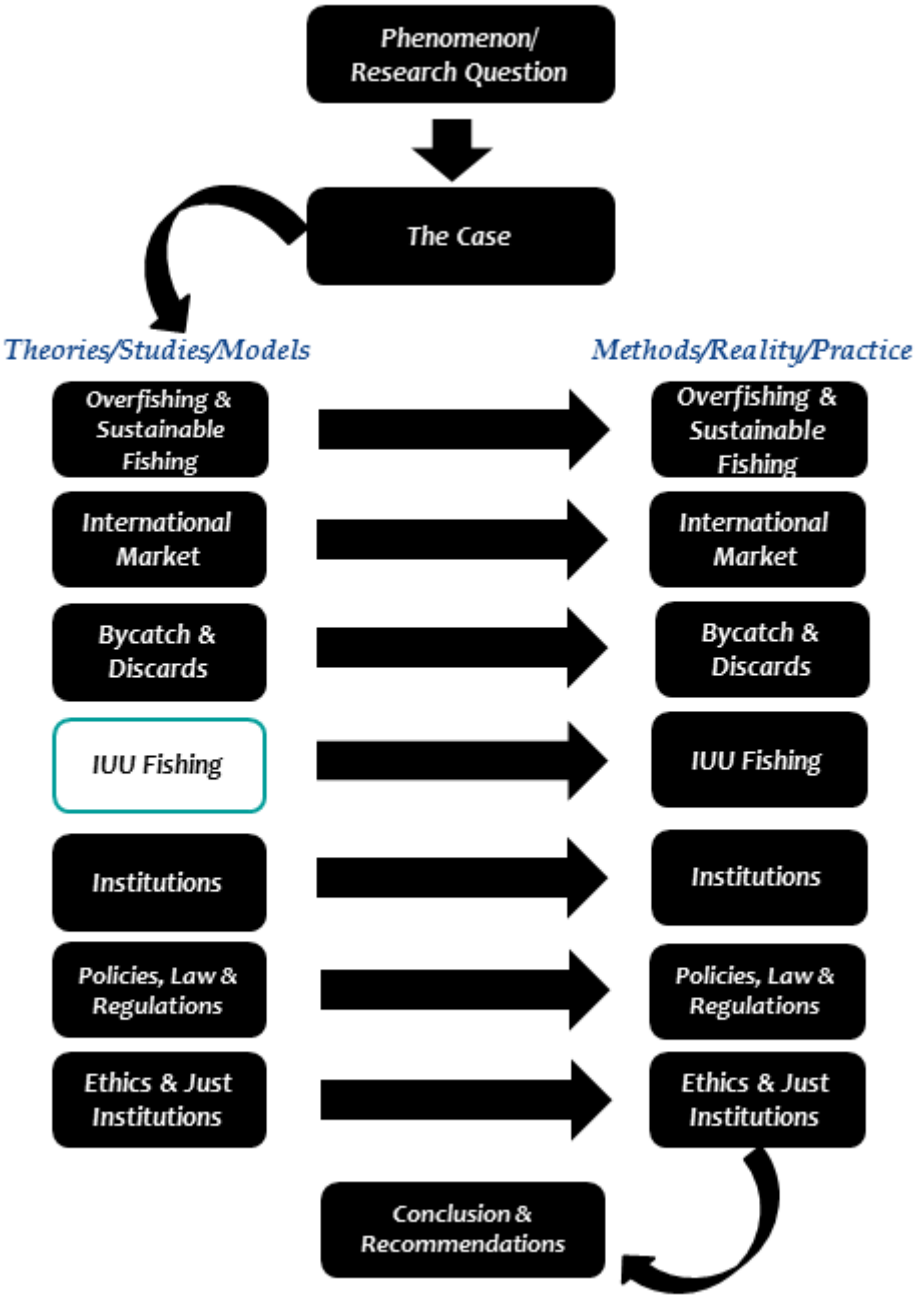
According to Kelleher (2005), *"the United Nations General Assembly (UNGA) resolution, the Code of Conduct for Responsible Fisheries (CCRF) and the International Plans of Action (IPOAs) are valuable starting-point for public policy on discards"* (p. 76). Fisheries should probably attempt to adopt some of these policies. However, Kelleher (2005) suggests that a "no-discard"-policy may be the best approach when fisheries management is concerned. Furthermore, the "no-discard" approach may share similarities with the CCRF and the resolution of the UNGA (Kelleher, 2005). Thus, adopting such approach may be the most sustainable solution for fisheries management in the long-term. However, it is suggested that one cannot simply adopt the approach without carefully taking into consideration the required complementary measures in order for it to work effectively (Kelleher, 2005). It could be that by adopting such approach may turn out to be not as beneficial or practical for some fisheries, in terms of the ecological and social aspects. In order to optimize bycatch and discard management, there is a need for every single fishery to find what measures are the most suitable. Given that every fishery is different from one another, fisheries management measures cannot be standardized, but it has to be customized to each fishery and their strategy and management style.

In order to reduce bycatch and discards, selective fishing should be promoted. This is especially concerning overexploited fisheries where it is important to reduce discards. However, Kelleher (2005) argues that *"selective fishing is likely to alter ecosystem balance"* (p. 76). If this is the case, then scientific advice and further assessments are required. Scientific advice provided by experts may aid fisheries to seek the best practices when it comes to bycatch and discards.

Normally, industrial- or large-scale fishing tends to be associated with non-selective fishing (i.e. due to trawling and non-discrimination of catch), while small-scale fishing are considered more selective (Kelleher, 2005). Thus, small-scale fishing may be regarded as more sustainable than industrial large-scale fishing. However, this assumption may not always be correct. As a matter of fact, Kelleher (2005) claims that fishing activities of small-scale fisheries may also damage the ecosystem. This is due to *"their ability to exploit most habitats, niches and trophic levels"* (Kelleher, 2005, p. 77). Other ways to reduce bycatch and discards are through economic measures. Fundamentally, there is a need to reduce bycatch and discards, but that could also be achieved through the increase of discard survival. It appears that the higher the rate of discard survival, the lower is the impact of discards on biodiversity and ecosystem. Technological development and other measures to promote discard survival should therefore be highlighted.

Although, it is essential to reduce bycatch and discards due to their negative impact, one may also consider increasing the utilization of bycatch and discards as well (Kelleher, 2005). Basically, it is a way to reduce discards since the unintentional or unwanted proportion of the catch is retained instead of being discarded back into the ocean. According to Kelleher (2005), utilization technologies should not only be transferable between fisheries to fisheries but also between countries. Sharing such technology may contribute to reduce discards as well as to increase food security (Kelleher, 2005). However, extensive bycatch should be avoided if possible. This is under the assumption that extensive bycatch may lead to overfishing of fish stocks.

Many fisheries in developing countries tend to utilize bycatch more than fisheries in developed countries. Thus, Kelleher (2005) suggests that fisheries in developing countries need to find a balance between the utilization of bycatch and the reduction of bycatch and discards. Further development of guidelines for how this could be achieved in the most sustainable way should be in accordance to the CCRF.


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
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Ethics & Just Institutions
Conclusion & Recommendations

6.0 Illegal, Unreported and Unregulated Fishing (IUU)

6.1 Definition of IUU Fishing

The Food and Agriculture Organization (FAO, 2002a) defines IUU in three parts; (1) illegal-, (2) unreported-, and (3) unregulated fishing activities. The following descriptions of the three different terms are taken from the Food and Agriculture Organization of the United Nations' *technical guidelines for responsible fisheries, (2002a), pp. 4-5*:

Definition of Illegal, Unreported and Unregulated (IUU) Fishing

Illegal fishing refers to fishing activities:

(1) conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;
(2) conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or
(3) in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization.

Unreported fishing refers to fishing activities:

(1) which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or
(2) undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization.

Unregulated fishing refers to fishing activities:

(1) in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or
(2) in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

(Source: FAO. (2002a). Implementation of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. FAO Technical Guidelines for Responsible Fisheries: No. 9. Rome, FAO. 2002, pp. 4-5)

According to the High Seas Task Force (2006), IUU fishing could be simply described as fishing vessels that engaged in certain acts that is *"in violation of the laws of a fishery"* (p. 1). Any given fishery is *"under the jurisdiction of a coastal state or […] regulated by regional organisations"* (High Seas Task Force, 2006, p. 1). The latter is especially referred to high seas fisheries. A significant proportion of the IUU fish catches comes from the EEZs of coastal states, but they also comes from the high seas as well (High Seas Task Force, 2006).

6.2 The Problem of IUU Fishing

According to the Food and Agriculture Organization of the United Nations (2002), the illegal, unreported and unregulated (IUU) fishing has become a serious threat to *"effective conservation and management of many fish stocks, causing multiple adverse consequences for fisheries and for the people who depend on them in the pursuit of their legitimate livelihoods"* (FAO, 2002a, p. 1). Thus, IUU fishing may serve as a hindrance to the recovery of fish stocks as well as the ecosystem (Agnew et al., 2009). Basically, IUU fishing is a threat to the achievement of sustainable of fish stocks worldwide and the world fisheries (Commission of the European Communities, 2007; High Seas Task Force, 2006). IUU fishing may also contribute to overfishing or overexploitation of fish stocks (Agnew, et al., 2009). In general, the issue of IUU fishing does not take place in only a few countries in the world, but it is, in fact, a worldwide phenomenon that may virtually occur in all capture fisheries, i.e. including the high seas and within the Exclusive Economic Zone (FAO, 2010a, p. 93). Moreover, IUU fishing activities are to be found in different sizes, shapes and types. They could be small-scale or industrial-scale, and the harmful practices that follow are carried out by both foreign and national vessels (FAO, 2010b). According to the High Seas Task Force (2006), IUU fishing *"thrives where weak governance arrangements prevail and is further encouraged by the failure of countries to meet their international responsibilities"* (p. 1). Thus, all the areas that are unable to combat IUU fishing, and letting these activities thrive may have to face the catastrophic consequences of potential fishery collapse and resource depletion (FAO, 2002a). This will, in turn, prevent fisheries from reaching their objectives, both short-term and long-term national and global economic objectives as well as social and environmental objectives (FAO, 2010a, p. 93). FAO (2002) further argues that such activities may also threaten the efforts to secure food. If there are no efforts being made to reduce IUU fishing and to ensure sustainable and legal fishing practices, IUU fishing may have the potential to *"completely negate the benefits of effective fisheries management"* (FAO, 2002a, p. 1). Thus, in order to

combat illegal, unreported and unregulated fishing, it is essential for developing countries to actively participate as well (FAO, 2010a, p. 93).

Combating IUU fishing has proved to be difficult in the last few decades. This is mostly due to their persistence, and the economic incentives involved, which may have been driven by weak governance, increasing demand and overcapacity (High Seas Task Force, 2006). There are many different factors that may have contributed to make IUU fishing thrive. The High Seas Task Force (2006) has provided an extensive list of what the root causes of IUU fishing might be.

Key Motivators of IUU fishing

Some of the key motivators of IUU fishing are:

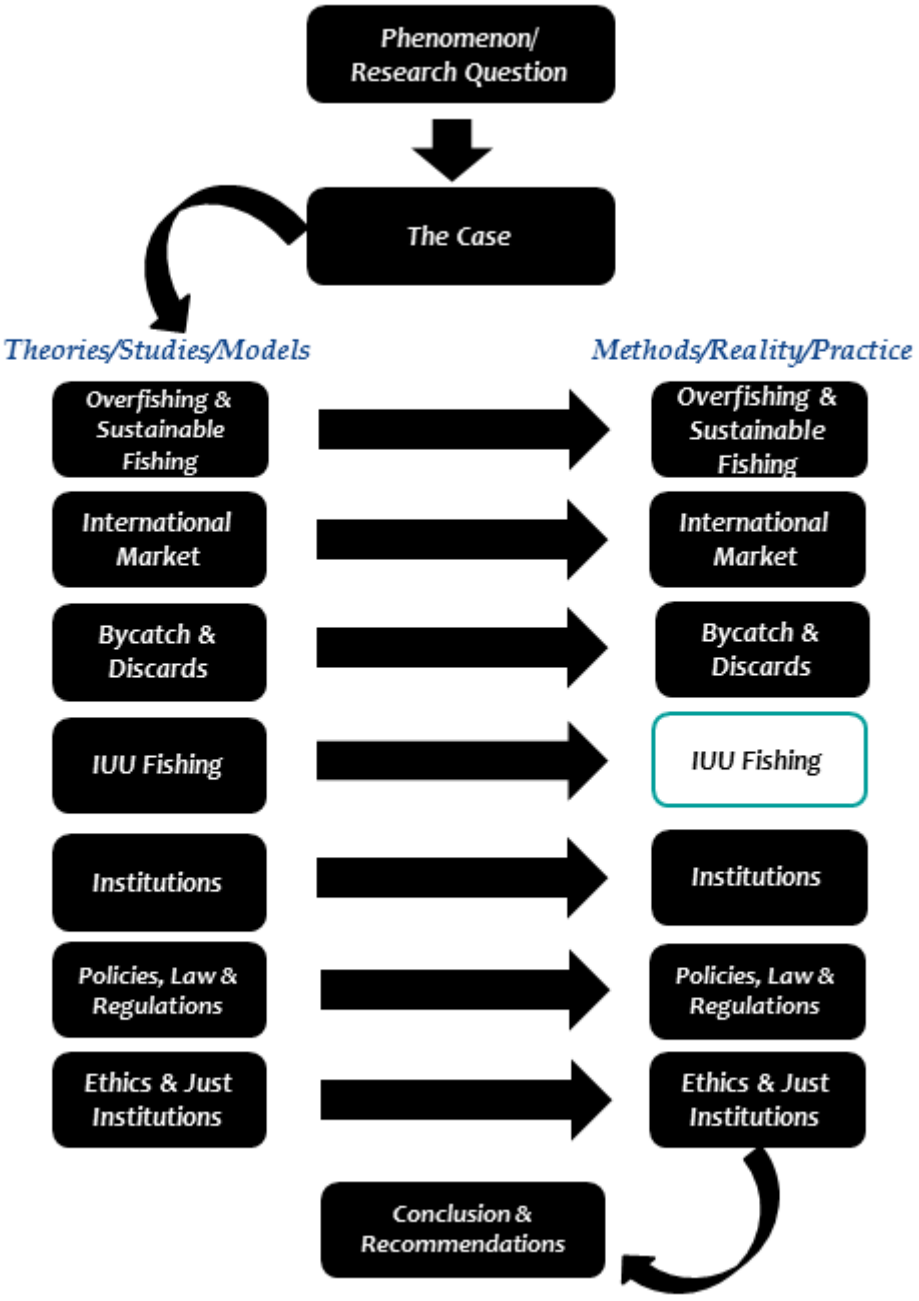
- high value of catch relative to low capital and running costs of IUU vessels;
- higher cost of legitimate business compared with the ease of IUU;
- association with other illegal activities such as smuggling and money laundering;
- limited access to often overcrowded legitimate fisheries;
- extreme remoteness of resources where policing is difficult;
- flag states are not party to or ignore international agreements;
- flag states unwilling to control their own vessels;
- ineffective policing and fisheries management institutions;
- ineffective inspection of fish landings and poor traceability; and
- penalties that are insufficient and often fail to deter.

Source: High Seas Task Force (2006), "Closing the net: Stopping illegal fishing on the high seas. Summary recommendations", Governments of Australia, Canada, Chile, Namibia, New Zealand, and the United Kingdom, WWF, IUCN and the Earth Institute at Columbia University, pp. 2.

The cause of IUU fishing still remains an issue because there is a general lack of an international political resolve to carry through the agreed measures to combat it (High Seas Task Force, 2006). The framework of international measures to combat IUU fishing is already developed, but there are too many coastal states that still are unwilling to adopt these measures which are provided. Furthermore, according to the High Seas Task Force, there are some coastal states that have adopted these measures (High Seas Task Force, 2006). However, the enforcement of such measures still remains in question.

Due to the nature of IUU fishing, it is hard to detect these kinds of harmful activities for the reason that it is difficult to measure the total amount of landed catches in IUU fishing. Thus,

fully reliable data are not common in this area of study (FAO, 2002a). However, according to the recent conducted study, the total value of losses worldwide from illegal and unreported fishing is estimated to be between $10 billion and $23.5 billion a year, which is about 11-26 million tonnes (Agnew, et al., 2009, p. 4). In terms of percentage, IUU fishing accounts for 13 to 31 percent of the total reported catches in the world (Agnew, et al., 2009; FAO, 2010b). As available information is constantly in conflict with one another, the question of whether IUU fishing activities have increased or decreased over the past few years remains, however, unclear (FAO, 2010b, p. 12).


Phenomenon/ Research Question
The Case
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Overfishing & Sustainable Fishing
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Ethics & Just Institutions
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Policies, Law & Regulations
Ethics & Just Institutions
Conclusion & Recommendations

6.3 IUU Fishing in the World

One of the first studies on illegal and unreported fishing in a worldwide context was conducted by Agnew, et al. (2009). Case studies of 54 countries, including the high seas, showed that annual losses of IUU fishing worldwide were estimated to be between $10 billion and $23.5 billion (Agnew, et al., 2009). A quantification of this estimate will be between 11 and 26 million tonnes of fish lost to IUU fishing each year (Agnew, et al., 2009). The period in which is considered to be worst when considering illegal and unreported fishing in a global context is around the mid-1990s (Agnew, et al., 2009). In this period, illegal fishing activities increased substantially due to a range of factors. These are, for instance, the growth in world demand for fish and fish products and the increase of the world's fishing fleet which may have caused overcapacity (Watson & Pauly, 2001). This result in less fishing opportunities as there is a less amount of fish left in the sea. In the 1990s, global catches is expected to remain at a level of stability for a relatively long period of time, which is mainly due to major fish stocks in the world have been recognized as overexploited or depleted (Watson & Pauly, 2001). This means that it is impossible for the global catches to increase when the fish population cannot replenish itself fast enough. An overexploited fish stock needs time to reproduce itself. If this time is not given to the fish stocks that are classified as overexploited, it will most likely be depleted or collapse, which will bring even more harm to an already disturbed ecosystem.

According to Agnew, et al. (2009), there is *"a significant correlation between governance and the level of illegal fishing"* (Agnew, et al., 2009, p. 1). As a matter of fact, developing countries may be more exposed to illegal fishing than developed countries. This is under the assumption that most developing countries may have weaker governance than developed countries. According to the High Seas Task Force (2006), *"IUU losses are borne particularly by developing countries that provide over 50 per cent of all internationally traded fishery products"* (p. 1). The costal countries in the sub-Saharan Africa, i.e. including West-Africa, bear a significant amount of economic losses. In fact, the annual losses due to IUU fishing are valued at US$1 billion each year (High Seas Task Force, 2006). The annual amount of loss equals a quarter of the total fisheries exports in Africa (High Seas Task Force, 2006). Thus, the poorest countries in the world are most affected by IUU fishing activities. In addition to the economic losses, these countries also bear the loss of highly-dependent source of food and a potential source of income. Agnew, et al. (2009) estimated that the illegal catch in West Africa is much higher than the reported landed catch. In fact, illegal fishing is estimated to be

40% higher than the reported landed catch (Agnew, et al., 2009, p. 1). However, with such high level of illegal fishing does not come without consequences. Not only does high level of illegal fishing serve as a hindrance for sustainable development and management, but it is also harmful for the ecosystem and the environment as a whole. In turn, this would affect the lives of many people who depend on fishing to make a living. In the United Nations' publicized magazine called Africa Renewal, Kimani (2009) stated the following; "*Illegal fishing is not the only threat to African fish stocks"* (p. 12). Moreover, they stated that *"even legal fishing, if not adequately controlled, poses a long-term threat"* (Kimani, 2009, p. 12). This means that inadequate institutions would be as much as a threat to the fish stocks as illegal fishing.

In addition, global food security may be at stake. Especially when taking into account the current growth rate in the world population, which is naturally followed by an overall increase of worldwide demand for food (Agnew, et al., 2009). In this case, the artisanal fishermen would most likely suffer from a reduction in food security (MRAG, 2005a). Coastal communities in countries, particularly those in West Africa (Senegal, Guinea Bissau, Mauritania, Sierra Leone, Angola etc.), which are extremely dependent on fish as a main source of protein, would be significantly affected by a reduction in marine resources in which in turn will lead to a reduction in food security (MRAG, 2005a). Fish and fish products would be an important contribution to supply food for the world population. However, the task of meeting the worldwide demand for fish and fish products may prove to be difficult. The reason is simply because of the current state of the world fisheries, which could be described as mostly depleted. Many fish stocks are *"exploited at or beyond their maximum sustainable levels"* (FAO, 2007c, p. 32). This means that the fish stocks may be in a state where they appear to be unable to reproduce or replenish themselves. According to Putt and Nelson (2008), foreign and domestic demand for fish and fish products seem to be the driving force of both legal and illegal fishing (i.e. the suppliers of fish and fish products), which the aim is to meet the growing market demand. Thus, there is a great need to promote sustainable harvesting as well as management (Putt & Nelson, 2008).

It is evident that illegal and unreported fishing may significantly impact the fish stocks of high valued commercial targeted species in general. This means that low-volume fish stocks with high value are often vulnerable to both legal and illegal fishing activities. The European Union is a very good example of how failure in controlling unreported catches may have led to severe depletion of fish stocks, which again may have served as a hindrance towards replenishment of various of overexploited fish stocks (Agnew, et al., 2009). According to

Agnew (2009) and ICCAT (2008), the majority of Bluefin tuna catches in the Mediterranean may not have been reported. In 2006, unreported catches were estimated to be roughly 19,400 tons. The following year (in 2007), the unreported catches have increased to 28,600 tons (ICCAT, 2008, p. 75). The increase in IUU fishing may therefore rapidly decrease the given fish stock at stake, which may again contribute to overfishing or overexploitation of fish stocks.

Based on their studies, Agnew, et al. (2009) claimed that there is a high correlation between the level of illegal and unreported fishing and the given countries' quality of governance. For instance, countries or regions with poor governance seem to be associated with organized crime that is related to IUU fishing (Gianni & Simpson, 2005; Vaisman, 2001). This means that improvements of governance is unquestionably crucial in order to mitigate IUU fishing (Agnew, et al., 2009). However, it is further argued that it does not necessarily mean that developing countries with poor governance are held responsible for illegal fishing. They are rather considered more vulnerable than most developed countries, which may have 'better' governance (Agnew, et al., 2009). Presumably, areas with good or higher quality governance relative to areas with poor governance are most likely to have better management of fish stocks. Mitigation of IUU fishing may prove to be relatively less difficult in such areas as there is better control, surveillance and management of fishing activities. Even though, countries with poor governance are often more vulnerable to illegal fishing activities than most countries with proper governance, it does not necessarily mean that organized crime would only occur in countries with poor governance (due to e.g. corruption, weak governance, or weak executive powers from the given state). As a matter of fact, organized crime may also occur in countries with good governance, such as in the case of Australia (See e.g. Putt & Nelson, 2008). Sometimes countries with good governance may not have an adequate regulatory environment in order to mitigate or prevent organized criminal activities, such as the IUU fishing (Putt & Nelson, 2008).

It is important to stress the nature of illegal fishing. Basically, illegal fishing does not comply or respect any form of national or international policies or actions intended to promote sustainable development (Agnew, et al., 2009; High Seas Task Force, 2006). In the context of bycatch and discards as previously discussed, illegal fishing is contributing to hamper the national and international actions towards bycatch and discards reduction as well as *"mitigate the incidental mortality of marine animals such as sharks, turtles, birds and mammals"* (Agnew, et al., 2009, p. 5). Every effort to manage marine resources is undermined by IUU

fishing activities (High Seas Task Force, 2006). Thus, these activities also undermine the efforts to promoting growth and welfare for a range of countries (High Seas Task Force, 2006), especially when it comes to developing countries.

Illegal fishing activities could either be executed by the local fishers or it could be engaged by licensed fishing vessels from other countries. According to MRAG (2005a), most of the countries in the North Western region of Africa tend to form fishing agreements within the West African countries as well as with other fishing nations, such as Korea, China and the EU. Take for instance the case of Senegal and the EU countries. There is no guarantee that these foreign fishing vessels will report all of their catches. As a matter of fact, *"there is an incentive to under report, for example when agreements specify a ceiling on the catch amount and a supplemental fee per tonne for catches above this limit"* (MRAG, 2005a, p. 39). Watson and Pauly (2001) agree with this point of view and, thus, also assume that most countries would under-report their catches if it is the case that the fishers tend to under-report their catches. Given that mange countries may tend to under-report their catches, scientific data, studies and advices may be in some part inaccurate or incorrect. In turn, this may prevent international fisheries' effective management, those who promote sustainable development and force the given high-value but low-volume fish stocks at the point of depletion or collapse. Take for instance the previous example of the catches of Bluefin tuna in the Mediterranean. The reported catch of Bluefin tuna in the Mediterranean was 30,647 tons in 2006 and 32,398 tons in 2007 (ICCAT, 2008). However, the Standing Committee on Research and Statistics (SCRS) estimated the actual amount of catch to be 50,000 tons and 61,000 tons in 2006 and 2007 respectively (ICCAT, 2008). Thus, the actual amount of the catch was much higher than the reported catch, which means that the catches were substantially under-reported. Moreover, the discard rate from these foreign vessels is assumed to be quite high (MRAG, 2005a)., et al. (2009) argue that this must be a severe failure of control on both the coastal state and the flag state, i.e. the state that allows other foreign fishing nations to fish in its EEZ (e.g. through fishing licenses), and the foreign fishing nations that dispatch their fishing fleets to other countries to exploit their resources.

Gianni and Simpson (2005) estimated in 2005 that more than 1,200 industrial fishing vessels operate by flying Flags of Convenience (FOCs). Most of these vessels are, according to Gianni and Simpson (2005), attempting to *"deliberately register with FOC countries to evade conservation and management regulations for high seas fisheries"* (p. 3). Moreover, in the period of 1999 to 2004, the growth of 'unknown flagged' industrial vessels listed has

increased by 50%. Although, one cannot simply assume that all of these industrial vessels are involved in illegal fishing, a good proportion may seek their riches in IUU fishing. According to Gianni and Simpson (2005), roughly 15% of the worldwide large-scale industrial fishing fleet may either be registered with a FOC country or listed as unknown flagged. The development of such illegal activities calls for serious concerns for the industry as a whole. Thus, it may appear that the FOC system could be a useful tool in order to cover up the illegal and unregulated fishing activities. By purchasing a FOC, which may not cost more than a few hundred dollars, the companies that own these fishing vessels could then in return acquire catches that are valued at millions of dollars (Gianni & Simpson, 2005). It is a thriving business. Consequently, this may threaten the given fish population, other effected populations (i.e. given excessive bycatch), endangered species and other marine animals. As far as fisheries management is concerned, IUU fishing may serve as a hindrance to effective monitoring, surveillance and control.

Gianni and Simpson (2005) argue that *"the countries which issue FOCs are ultimately responsible for the activities of these vessels on the high seas, but turn a blind eye and exercise little or no control over the vessels concerned"* (p. 3). Their findings showed that particularly four countries held responsible for issuing FOCs. These are Honduras, Panama, Belize, and St Vincent and the Grenadines (Gianni & Simpson, 2005). Together, these countries alone represent approximately 75% of all fishing vessels that fly flags of FOC countries in the period of 1999-2005 (Gianni & Simpson, 2005, p. 4). Although, the fishing business of FOC may generate many billions of dollars, the countries that provide FOC to fishing fleets only get a small proportion of the actual worth of the catch. In fact, the countries that issue FOC only charge for license fees and/or registration fees each year (Gianni & Simpson, 2005), i.e. what they earn from the whole FOC fishing business. These license fees only cost a few million dollars which in itself may only be considered 'pocket money' compared to the actual value generated from the illegal catch. Thus, the registration fees are inexpensive or come at a very cheap price for the fishing fleet that is flying FOCs. Hence, the benefits considerably outweigh the costs. The result may be further encouragement of IUU fishing due to the enormous profits. Of course, this is at the expense of those countries that are either making small or substantial efforts to promote responsible and sustainable fisheries.

Another method to reduce costs is through transshipment. This is especially the case when it comes to high seas fishing vessels that are fishing tunas of high value (Gianni & Simpson, 2005). Transshipment is a method where a given fishing vessel transfers its catch to another

cargo vessel to transport the same catch to a given destination. In that way, the fishing vessel, which is mainly responsible for fishing high valued species, would not have to transport the catch to its destination, but instead it could continue to operate by catching more fish. Naturally, the given fishing vessel could not have continued for infinity into the future. Thus, it is dependent on resupplying as well as refueling fleets to continue its fishing activities (Gianni & Simpson, 2005). Resupply and refuel take place at sea which means that the given fishing vessel would not have to travel back to land. The transshipment, refueling and resupplying fleets may appear to be operating illegally as well. However, Gianni and Simpson (2005) claim that these fleets are not operating illegally. Some vessels may provide services only to legitimate fishing fleets while others may provide for IUU fishing fleets. A few may even provide services for both. Whether or not these vessels are operating legally or illegally, the reality is that they do contribute to IUU fishing. Some vessels may either intentionally or unintentionally providing services to IUU fishing vessels, but it does not change the fact that they are involved. Furthermore, most of transshipment, resupplying and refueling fleets are unregulated.

Many large-scale fishing vessels are built only for the purpose of IUU fishing. For example in Taiwan, there were 51 industrial fishing vessels built in the period between 2001 and 2003 (Gianni & Simpson, 2005). By the end of year 2003, all of these fishing vessels turned out to engage in IUU fishing by flying the flag of FOC countries – except one single fishing vessel (Gianni & Simpson, 2005). Thus, the total number of fishing vessels involved in IUU fishing was 50. According to Gianni and Simpson (2005), the companies that profit the most from FOC fishing come from the EU or Taiwan. In the case of the EU, it is stated that all of member states combined may have top the list over companies that either *"own or operate fishing vessels flagged to one of the top 14 FOC fishing countries"* (Gianni & Simpson, 2005, p. 4). Furthermore, Spain and/or the Canary Islands represent a significant involvement in FOC fishing countries. In the case of countries such as Panama, Honduras, Belize and St Vincent and the Grenadines, the true owners of the companies or the true culprit, which own FOC fishing vessels and the respective corporations, may be unknown or intentionally hidden (Gianni & Simpson, 2005). Thus, these owners may reap the benefits of IUU fishing while being in secrecy. Stopping these companies may therefore not necessarily mean that IUU fishing will end. The hidden and true owners may establish new companies elsewhere. Thus, mitigating IUU fishing may prove to be an enormous challenge and a difficult task, since the illegal acts are masked behind a network of firm structures (Griggs & Lugten, 2007).

Another reason why it is important to mitigate IUU fishing is not related to the fish stock, the ecosystem, or fisheries management. In fact, IUU fishing may abuse human rights (Gianni & Simpson, 2005). This is due to e.g. *"abandonment of crew members in foreign ports, forced labour and safety issues"* (Gianni & Simpson, 2005, p. 4). In a particular case presented by Gianni and Simpson (2005), a fishing vessel sank with its crew in the Sub-Antarctic waters[11]. However, due to failure of some life-saving equipment, many people lost their lives (Gianni & Simpson, 2005). It is believed that this could be easily prevented if proper life-saving equipment was installed. Thus, such abuses may in some extreme cases result in death or loss of human lives.

Illegal fishing may also have social impacts. Some of the major social impacts of IUU fishing have been already discussed, i.e. the issue regarding the high-valued commercial fish stock and the ecosystem as well as the issue of food security. Another social impact of IUU fishing appears to be taken form in a more direct way. According to MRAG (2005a), *"direct conflict between IUU and other fishery users can often occur"* (p. 57). According to FAO (2007c), IUU fishing is undermining the work and efforts of regional fisheries management organizations (RFMOs). Not only does IUU fishing having conflicts with other fishing vessels and their owners, but some of the criminal organizations also respond with threats to RFMO secretariats in an attempt to drive them away and disturb their efforts in combating IUU fishing (FAO, 2007c).

6.4 Discussion and Recommendations

According to Agnew (2009), there has been made some progress in eliminating IUU fishing in the recent years. As a matter of fact, a total of 11 areas have successfully reduced their IUU fishing activities since the beginning of the 1990s (Agnew, et al., 2009). Although, IUU fishing activities in some degrees have been reduced and much effort and work have been made to eliminate them, there are still much more work left to do in order to further prevent, deter and eliminate these criminal activities (Commission of the European Communities, 2007). IUU fishing activities will not simply cease to exist. They will continue as long as there is fish in the sea and as long as it is beneficial.

By its nature, IUU fishing activities are not regional problems that only occur in a few places and at a specific time. It is a global issue. Thus, the different measures and recommendations to combat IUU fishing may be viable to all countries that are affected by the criminal acts.

[11] This fishing vessel was called "the Amur" and it was operating in the waters of Kerguelen Island (Gianni & Simpson, 2005).

According to Agnew (2009), the recommended solution to combat illegal fishing is often one that is related to promote an improved governance, i.e. the law, rules and regulations (See e.g. High Seas Task Force, 2006). Regional Fisheries Management Organizations (RFMOs) and monitoring, control and surveillance (MCS) play an important role to successfully mitigate IUU fishing activities (High Seas Task Force, 2006). Moreover, the economic incentives to take part in IUU fishing are quite high (Agnew, et al., 2009). Thus, there is a need to implement measures that may reduce these economic incentives, e.g. by increasing sanctions (Commission of the European Communities, 2007; WWF, 2008). According to Agnew (2009), all of the above mentioned factors have contributed to the most recent success stories as far as mitigating IUU fishing activities are concerned. One of these success stories is provided by WWF (2008).

The two most important fishing nations in the Barents Sea are Norway and Russia as their EEZ covers most of the fishing grounds (WWF, 2008). The main target species of the whitefish fisheries in the area are the Alaska Pollock and Atlantic cod (WWF, 2008). The annual legal catch of the cod stock is approximately 450,000 tonnes, while the illegal catch of the cod stock is estimated to be over 100,000 tonnes in 2005 where the amount is valued at US$350 million (WWF, 2008, p. v). Since 2005, IUU fishing of cod in the Barents Sea has been significantly reduced as the illegal landings have been estimated to be reduced by as much as 50% (WWF, 2008). Thus, it seems that there is a positive trend towards mitigating IUU fishing.

The industry's supply chain is very complex, and, therefore, efforts to combat IUU fishing need to be directed to each single stage that brings together the whole complex and dynamic supply chain network (WWF, 2008). These stages in the supply chain network include *"harvesting, transportation, storage, distribution, processing and marketing"* (WWF, 2008, p. 25). However, this will require a tremendous amount of efforts to establish an international cooperation between governments, organizations as well as consumers (WWF, 2008). Furthermore, it may be required that whole supply chain network has to be transparent and the products traceable. In this way, fish and fish products that originate from IUU would most likely be stopped before they could enter the international markets (WWF, 2008), and it may serve as a hindrance for those responsible for engaging in such criminal acts to benefit from it. As regard to traceability of fish and fish products, WWF (2008) suggests that an establishment of a mandatory traceability system is essential. On each stage of the value chain, legal documentation should be controlled as proof that the traded fish and fish products

do not originate from IUU fishing (WWF, 2008). According to WWF (2008), *"without a market for products derived from IUU fishing, the incentive for IUU fishing will be gone"* (p. 25). An isolation mechanism of IUU fish and fish products from the market may therefore contribute to eliminate the criminal activities. By enhancing the control at the port state, illegal fishing and trading could be prevented. It is suggested by WWF (2008) that a global port state agreement is needed. In this way, only those states that have *"registered and compliant ports can be involved in legitimate and sustainable seafood trading"* (WWF, 2008, p. 26).

One issue of particular concern is the so-called high seas and FOC transshipment of illegal catches. Such acts tend to take place on the high seas, and the catches are often stolen from other countries' coastal waters (i.e. the EEZ) (WWF, 2008). However, the illegal catches could be transported by FOC vessels. Thus, transshipment could either be done through transfers on the high seas or it could be done by transferring the catches to FOC vessel to transport the illegal catches. The recommended solution to the problem of transshipment (i.e. both high seas and FOC transshipment) is to ban such acts through making them illegal under international law and the given affected costal states' national legislation (WWF, 2008, p. 26). It may appear very simplistic to just recommend an overall ban of transshipments on the high seas and to FOC vessels in order to mitigate IUU fishing activities. However, one should keep in mind that there are many other factors that may play major roles in limiting or preventing IUU fishing, which will be discussed further in this section (e.g. port state controls and increased sanctions).

According to the WWF (2008), *"states need to recognize that it is in their best interest to meet obligations under UN Law of the Seas to manage their EEZs and stop IUU fishing"* (p. 26). It should rather be a moral obligation to promote sustainable ecosystems and act against IUU fishing. Any efforts directed towards promoting and maintaining sustainable development is undermined by IUU fishing activities (WWF, 2008). Therefore, any given governments affected or threatened by IUU fishing should contribute to control its own fishing activities in their own waters or EEZs. Reducing any efforts to mitigate IUU fishing activities would mean that those engaged in such activities may be giving a chance to get away and reap the benefits. WWF (2008) suggests that both the government and corporations could cooperate in order to form more robust institutional frameworks.

In the area of combating IUU fishing activities, the High Seas Task Force (HSTF) (2006) has contributed with a range of different proposals that may be useful to find solutions to IUU fishing, which will most likely continue if no actions are taken in order to combat it. The recommended action is first and foremost to *"improve the quality of information and intelligence on IUU fishing activity and access to it"* (High Seas Task Force, 2006, p. 4). Similarly to bycatch and discards, there is a general lack of information about IUU fishing activities. Thus, it seems to be reasonable to suggest that information must be gathered and data collected before any decisions on how to take action is made. Scientific advices and assessments of stocks may be more accurate if they are based on a high quality information source on the IUU fishing. Not only should information be collected, but it also has to be shared between countries and national control authorities, which include custom and tax agencies, police, fisheries agencies etc. (WWF, 2008, p. 25). Moreover, it is believed that better understanding and knowledge will lead to better decision-making on strategies for developed and developing countries to overcome IUU fishing in terms of monitoring, control and surveillance (MCS) activities as well as to form suitable policies against IUU fishing. In this case, developing countries may be more vulnerable than developed countries, and good informed plans and actions may support these countries as well. Thus, some special required needs are to be met in order to combat IUU fishing in developing countries (High Seas Task Force, 2006). The key to combat IUU fishing is to seek and secure good information about this criminal activity in order to address the issue at hand. It is important to stress that one cannot simply adopt standardized methods and apply them to every single region and country. However, the available tools should be adopted as countermeasures against IUU fishing. Moreover, one may have to consider to adapt and improve the tools to gather information as well as the methods in order to assess and monitor IUU fishing activities (High Seas Task Force, 2006). This must be prioritized. If IUU activities are detected in any fisheries, precautionary stock management measures should be adopted (WWF, 2008). Available estimates of IUU activities is recommended to be included as the total allowable catch (TAC) is decided and it should be included in the stock assessments as well (WWF, 2008, p. 27).

Another action to be made is to aid the currently existing international monitoring, control and surveillance (MCS) network with much needed resources (High Seas Task Force, 2006). As the network becomes larger, it may be able provide developing countries training and support in the future (High Seas Task Force, 2006). However, it is not enough to only gather information and support networks. A global system has to be developed and established with

the information on high-seas fishing vessels (High Seas Task Force, 2006). Furthermore, encouragement to implement e.g. the 1995 UN Fish Stocks Agreement is also essential to secure proper governance as well as long-term sustainable development (High Seas Task Force, 2006). In such a broad task, it is essential to include a broader collaboration between governments and organizations. However, an effort at a national level would not suffice, but there is a global need for an international collaboration and effort.

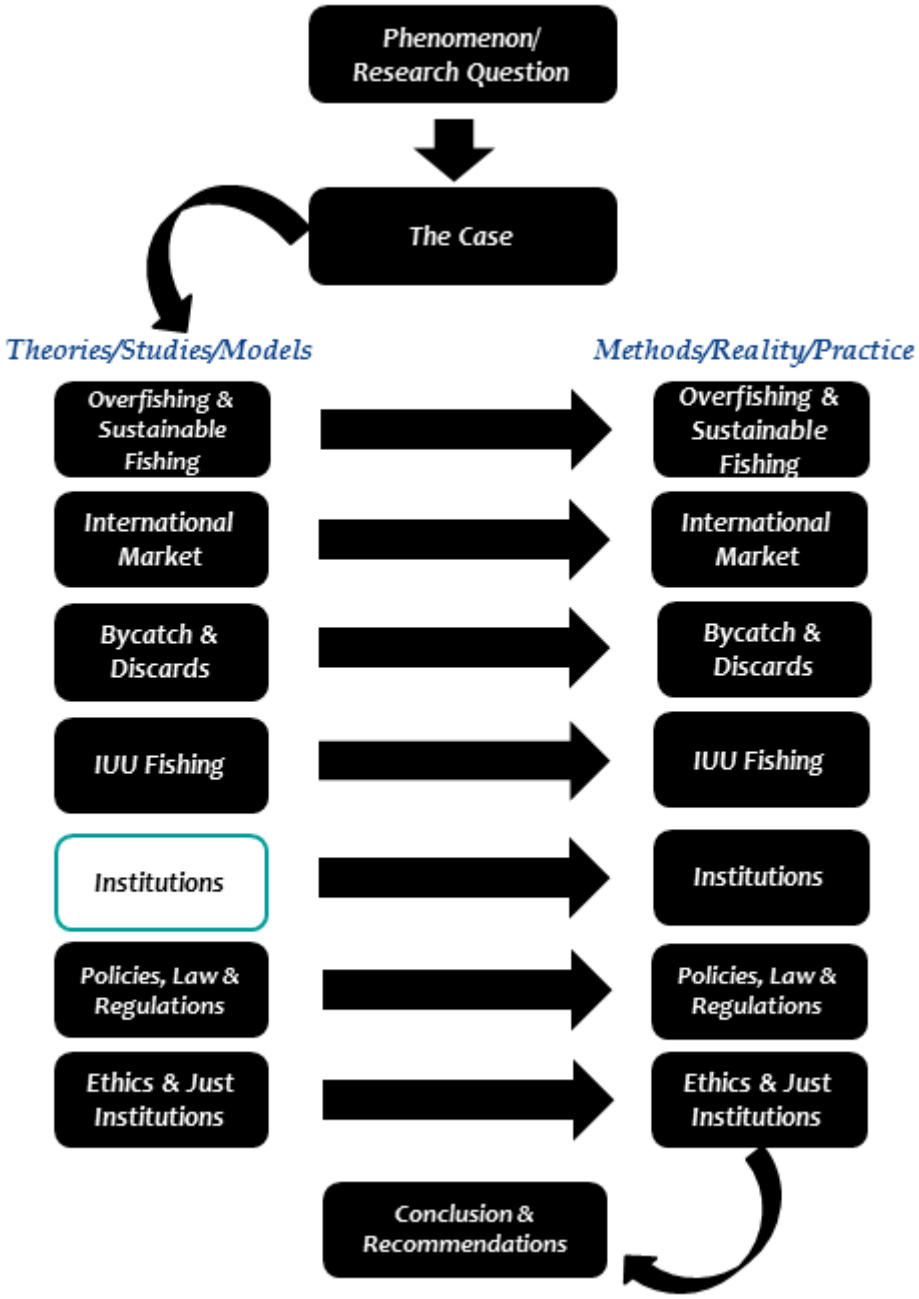
As far as Regional Fisheries Management Organizations (RFMOs) are concerned, the High Seas Task Force (2006) proposes that the performance and collaboration need to be improved. A reform of the RFMOs may be necessary in order to improve their performance. Other aspects that need to be improved are information sharing. According to the High Seas Task Force (2006), the RFMOs may play an important role in strengthening governance in areas where high-seas fisheries are rapidly establishing in to. These fisheries are often expanding in an unregulated and uncontrolled manner. Furthermore, the FOC system needs to be eliminated. Thus, countries that provide and countries that utilize such services need to seek to promote long-term sustainable development instead of bringing more harm to the sea. This means that both the provider and the utilizer of the FOC system need to change their behaviors in order for IUU fishing to be somewhat reduced (High Seas Task Force, 2006). In this case, the source of the problem appears to be the countries that issue FOCs. Without a country that provides FOCs, there would not be any countries that could take advantage of these countries or FOCs providers. However, this does not mean that coastal states that take advantage of such system are not responsible for their acts at all. They are, in fact, as much responsible for contributing to encourage IUU fishing as the countries that issue FOCs to foreign fleets. Thus, measures to improve controls over IUU fishing needs to be implemented in both the flag state and the port state (High Seas Task Force, 2006). The state that takes advantage of the FOC system needs to be controlled. More specifically, the import of IUU products from flag state to port states need to be controlled by strengthening the given port states' domestic legislation (High Seas Task Force, 2006, p. 6). There are often multinational corporations that could be behind the imports of IUU fish and products.

Further measures to mitigate IUU fishing could also be contributed by consumers and retailers. They could demand for some kinds of confirmation of where the fish and fish products originates from or whether the end-products could be traced through the complexity of the value chains (WWF, 2008). In this case, eco-labeling the products, which originate from legitimate sources, by the retailers could be convenient to certify the products and at the

same time increase the consumer-awareness of the existing IUU fishing in the market. The retailers (e.g. supermarkets or restaurants) may then have the opportunity to *"demonstrate social responsibility by promoting the fact that they serve only certified fish"* (WWF, 2008, p. 27). Public identification of organizations engaged in IUU fishing may also be a solution to establish awareness among consumers as well as governments.

As far as imposing sanctions to whoever may be involved in IUU fishing activities is concerned, the WWF (2008) suggest that individuals and corporations responsible for such criminal actions should be subject to a substantial amount of fines as well as penalties that may involve imprisonment. The levels of penalties should match the gravity of the criminal acts, and, in accordance to WWF (2008), it should be high enough to prevent IUU fishing from thriving. According to Griggs (2007), *"only by removing profits out of the transaction, and increasing the potentiality for being caught (and punished) will we see a true reduction on this type of behaviour"* (p. 168). In this case, the costs and risks of being caught should outweigh the benefits that could potentially be gained from engaging in IUU activities. Basically, if the benefits or the profits outweigh the cost of being caught, then it seems to be the same as to allow IUU fishing activities to thrive. By increasing the costs of being caught, the economic incentives in engaging in IUU fishing may be reduced to some extent as it may appear to be not as much appealing or encouraging as in the past. WWF (2008) even goes as far as to recommend governments *"to start dealing with IUU fishing in the same way they approach cross-border crime issues such as drug trafficking, illegal immigration and trafficking in persons"* (p. 27). This is a reasonable suggestion considering the magnitude of the problem of IUU fishing, which should not be taken lightly. Furthermore, public aid should not be provided to anyone that engages in IUU fishing activities (WWF, 2008). This could be e.g. individuals, groups, corporations, fishing vessels etc. By forming an international legal basis for countries through encouraging compliance with the UN FAO Code of Conduct for Responsible Fisheries (CCRF), there are possibilities to reach the goal of long-term sustainability and at the same time discourage IUU activities (Agnew, et al., 2009). According to Agnew, et al. (2009), certain countries in the world have already adopted some portions of the CCRF in their legislation. These countries include Norway, Malaysia, South Africa, Australia, Namibia etc. (Agnew, et al., 2009). Furthermore, the EU appears to be heavily committed to implement measures in order to prevent IUU activities. The goal is to stop trade of IUU fish and fish products by increasing import controls as well as raising higher sanctions for those who engage in IUU fishing (Agnew, et al., 2009).

According to WWF (2008), there is a constant threat of overfishing which in the long-term may bear significant problems to the future of the fishing industry. Given that the world population is increasing, there is a trend of increasing demand for food and sources of protein (e.g. protein from fish in this case). More people would mean that there are more mouths to feed. Agnew, et al. (2009) argue that the currently available fish stocks will have to face a tremendous amount of pressure in the next 50 years. If it is the case that the problem of overfishing extends over a long period of time, then the progress of mitigating IUU fishing may be at risk. It is crucial that the issue of IUU fishing is effectively addressed by the international community. It is argued by WWF (2008) that *"IUU fishing can take new shapes and IUU products can find new ways to the market"* (p. v). Thus, this means that there is undoubtedly much more work to do despite the fact that there is actually some progress being made in a broader perspective.


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
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7.0 Institutions

7.1 Definition of Institutions

Institutions are a set of formal and informal rules that are governing individual and firm behavior. An institution may differ from another, and some are written down in the form of laws and regulations, while others are imprinted in given cultures in the form of norms and values (Falkenberg, 2007). In other words, institutions are "rules of the game" in a given society, which members of a community have to obey or act in accordance to what is acceptable. Douglass C. North defines institutions as *"the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic"* (North, 1990, p. 3). According to Falkenberg (2007), "*institutions consist of norms, values, regulations and laws that constitute framework for behavior; a set of traffic rules for what we can- and cannot do*" (p. 1).

Peng (2009) suggests that the institutional framework could be divided into formal and informal institutions. Formal institutions consist of rules, law and regulations and informal institutions consists of norms, cultures and ethics (Peng, 2009). Moreover, the formal institutions' main supportive pillar is the regulatory pillar while the informal institutions' main supportive pillars are the normative and the cognitive pillars (Peng, 2009). According to Peng (2009), the regulatory pillar is *"how formal rules, laws, and regulations influence the behavior of individuals and firms"* (p. 93). The normative pillar is *"how the values, beliefs, and norms of other relevant players influence the behavior of individuals and firms"* (Peng, 2009, p. 93), and the cognitive pillar is *"the internalized, taken-for-granted values and beliefs that guide individual and firm behavior"* (Peng, 2009, p. 94), i.e. our cultural values.

7.2 Inadequate Institutions

The institutions in emerging and developing economies are often very different from the institutions in the developed western economies. The developed economies are in general often perceived as having superior institutions than those institutions in emerging and developing economies. Thus, one may say that institutions in emerging and developing countries may be inadequate. For instance, according to Falkenberg (2004), institutions may be inadequate as the *"legal and regulatory framework may be incomplete and fail to adequately protect people and the environment from harmful practices"* (p. 20). Emerging and developing countries may in some cases lack democratic governments. In this respect, these institutions may only be *"designed to serve those with political and economic power"*

(Falkenberg, 2004, p. 20), and, thus, fail to serve the local culture. In this case, one may assume that least developed countries (LDCs) may have corrupted officials and judges. Falkenberg (2004) explains that this may *"disrupt the proper functioning of markets, competition, property rights and due process law"* (p. 20). Since these institutions are designed to serve those in power, the end result this particular action may lead to poor social conditions. Many people would then fail to cover their most basic needs, which are food, nutrition for the children, education, health care etc. (Falkenberg, 2004).

Moreover, many poor countries seek to attract foreign skills, technology and investment into their countries, and they often have to negotiate with multinational corporations which are much larger than themselves in economic terms. Consequently, the poor countries often find themselves in a position of weakness or at a position considered disadvantage when dealing with major multinationals, and, thus, they are often forced to agree to unreasonable terms (Falkenberg, 2004). The circumstances of poor countries are in many ways different from one in developed countries. Thus, Falkenberg (2004) argues that the *"concern for basic survival may override concerns for the environment, safe products, pollution and the like"* (p. 20). Moreover, due to the poverty, they are not able to cover basic needs, e.g. in education, health care and nutrition for the children (Falkenberg, 2004). Furthermore, cultural differences in emerging and developing countries may *"permit practices which are in clear violation of basic human rights, such as differential treatment based on political beliefs, religion, nationality, race, ethnicity or gender"* (Falkenberg, 2004, p. 20). However, this is considered to be a problem in developed countries as well.

Falkenberg (2004) argues that many emerging and developing economies may lack adequate institutions *"when it comes to providing a framework for the operation of economic organizations"* (p. 20). Quite often when MNCs operate overseas, in particular developing countries, they may encounter problems which may relate to ethics. Ethical dilemmas may occur when MNCs find themselves in a situation where they have a choice whether to act accordingly to ethical principles or engage in unethical practices and reap the benefits. Some MNCs may have chosen the latter. This is because the chances of getting caught are much lower than the chance to get away with it and gain a substantial amount of revenues. Thus, unethical practices may for some MNCs be beneficial. The reasons why these developing countries allow such practices are *"because there is no law or regulation against it, or it is not objectionable according to the local convention or local cultural values"* (Falkenberg, 2004, p. 21). In some cases, the developing countries may not have the resources or

knowledge of how to stop such actions, or they simply cannot afford to make use of their resources to control and manage all of the MNCs' activities. In other cases, corruption may have been the reason. Thus, the MNCs that engage in unethical practices are driven by the fact that the governments in developing countries may fail to promote law enforcement and, of course, all the benefits that follow. This means that these MNCs that have violated basic laws and regulations may never have to face the consequences. Furthermore, Falkenberg (2004) claims that some of *"our material welfare may be resting on exploitive practices"* (p. 21). Thus, some of the various products that are purchased from customers may have been a part of an exploitive and unethical practice. In this way, one may say that by purchasing these products, which are related to such practices, could be seen as a contribution to MNCs continuous exploitive and unethical practices. The shoes that you wear may have been once produced by child labor. The fuel that is used to run your car may have been extracted from a place where government official are corrupt, and the human rights of the local population are deprived. The fish that you eat to dinner may be illegally fished, and it may as well be one of the species in danger of extinction.

Falkenberg (2004) argues that *"if a firm were to take full advantage of the local conditions in an opportunistic, selfish and egotistical manner, costs could be reduced substantially, revenues could be increased, thus positively affecting the bottom line"* (p. 21). This means that the given firm would not act accordingly to what is considered ethical principles, but the act itself may be in violation against basic rules and regulations. The consequence from such selfish and opportunistic action may be one that affects negatively on the local population and the environment in which the firm operates. Examples of practices in which is considered unethical may include practices and activities such as hazardous working conditions for the hired employees, the firm may pay minimum or below average wages, young children may be exploited, the firm may bribe government officials, etc. (Falkenberg, 2004). The latter may come into play as the firm may want to acquire access rights to the developing countries' natural resources, which Falkenberg (2004) argues that these resources neither belong to the government nor its officials, but the population of a given state. Moreover, Falkenberg (2004) suggests that harmful practices produced by, what he calls, "an opportunistic ethical egoist" may be those that could potentially: *"deplete natural resources, extinguish species, release toxic wastes to the water or to the air, ignore unions, bribe public officials, pay no taxes, produce and sell dangerous products, or engage in illegitimate discrimination"* (p. 21). The

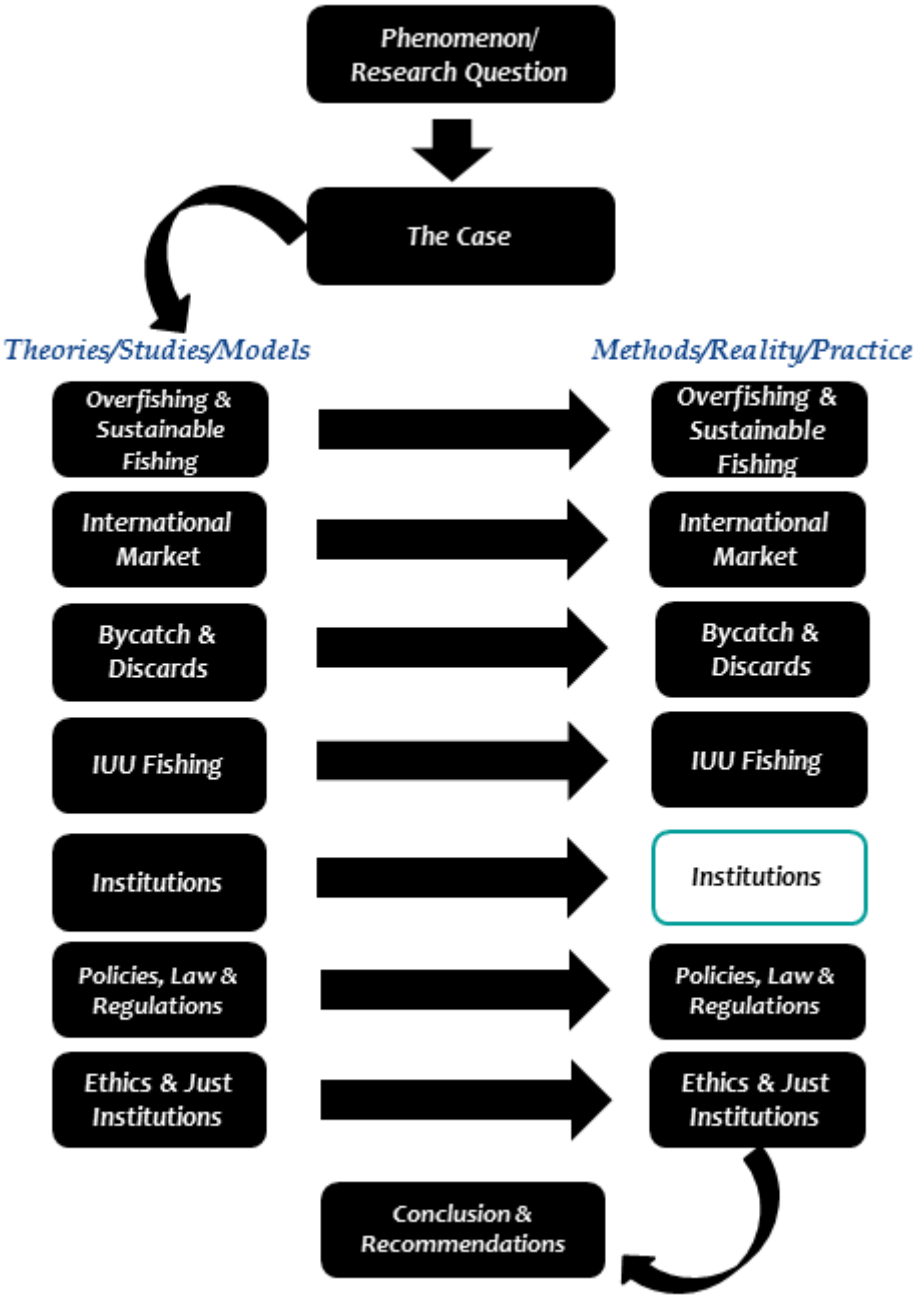
difference between "opportunistic ethical egoist" and "utilitarianism" will be discussed later on.

Falkenberg (2010b) suggests that eight items should be in place for certain institutions to achieve efficiency in governing both economic and political systems. These include:

1. *Many buyers and sellers without market power (ability to affect price) i.e. no monopolies.*
2. *All buyers and sellers can come and go when they decide to (no exit/entry barriers).*
3. *All buyers and sellers have complete knowledge of each other's prices, qualities, and quantities sold.*
4. *The products in the market are good substitute for one another.*
5. *All costs and benefits are borne by the parties to the exchange and not by others*
6. *All participants seek to maximize their utility*
7. *No external agents seek to regulate quality, quantity or price.*
8. *The buyers and the sellers must own what they exchange; protected property rights.*

(Source: Falkenberg, A. W. (2010). Syllabus and readings for Org 439: Culture and Ethics in International Organizations. University of Agder, Essay #15, pp. 2.)

Economies that are considered inefficient may often violate one or more of the items listed above (Falkenberg, 2010b). Thus, the violation of one or more of these items may make poor countries even worst off. According to Falkenberg (2010b), in many poor but *"resource rich countries, the politicians may sell their country's natural resources and not use the income to enhance flourishing for their people"* (p. 2). In this case, it may be a violation against item number eight listed above.


Phenomenon/ Research Question
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Conclusion & Recommendations

7.3 Small-Scale Fisheries in Developing Countries

According to FAO (2009b), *"in many developing countries small-scale fisheries contribute directly to food and livelihood security, balanced nutrition, poverty reduction and wealth creation, foreign exchange earnings and rural development"* (p. iv). According to FAO (2010a), *"the importance of the small-scale fisheries sector is of global reach. Its diversity in technology, culture and traditions is part of humankind's heritage"* (p. 70). Small-scale fisheries dominate in terms of employment in developing countries. They often provide economic, social and nutritional benefits to these developing countries (FAO, 2010a). However, one issue of particular concern is poverty that is mainly found in the poorest regions in the world, such as the South and Southeast Asia and the sub-Saharan Africa (i.e. including West Africa) (FAO, 2010a). Consequently, poverty would influence communities of the small-scale fisheries in such a way that millions of people are exposed to highly *"vulnerable living and working conditions"* (FAO, 2010a, p. 70).

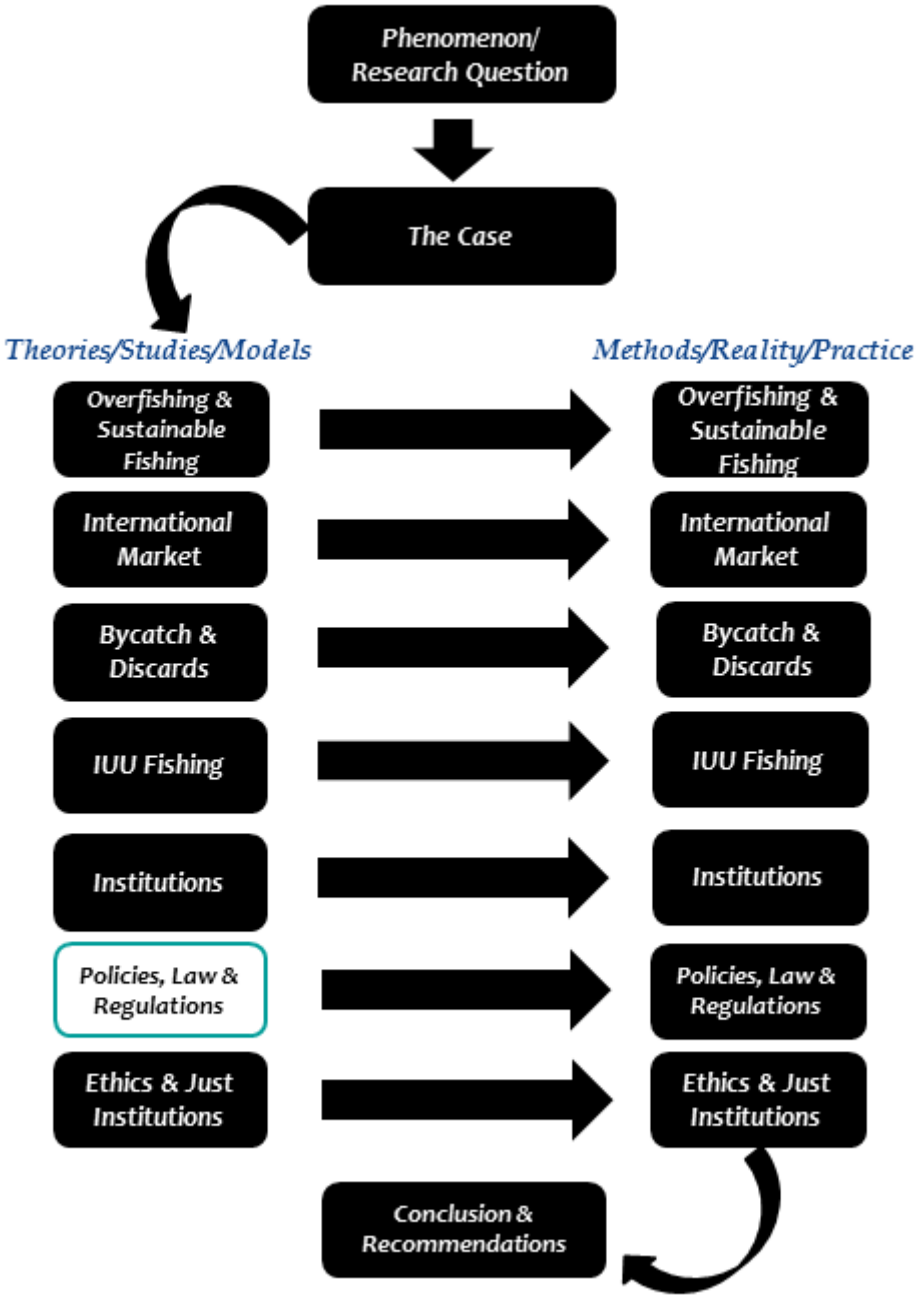
FAO (2010a) argued that the general emphasize on socio-institutional factors rather than economic and biological aspects may be important in order to reduce poverty in the long-term. Although, the constantly threat of overfishing is unquestionably important to address, what is more important is to find the real causes of poverty in developing countries. Moreover, it is important to influence those institutions that may have played a major role in impeding prosperity and flourishing and instead generates poverty (FAO, 2010a), i.e. inadequate institutions. In this case, the social structures and institutional arrangements in developing countries that may have the power to control *"how and by whom fishery and other resources can be accessed and used"* (FAO, 2010a, p. 70), may also be one of the major factors that causes poverty. FAO (2010a) suggests some critical factors that may have contributed to poverty in small-scale fisheries in developing countries. These include *"insecure rights to both land and fishery resources; poor or absent health and educational services; lack of social safety nets; vulnerability to natural disasters and climate change; and exclusion from wider development processes owing to weak organizational structures and inadequate representation and participation in decision-making"* (FAO, 2010a, p. 11). Thus, in order to address the issue of poverty, there is a wide range of requirements that need to be met. One of these is to include marginalized groups *"in the institutional processes related to resource management and that, in order to achieve this, new institutional approaches are needed"* (FAO, 2010a, p. 70). Given that the people in the fishing communities have to deal with many challenges with regard to poverty on the daily basis, such as to meet their basic

needs, resource management may not be the top priority (FAO, 2010a). In most cases, the main problem may not be the lack of encouragement and motivation to participate in resource management, but the lack of capacity may have been the real issue as most people are not able to afford to spend their valuable time to participate in resource management when their most basic needs are not even met. Thus, unless the issue of poverty is addressed first, these new institutional approaches that are related to resource management may become ineffective (FAO, 2010a).

Fish catches and fish capacity need to be controlled by national, regional and international institutions. According to UNEP (2011), *"the root cause of overexploitation of fish stocks is the lack of control over fish catches or fishing capacity, or both"* (p. 99). The fierce competition among individual fishers often results in encouraging them to catch as much as possible fish in a small time period (UNEP, 2011). Thus, if these uncoordinated efforts from individual fishers are left unchecked and uncontrolled, the outcome would be depletion of current fish stocks. Exploiting these fish stocks further to the extreme would result in harming future fish catches and potentially depleting fish stocks to the point of no return, i.e. completely annihilate the fish populations, as well as increasing the costs of catching fish (Hannesson, 2004).

For the reason that many fish stocks often migrate, UNEP (2011) suggests that there is a need of *"effective institutions at all levels of government, from the local to the provincial/state to the national, regional and international […]"* (p. 99). However, unlike migrating fish stocks, i.e. from one EEZ to another or to the high seas, there are some fish stocks live completely within the EEZs and do not migrate. Thus, it is suggested that all that is needed is effective and adequate institutions on the national level (UNEP, 2011). There are also fish stocks that migrate from one Exclusive Economic Zone (EEZ) in a country into other countries' EEZ, which is called *transboundary fish stocks* (UNEP, 2011). In order to achieve long-term sustainable fisheries, effective management of shared fish stocks is needed. Thus, it is required that fisheries agree to cooperate on the management of shared fish stocks, i.e. *"if these resources are to exploited on a sustainable basis"* (Munro, Van Houtte, & Willmann, 2004, p. 57). One issue of particular concern may be the ineffective regulation of fish stocks that live partly or completely in the high seas (UNEP, 2011). The regulation of these fish stocks is proved to be ineffective for the reason that they are in some cases governed by more than one coastal state (UNEP, 2011, p. 99). However, the issue further complicates as these fish stocks tend to migrate to the high seas, which is considered an open access area where

different rules and regulations cannot be enforced as there is no international police to ensure compliance to the international law of the sea.


Phenomenon/ Research Question
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8.0 Policies, Laws and Regulations

8.1 The United Convention on the Law of the Sea (UNCLOS)

According to Hannesson (2004), *"international law is a set of rules which nations have come to agree, explicitly or tacitly, is in their mutual interest to follow. There is no legislative assembly providing international law, and there is no international police force that can enforce it"* (p. 29). However, an international court of justice does exist, but the disputes around the globe would not be solved unless the certain countries involved are willing to bring their disagreements into the court (Hannesson, 2004).

According to Hannesson (2004), the Exclusive Economic Zone (EEZ) has not always been 200 nautical miles from the coast as it is known for today. Before the 200-mile limit was established, the national boundaries at sea had been 3 miles (Hannesson, 2004). The idea of 3-mile limit originated from the Dutch, which was dated back to the 1600s where the Dutchmen were an important trading and fishing nation. Thus, the Dutch was *"the most energetic defenders of the freedom of the seas"* (Hannesson, 2004, p. 30) during that period of time. Another idea that also originated from the Dutch was to use the range of the land-based cannons in order to determine how far off the coast a given state could govern the sea (Hannesson, 2004). For many years, the 3-mile limit was perceived as a norm until the end of World War II (Hannesson, 2004). However, after the Second World War, rapidly technological progress had made this norm of 3-mile limit obsolete (Hannesson, 2004, p. 31). This was especially the case when it came to the high technological development in both fisheries and oil extraction, which the latter had at that time become an increasingly important source of energy and perhaps even more now (Hannesson, 2004). After the Second World War, *"the world catch of fish increased steadily by about 6 percent per year up to the early 1970s"* (Hannesson, 2004, p. 34). As the world catch of fish had increased, and so did also the fishing pressure on different stocks around the globe. Not only did the global fishing pressure on several of the fish stocks increase during this period, but due to the issue of ownership of the marine resources, the conflicts between many countries over these fish stocks increased as well (Hannesson, 2004, p. 34). Thus, the international disputes had to be addressed, and in order to seek the ideal solution to these problems, *"the United Nations held three conferences on the law of the sea in the period 1958-1982"* (Hannesson, 2004, p. 34). Furthermore, Hannesson (2004) emphasized that the superpowers at the time, i.e. the United States of America and the Soviet Union, played a significant role during these conventions.

The first conference on the law of the sea was held in Geneva in 1958, the second conference was held two years later in 1960, and the third and last in 1973 (Hannesson, 2004). According to Hannesson (2004), the first and second conference on the law of the sea in 1958 and 1960 failed. This was mostly due to the disagreements regarding the question of how wide the jurisdictions over the marine resources should be. This means to what extent the ownership of resources on and underneath the seabed should be implemented for coastal states to reach an agreement on jurisdiction over the living resources in the sea. Some countries wanted to maintain the old 3-mile limit while others sought after a wider 12-mile limit (Hannesson, 2004). Furthermore, the disagreements over ownership of resources on and underneath the seabed did not only concerned fish resources, but also oil extractions and deep-seabed mining. The technological advances after the Second World War had made it possible to extract important minerals from the deep seabed. Thus, technological progress had opened up many opportunities both in fisheries, oil extraction and deep-seabed mining, and as a result from these technological advances, ownership over these resources had become increasingly important for many countries. Most notably were the coastal states, which wanted to *"establish ownership over the fish resources off their shores"* (Hannesson, 2004, p. 35) For instance, deep-seabed mining was regarded by many countries that exported minerals as a threat to their own exporting activities (Hannesson, 2004, p. 35). Thus, establishing ownership to these resources would contribute to limit competition. Another reason for why there was a need to establish ownership to the resources was because the developing countries were worried that developed countries would take advantage of their superior technological advances in order to secure these resources for themselves. Thus, the disagreements in the UN Conference on the Law of the Sea were undoubtedly caused by the different countries' diversity of interests. Each country wanted to prioritize and secure their own interests, which made it even more difficult to reach an agreement that benefited everyone. As a matter of fact, no agreements were reached after the first conference in 1958 or the second conference in 1960. According to Hannesson (2004), the first and second UN Conference on the Law of the Sea *"failed to reach the required two-thirds majority"* (p. 34).

The third conference on the law of the sea was held in 1973, and it was expected to be concluded within the next year (Hannesson, 2004). However, the conference turned out to last for about ten years, i.e. from 1973 to 1982 (Hannesson, 2004). According to Hannesson (2004), the consensus approach is the reason why the third conference had lasted for so long. In the two first conferences in the law of the sea, the main focus was mostly towards the

establishment of ownership over fish resources and the uncertainties surrounding deep-seabed mining. However, in addition to the previous issues, the third conference included a broader range of relevant issues that concerned the sea (Hannesson, 2004). The issues included in the third conference were *"fisheries, pollution, navigation, research, and issues regarding the delimitation of the continental shelf raised by the ongoing advances in the technology for offshore oil extraction"* (Hannesson, 2004, p. 35). The third conference continued to address the issues that it failed to solve at the previous two conferences, and the diversity of interests from countries that participated in the UNCLOS remained the same. As far as the fisheries were concerned, the differences of interests came into play as the countries that tend to fish at coast were more interested to reserve these resources, while others tend to send their fishing fleets to other parts of the world to fish. Thus, all countries were interested in acquire fishing rights that better fit their activities. According to Hannesson (2004), *"from the beginning there was, however, a strong undercurrent favoring increased rights of sovereign states in the waters off coasts, at the expense of distant water fishing nations and nations with access to the sea but a short coastline or encircled by states bordering on the open ocean (Sweden versus Norway and Denmark, for example)"* (p. 36).

Furthermore, Hannesson (2004) suggested that there are overall three principal ways that may work in favor of the coastal states' interests. These include *"(i) extending the jurisdiction over the continental shelf to the waters above the shelf, (ii) defining access rights to fish stocks with reference to in which state's waters they originate or mainly are found, and (iii) establishing fisheries jurisdiction over a certain territory irrespective of ecological or topographical factors, such as 200 miles from the shore"* (Hannesson, 2004, pp. 36-37). It is further argued that the second point would be the most useful in terms of efficient control of the fish stocks (Hannesson, 2004, p. 37). However, the extent to which this particular proposal would successfully work in practice remained questionable. This is for the reason that some fish species may migrate from one jurisdiction to another or even to the high seas. If it is assumed that a coastal state had actually been granted access rights to fish stocks based on where they originated from, then the question is whether that particular coastal state is able to enforce rules in order to govern these fish stocks, regardless of how far these fish stocks may migrate from their coast. Thus, Hannesson (2004) argued that there may be some jurisdictional issues related to put this proposal into practice. Although, the United States supported the proposal, it got very little support from other countries that participated in the conference (Hannesson, 2004). Despite the lack of support of the proposal in the convention,

"the idea of ownership belonging to the coastal state, or the state where a fish stock originates, lives on in the articles of the Law of the Sea Convention pertaining to anadromous species […]" (Hannesson, 2004, p. 37). According to FAO (2005a), anadromous species are fish species such as salmon and rainbow trout. What actually distinguishes these species from other highly migratory species is that they live in both freshwater and saltwater (FAO, 2005a). Take for instance salmon as an example. Salmon is spawned in freshwaters, such as in rivers. However, they tend to migrate to the sea in order to feed and grow. Once they have grown and reached maturity, they return back to their original spawning ground in order to spawn, and so the cycle repeats itself (Hannesson, 2004). Fishing for these species at the high seas would have serious consequences as this cycle would break, which in turn would mean that less fish would spawn. As a matter of fact, the catches of anadromous species (e.g. salmon) in the high seas are completely forbidden (Hannesson, 2004). However, the same rule does not apply for catches of other highly migratory species (Hannesson, 2004).

In the first of the three principal ways that may work in favor of the interests of coastal states, it encompasses the idea of granting the coastal state extended jurisdiction over the continental shelf. The main constraint to the previous idea was to grant coastal state ownership rights to resources restrictively to what was on and underneath the seabed. However, as this idea has been further developed over the years, it additionally included the waters above the continental shelf. Hannesson (2004) argued that the functionality of this idea would be similar to the idea where the coastal state are granted the ownership rights to fish stocks based on where they originated from. It is further argued that *"this would have been logical if the rights to resources on and underneath the seabed had continued to be limited to the continental shelf"* (Hannesson, 2004, p. 37). If it had not been for the technological advances after the Second World War, which had made it possible to exploit resources of the sea, such as fish, to a much greater extent, the conference would have not been struggling to reach an internationally agreed solution for which rights coastal states should be granted. According to Hannesson (2004), *"continued technological development made it possible to exploit resources under the ocean bottom at greater depth than 200 meters"* (Hannesson, 2004, p. 37). Already the year after the third conference on the law of the sea was held, the 200-mile exclusive economic zone was introduced as a simple but clever solution to this (mindboggling) problem and it was supported by many countries that participated in the conference (Hannesson, 2004). The solution included exclusive ownership rights to coastal

states over resources that are either above, on or underneath the bottom of the sea (Hannesson, 2004).

Long before the third United Nation Conference on the Law of the Sea was concluded in 1982, some of the rules that were put forward during the conferences were early adopted by several countries, and eventually they became international law *de facto* (Hannesson, 2004). This means that these laws were put into practice, despite the fact that they have not been officially or legally established. For instance, the 200-mile limit rule became an international law *de facto* long before the third conference was concluded (Hannesson, 2004). According to Hannesson (2004), *"already in the latter part of the 1970s many countries established a 200-mile exclusive economic zone"* (p. 38). These countries include Chile, Ecuador, Mexico, Panama, and Peru. The main reason for why these countries adopted the 200-mile limit was due to their small continental shelf and their exploitation of fish stocks that are located deeper than 200 meters below the surface of the waters (Hannesson, 2004). Similarly, Argentina and Iceland did also claim ownership of the resources of the sea (Hannesson, 2004). However, more importantly the United States early adopted the idea of the 200-mile exclusive economic zone from its coast in 1976 and later it became a law during an election campaign between President Gerald Ford and Jimmy Carter, which was *"against the will of the US negotiation at the conference and two important departments of the US government, the Department of State and the Department of Defense"* (Hannesson, 2004, p. 38).

At the time the UNCLOS was concluded in 1982, not all countries that participated in the conference supported the solutions. As a matter of fact, the United States of America and a few other countries voted against the UNCLOS (Hannesson, 2004). This was mostly for the reason that some of the rules adopted by the UNCLOS did not worked in favor to the United States' deep-seabed mining (Hannesson, 2004). Even though, the United States did not sign the convention until later, they were independently capable and able to implement and enforce their own set of rules and regulations (Hannesson, 2004). The main reason for why this was possible for the United States was because they were and indeed still are one of the most powerful countries in the world, and they could therefore unaffectedly and completely ignore the UNCLOS if they chose to do so. However, deep-seabed mining soon turned out to be not as economically profitable as previously anticipated (Hannesson, 2004). Eventually, the United States was willing to give their formal approval to the UNCLOS.

In 1994, the United Nation Convention on the Law of the Sea (UNCLOS) had officially and formally became an international law as it is well-known for today (Hannesson, 2004). A total of 60 states gave their formal approval to the UNCLOS by the time that it became an international law of the sea, which was the minimum requirement in order for the proposals that were put forward in the conference to be adopted (Hannesson, 2004). In 2003, a total of 145 states had signed the UNCLOS (Hannesson, 2004). Hannesson (2004) argued that the UNCLOS would never become an international law if it was not for the support from the superpowers, i.e. the United States and the Soviet Union. Although, the challenges on the way to reach an internationally agreed solution were not without conflicts, setbacks or criticisms, e.g. aimed towards the text of the convention for being inconsistent and ambiguous, the achievements of the United Nations Conference on the Law of the Sea are no doubt remarkable (Hannesson, 2004). According to Hannesson (2004), *"most of human history is a history of ethnic cleansing and rule by the club, the sword, the cannon, the machine gun, and the bomb"* (p. 39). Thus, the United Nations Convention on the Law of the Sea has proven that it is possible to establish an international law, and international disputes and issues are no longer solved through military power but instead they may be negotiated peacefully.

8.2 Weaknesses of the 200-mile Zone

According to Hannesson (2004), *"the main weakness of the 200-mile zone is that it does not establish property rights over fish stocks as such, except when stocks happen to be enclosed within the zone"* (p. 52). This brings back to the previous point made by Hannesson (2004), where it was argued that the international law could not be enforced for the reason that there is no 'international police'. This is particularly the case when it comes to the high seas, which is outside of the 200-mile exclusive economic zone. According to Hannesson (2004), *"a fish stock that is accessible on the high seas is no one's property"* (p. 43). Thus, it was further argued that since there is no international police to enforce the international law, and since the high seas are outside of a given country's EEZ, fishing vessels around the world are encouraged to fish on the high seas (Hannesson, 2004, p. 52). The trend of high seas catches over the past few decades may reflect this particular weakness of the 200-mile zone. The global trend of catches from the high seas, which is also called 'oceanic catches', had gradually increased in the period from 1950 to 1999 (Garibaldi & Limongelli, 2002). According to Garibaldi and Limongelli (2002), catches from the high seas accounted for around 4-8% of the world catch in the period from 1950 to 1989. However, in 1998 and 1999,

the catches in these areas had accounted for more than 10% of the world catch (Garibaldi & Limongelli, 2002).

Since the United Nations Conference on the Law of the Sea had been concluded in 1982, coastal states are granted ownership rights to the resources within the 200-mile exclusive economic zone. This means that the coastal states have been assigned property rights for whatever resources within the EEZ. Inside this economic zone, the coastal states may manage their resources however they see fit (Hannesson, 2004). More precisely, the coastal states are required to grant other states the right to exploit any surplus of fish resources that they are unable utilize themselves (Hannesson, 2004). Furthermore, each coastal state has the power to decide its own total allowable catch as they see suitable within their waters, i.e. exclusive economic zone (Hannesson, 2004). In contrast to the fish stocks in the high seas, the fish stocks within an exclusive economic zone are only available for the respective coastal state and for other states that have been authorized to fish in its waters (Hannesson, 2004). Thus, the numbers of players that want to exploit fish stocks within the EEZs are considerable fewer than on the high seas. However, Hannesson (2004) argued that *"in great many cases states do not impose very strict access controls on fish stocks within their economic zones, and some have practically no controls at all"* (p. 43). The question at hand is whether these waters are currently overfished due to the lack of control and surveillance or do the states that have been authorized to fish in a foreign country's waters actually exploit these fish stocks sustainably. If a coastal state for whatever reasons do not control the access on fish stocks within their own economic zone, the only element that distinguishes the economic zones from the high seas is practically gone. Thus, the absence of regulation and access control to fish resources within exclusive economic zones and the free access to fish resources on the unregulated high seas appears to be no different from one another (Hannesson, 2004, p. 43).

8.3 The Complementarity Principle

According to Brown (2005), *"all bilateral fishing agreements are based on the principle of complementarity between national and foreign fishing concerns"* (p. 4). UNEP (2002) indicates that any fishing agreements between a national and foreign country should be rejected if they are not consistent with the principle of complementarity. It is particularly important both in terms of the environmental and social point of view. According to UNEP (2002), there are some conditions that need to be met in order for a state to apply this principle, which in many cases are quite demanding at least in practice. Implementation of the complementarity principle requires that states should have: *"[1)] assessed stock levels per*

target species; [2)] estimated precisely, on the basis of scientific studies, the level of the annual taking compatible for each stock; [3)] determined, by substraction, the balance that is likely to be attributed to foreign fishing boats in the form of licenses or fishing rights on specified quantities of target species" (UNEP, 2002, p. 22).

UNEP (2002) argues in that conflicts between the national and the foreign fishing fleets should not occur, at least in theory. This is with respect to the third condition, the fishing rights and licenses to the coastal states' waters should only be able to acquire by foreign states, when the given coastal state has any 'surplus' fish resources after the national fishing interests are satisfied and domestic or local market is sufficiently supplied. However, in reality it is not always that simple. In fact, the gap between theory and practice has continuously widen from the beginning (UNEP, 2002). This is because not all coastal developing countries, which were or still are in a 'partnership' with the EU, are able or capable to implement this principle and its conditions in practice. For example, due to the lack of financial capital, the given coastal state may not be able to assess fish stock levels for each target species, and without any knowledge or consistent scientific data, it may not have the proper tools to estimate the sustainable level of annual fish catch. The latter issue may also arise in developed countries. In the case of the fishing access agreements between the EU and Senegal, the concept of complementarity may have not functioned very well (UNEP, 2002). The same could be said about other fishing access agreements between the EU and other countries, e.g. the ACP countries.

8.4 The Common Fisheries Policy (CFP)

The Common Fisheries Policy (CFP) is the European Union's (EU) fisheries policy. The CFP only deals with issues regarding fisheries, both within the internal European waters and the external international waters. Before the CFP was created in 1983, all of the issues concerning fisheries were originally handled under the Common Agricultural Policy (European Commission, 2009c; Béatrice. Gorez & O'Riordan, 2003).

The main purpose of the CFP is to promote *"sustainable fisheries and aquaculture in a healthy marine environment which can support an economically viable industry providing employment and opportunities for coastal communities"* (European Commission, 2009c, p. 8). These core principles of the CFP were agreed by 15 member states of the EU in 2002. Conservation of marine resources is according to the CFP referred to sustainable exploitation of the oceans' resources in such a way that the fish stocks are *"able to replenish themselves,*

and resilient enough to withstand other external shocks" (European Commission, 2009c, p. 8). External shocks are here referred to changes in the external environment, in which are largely beyond human control, e.g. pollution and the impact of climate change (European Commission, 2009c).

With regard to the small-scale fisheries sector, policy-makers and planners generally suffer from the lack of information and knowledge gaps (FAO, 2010a). In turn, this may prevent the policy-makers from establishing and formulating several key policies that are relevant to the small-scale fisheries sector (FAO, 2010a). As a consequent, this may impede policy-makers from heading in the right direction, which is *"to maintain and improve the contribution by the sector to food security, poverty alleviation and employment"* (FAO, 2010a, p. 71). This is especially the case when it comes to developing countries. The long-term objectives of the CFP are to *"bring fish stocks back to sustainable levels by ending overfishing and setting fishing opportunities based on scientific advice"* (European Commission, 2011b, p. 1). Fishing opportunities are here defined as *"a quantified legal entitlement to fish, expressed in terms of catches and/or fishing effort"* (Council Regulation (EC), 2002, p. 56).

Gorez and O'Riordan (2003) argue that the CFP has failed to monitor and control the balance between fishing efforts and the sustainable use of the resources. The EU has since then shifted their attention away from the core principles of the CFP, and the level of dependency towards external fish supplies gradually increases. The aim of fishing outside of EU waters was to *"meet both its market (processing and consumption) and fishing sector (employment and investment) demands"* (Béatrice. Gorez & O'Riordan, 2003, p. 4). This had led to increased fishing pressure especially in ACP (African, Caribbean and Pacific) countries as the EU had acquired access to these countries' fishery resources through fishing agreements. Thus, Gorez and O'Riordan (2003) expressed their concern when they stated that *"the fishery situation in the EU today (over-capacity, depleted resources, supply deficit, etc.) is both potentially promising and perilous for ACP states"* (p. 4).

In 2008, the European Commission was supported by the Council of Fisheries Ministers to carry out plans to develop a new reform of the CFP (European Commission, 2009c). The consumption level in the EU is much higher than fish stocks are able to replenish. Thus, increasing fishing efforts are undeniably threatening the ecosystem in what is already considered overexploited waters (European Commission, 2011b). This situation could be described as being very destructive in many ways, since the increasing fishing efforts

combined with dwindling fish stocks will result in smaller catches over the years. If these stocks are exploited even further, the individual fish stocks may become extinct as they are unable to replenish themselves. Currently *"three out of four stocks are overfished: 82% of Mediterranean stocks and 63% of Atlantic stocks"* (European Commission, 2011b, p. 1). Recognizing the destructive nature of overfishing, the European Commission aims for a better future by promoting sustainable practices through a reform of the CFP in terms of environmental, economic and social aspects (European Commission, 2011b). Thus, sustainability across the fishing industry is the core of the reform. According to the European Commission (2011b), *"fishing sustainably means fishing at levels that do not endanger the reproduction of stocks and that provide high long-term yields"* (p. 1).

8.5 Non-Governmental Organizations (NGOs)

According to Falkenberg (2004), *"NGO's have played an important role in the formation of current institutions in the Western world"* (p. 21). Non-governmental organizations may include *"religious organizations, human rights organizations, aid and development organizations, aboriginal organizations, environmental organizations"* (Falkenberg, 2004, p. 22). Non-governmental organizations often aim their criticism and accusations toward multinational corporations (MNCs) throughout the world that shift some of their business practices and activities abroad (Falkenberg, 2004). The violation of basic human rights, justice, the environment and safety issues, e.g. hazardous working conditions, are some of the major areas in which the NGOs' allegations are centered (Falkenberg, 2004). NGOs attempt to bring MNCs that have violated basic laws and regulation or participated in criminal practices into ethical scrutiny. This is done through bringing all the MNCs wrong-doings into the public attention in a given MNC's home country (Falkenberg, 2004). Thus, some NGOs may serve as some kind of international police or, what Falkenberg (2004) calls, *"watchdogs in areas where institutions are inadequate"* (p. 22), and they may contribute to *"increase the costs of unethical practices"* (p. 21). By uncovering the MNCs' wrong-doings and presenting the information and evidence to its audiences, the NGOs and the media may both benefit from their publicity (Falkenberg, 2004). NGOs are like any other organizations - they need capital in order to survive. Thus, there are many NGOs in which greatly depend on voluntarily financial donations and support from inspired individuals and/or organizations (Falkenberg, 2004). NGOs try not only to reach the public through the media, but also the key stakeholders which the MNCs are dependent on. If a NGO has found out that a MNC has engaged in

unethical practices, these messages with evidence may be delivered by the media. In turn, this may weaken the trust that key stakeholders have to the MNC (Falkenberg, 2004).

(NGOs attempt to bring MNCs that have violated basic laws and regulation or participated in criminal practices into ethical scrutiny). This may be particularly the case when it comes to international corporations that base their action solely on a straight forward cost-benefit analysis. If the costs and the chances of being caught have increased substantially, some corporations may reconsider their actions when operating abroad. However, many international economic enterprises have been put under ethical scrutiny by NGOs in the past. Some examples of MNCs that have been under ethical scrutiny include *"BP, Shell, Enron, Statoil, Ikea, GAP, Nestlé, NIKE and Parmalat*" (Falkenberg, 2004, p. 17) and many more. The consequences of ethical scrutiny may become devastating for those MNCs involved in unethical practices, and it may greatly affect their business practices abroad. These may include *"tarnished reputation, trust erosion, lowered brand equity as well as lowered sales"* (Falkenberg, 2004, p. 21).

MNCs are like any other large international corporations in which seek to maximize their earnings. However, some may deliberately engage in criminal activities, while others may have thought that their activities may have been legitimate as no laws or regulations have been broken. In some cases, this has been used as an argument as various of firms try to defend *"their actions by claiming that they operate well within local laws and regulations"* (Falkenberg, 2004, p. 17). However, laws and regulations are different from a country to another, and, thus, they may not always be ethical. In this regard, Falkenberg (2004) argues that *"one does not have to break a law to be subject to ethical criticism"* (p. 17). Recently, it has become a trend to act accordingly to ethical principles as some corporations may find it beneficial to do so. However, Falkenberg (2004) argues that *"one should act ethically because it is right to do so, not only when it is profitable"* (p. 17).

Although, NGOs have played an important role in governing MNCs that operate in areas where institutions are inadequate, both the NGOs and the media may not always be right about their claims and accusations. According to Falkenberg (2004), *"not all NGO's do their homework properly and make erroneous accusations"* (p. 22). This includes the media as well. In some cases, NGOs and the media are more concerned about generating support and donations from their audiences through their publicities that they may solely focus on what is wrong rather than what may be considered objective and fair. Falkenberg (2004) explains that

"bad news brings vast audiences and there is a tendency to exaggerate the bad news and not give equal coverage to the good news" (p. 22). This may not only be costly for the given MNC, which has come under ethical scrutiny, but the credibility of such actions by the NGOs and the media may be reduced substantially at both presently and in the future. Time and again the NGOs as presented by the media tend to focus on problems and issues that are far away from home. Thus, it becomes difficult for the home audience to evaluate the credibility of the NGOs bring up worldwide issues that do not directly concern their home country (Falkenberg, 2004). Such problems may include species preservation, resource utilization, environmental responsibility or problems related to the local population's well-being where the MNCs operate. Falkenberg (2004) argues that *"these issues are of course important – but it is easier to focus on problems that are far from home instead of focusing on issues like energy consumption or possible over consumption in the western markets"* (p. 22). Another important issue in developed countries that is worth to be mentioned and needs to be addressed is pollution. While some NGOs may in some cases only focus on problems far from home and they could sometimes be unfair to MNCs when not including the MNCs positive practices into account as well, generally NGOs have managed to increase the cost of transgression, which is a remarkable achievement in itself. In recent years, large international economic enterprises are increasingly more concerned about transparency, corporate social responsibility and the environmental implications of their operations in foreign countries (Falkenberg, 2004). Thus, *"[…] NGO's have successfully engaged some MNC's in a different kind of cost/benefit calculus. At the same time, they have raised the general awareness of ethics and morality in their societies, and caused a change in how we feel about certain practices and thus affected a change in convention and local institutions"* (Falkenberg, 2004, p. 22).

8.6 Fisheries Access Agreements: EU and Senegal

The fisheries access agreements between the European Union and numerous of developing countries (e.g. the ACP countries) have in the last decades attracted a great deal of criticism from various of NGOs and the media (Brown, 2005). The Coalition for Fair Fisheries Arrangements (CFFA) was established by the International Collective in Support of Fishworkers (ICSF) and some other European NGOs (e.g. CCFD and Greenpeace) in 1992 in order to protect the Senegalese fishermen from the EU's harmful fishing practices and its government's acts of self-interests by selling fishing rights to foreign countries in exchange for financial compensation (CFFA, 2012). Through the CFFA, the issue of 'fishing access

agreements' between the EU and Senegal as well as other developing countries was brought into light (CFFA, 2012).

According to Brown (2005) and the UNEP (2002), the fishing access agreements between Senegal and the EU were dated back to 1979. In her contribution to the Coalition for Fair Fisheries Arrangements (CFFA), Beatrice Gorez stated that Senegal was *"the first country to have signed a fisheries agreement with the EU in 1979"* (as cited in, Nordberg, 2003, p. 3). The United Nations Convention on the Law of the Sea (UNCLOS) was concluded in 1982, and more than a decade later it became formally known as the International Law of the Sea in 1994 (Hannesson, 2004). Thus, the Law of the Sea did not come into force until many years after the establishment of fishing access agreements between the EU and Senegal. This means that the Exclusive Economic Zones (EEZs) was also not officially introduced as part of the international law. However, Brown (2005) argued that many countries were early adopters of the EEZs. The most of these were coastal states of the European Union.

8.6.1 Maastricht Treaty and the Lomé Convention

The Maastricht Treaty defined the main policy guidelines with regard to how the EU should perform and act in developing countries (Kaczynski & Fluharty, 2002). According to Kaczynski and Fluharty (2002), the guidelines included in this treaty include to aid developing countries *"to reduce poverty and promote sustainable development"* (p. 75). Furthermore, it was stated that *"this commitment is equally valid in such areas as fisheries, trade and agriculture"* (Kaczynski & Fluharty, 2002, p. 75).

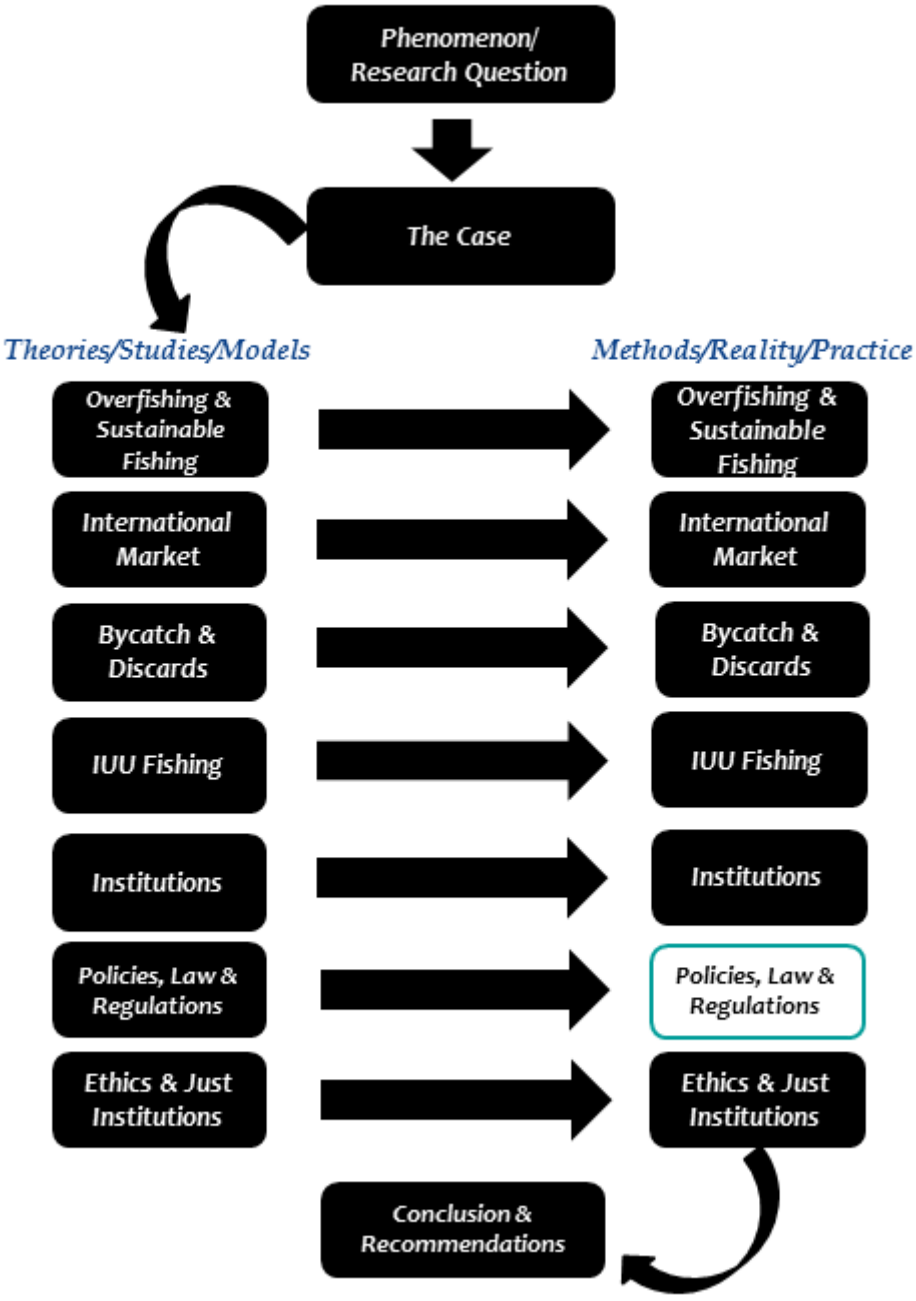
The Lomé Convention played a central role in terms of development in the relationship between the EU and the 71 ACP countries (Kaczynski & Fluharty, 2002). The Convention spanned a period of 10 years, i.e. from 1990 to 1999 (Kaczynski & Fluharty, 2002). Kaczynski and Fluharty (2002) argued that after the Lomé Convention IV had expired in 1999, the fishery relations between the EU and the ACP countries may had been hanging on a balance. This was mainly due to its focus on the development potential in the fishing industry. More specifically, the Lomé Convention recognized how the EU could possibly contribute in the development of the ACP countries' *"capabilities to exploit their own coastal resources"* (Kaczynski & Fluharty, 2002, pp. 75-76). Although, the Lomé Convention supported some of the development aspects in the fishing industry, it seemed that the Convention had disregarded what was considered as one of the most important factors that may have a profound impact on the coastal states' economic growth and poverty reduction (Kaczynski &

Fluharty, 2002). That is the integration aspects of development in the ACP countries. As far as the fisheries were concerned, this included *"requirements to unload of harvested resources and/or investment in coastal states' land infrastructure for purposes of value added processing"* (Kaczynski & Fluharty, 2002). As the fishery relationship between the EU and the ACP countries extends over a longer period of time, the inclusion of the EU by the ACP countries becomes essential fisheries areas such as *"in resource conservation, environmental protection, assistance in creation of local fishing fleets and private sector development"* (Secretariat d'etat a la mer, Direction de peches maritimes etcultures marines. Cout financier pour la C.E.E. des Accords signes avec le pays A.C.P., Paris, August 1992; in Kaczynski & Fluharty, 2002, p. 76). However, Kaczynski and Fluharty (2002) argued that from the point of view of the EU, their participation in other coastal states' affairs may not be desirable. This was due to the fact that *"implementation of such policy changes would result in loss of revenues, higher costs of cooperation, growth of imports, and unemployment in the fishery sector"* (Kaczynski & Fluharty, 2002, p. 76).

According to Kaczynski and Fluharty (2002), the international fisheries cooperation agreements between the EU and the ACP countries were negotiated by the EU Commission's Directorate General for Fisheries (DG XIV). An issue of particular concern with regard to the agreements was that the EU Commission's Directorate General for Fisheries claimed that their agreements with the ACP countries were strictly commercial (Martinez, 1996). This basically means that the EU practically denied having any responsibilities that were related to development or poverty reduction on the developing countries that they cooperated with (Kaczynski & Fluharty, 2002; Martinez, 1996). As previously stated, EU had under the fishery agreements provided financial compensations to the ACP countries' governments on the annual basis in exchange for fishing access (Kaczynski & Fluharty, 2002). However, with purely commercial agreements added into the equation, it may bring difficulties to monitor and control how these funds were utilized in the given developing country (Martinez, 1996). Given that most of these developing countries' governments were indebted and, thus, in dire need for additional financial support, the financial compensation provided by the EU without any form of control would unquestionably be welcomed by these countries' governments (Martinez, 1996). Thus, for them the practice were only beneficial as the financial compensation could be seen as a *"blank cheque to be used at will, not necessarily for the people's benefit"* (Martinez, 1996, p. 43). Without knowing how these funds are utilized, the

chances that they are being used for future development in developing countries' fisheries sector and poverty alleviation are probably slim.

According to Martinez (1996), *"to preserve EU interests, the actual catches of the EU under a given fishing agreement are not made public"* (Martinez, 1996). Thus, without any hard facts and numbers to base on and to compare, no countries may require higher financial compensations from the EU. Furthermore, in addition to the lack of transparency with regard to the actual catches from the EU, Martinez (1996) argued that the agreements which were negotiated by DG XIV had many issues (in which the EU had taken advantages of its weaknesses and altered the terms in their favor). One of these was related to catch quotas. According to Martinez (1996), *"the fishing rights for trawlers are assigned in terms of Gross Registered Tonnage"*, in which would allow *"the fleet to progressively increase its fishing effort by developing technical innovations for any given tonnage"* (p. 43).


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Conclusion & Recommendations

8.7 The UNCLOS and the EU-Senegal Fisheries Access Agreements

Ever since the United Nations Convention on the Law of the Sea (UNCLOS) was concluded in 1982 and formally became international law in 1994, the United Nations have undoubtedly accomplished major achievements in terms of the international political and economic affairs (Hannesson, 2004). Most notably, the UNCLOS established *"an Exclusive Economic Zone (EEZ) of 200 nautical miles"* (Brown, 2005, p. 1), which allows coastal states ownership rights within the EEZ and to regulate, control and manage their fish resources however they see fit (Hannesson, 2004). This means that coastal states may regulate the access of their own EEZ. This could be done by either imposing rights and rules on foreign fishing operators, or limiting the pressure on marine resources in order to implement management and conservation measures (UNEP, 2002). Before the United Nations Convention on the Law of the Sea was adopted in 1982, a number of countries had already extended beyond their territorial waters of 12 nautical miles (UNEP, 2002). This includes Senegal. According to Brown (2005), the establishment of EEZs makes *"95% of the world's fish stocks and 35% of the oceans under the jurisdiction of coastal nations"* (p. 1), i.e. within EEZs. UNEP (2002) claims that 90 % of the marine resources are within EEZs. Thus, the EEZ has without a doubt made significant and major changes to the regulation of the sea in terms *"of the principle of free access to sea resources, since it creates and Exclusive Economic Zone (EEZ) of 200 marine miles (Art. 62), within which coastal states dispose of sovereign rights on sea resources (living or non-living)"* (UNEP, 2002, pp. 21-22).

However, one issue in particular concern with regard to the UNCLOS is Article 62, in which deals with the utilization of living resources within EEZs. Article 62, Section 2 of the UNCLOS is stated as follows: *"The coastal State shall determine its capacity to harvest the living resources of the exclusive economic zone. Where the coastal State does not have the capacity to harvest the entire allowable catch, it shall, through agreements or other arrangements […], give other States access to the surplus of the allowable catch […]"* (United Nations, 1982, Part V: Exclusive Economic Zone; Article 62, Section 2). Thus, it appears that the UNCLOS encourages coastal states, e.g. Senegal, to give the authorization for other states to exploit any surplus that they are unable to utilize themselves (Brown, 2005; Hannesson, 2004; UNEP, 2002). In turn, this may contribute to further overexploitation of fish stocks, and the impact of such actions may affect the fish stock conservation and management greatly. In turn, overexploitation of marine resources may lead to a shortage of food, in which may again threaten food security for coastal states.

The establishment of the EEZ also marked the end of the long distance fishing by, for instance, the United States and the European Union (Brown, 2005; Hannesson, 2004). What have previously been considered an open or free access fishing area is now under the jurisdiction of one or more coastal states. Consequently, those states that have relied heavily on long distance fishing in the past, would now have to depend on fisheries agreement, license arrangements or joint ventures to acquire fishing rights and access to other coastal states' EEZs (Brown, 2005). This is particularly the case when it comes to the European Union and the ACP countries.

The UNEP (2002) suggests that existing regulations must be enforced before one may consider implementing and imposing new regulations and organizational measures. This include, for instance, industrial fishing vessels are too frequently been observed within the six-mile zone, which is reserved for small-scale fishing vessels (UNEP, 2002). Existing regulations need to be enforced in order to stop industrial vessels to sail into the six-mile zone. The UNEP (2002) recommends that *"all the professionals of the sector should be encouraged to reflect upon the reasons for such non-compliance with the laws, and consider ways and means for ending it"* (p. 60). (Check also harmful practices, p. 52)

When new regulations are concerned, the UNEP (2002) suggests that export of all endangered fish species should be banned. If the export of these species is not banned, endangered species should be charged with an additional tax (UNEP, 2002). In this way, the cost of exporting endangered fish species may not be as beneficial, which in turn may reduce the fishing pressure on the concerned species.

8.8 The Complementarity Principle

There are several weaknesses to the complementarity principle. In the case of the EU-Senegal fishing agreements, the UNEP (2002) argues that the development of the EU-Senegal fishing agreements and the development of the Senegalese small-scale fisheries in the 1980s existed simultaneously with one another. In the period of the 1980s, the landings from small-scale fisheries were estimated to be 150,000 tons. In 1990, small-scale fisheries landings increased to 250,000 tons, and the landings increased further to as much as 350,000 tons in 2002 (UNEP, 2002). According to the UNEP (2002), *"as regards coastal, demersal and pelagic resources, national fishing ships seem not only capable of exploiting almost all of the stocks but also exploiting them fully"* (p. 23). This is with the exception of pelagic resources, since it is not fully exploited by small-scale fisheries. UNEP (2002) argues that the productivity or

capacity problems are not the reasons why small-scale fisheries in Senegal have not fully exploited pelagic resources. The actual problems are rather with high capital costs and the attractiveness of export species with higher commercial value (UNEP, 2002).

If the complementarity principle is fully operational, UNEP (2002) argues that the EU-Senegal fishing agreements should actually be based on scientific evaluation and data. However, in reality this is not the case. First of all, researchers' scientific data have seldom been taken into consideration by the important actors. Furthermore, UNEP (2002) argues that the data collected in order to conduct an evaluation may not be correct or accurate. Fishing agreements may have been established, despite the fact that one or more fish stock may have been already fully exploited by the coastal country (UNEP, 2002). Surprisingly, if the conditions for a theoretically complementarity between national and foreign fishing concerns are met, UNEP (2002) claims that it does not necessarily mean that there are no longer practical problems. According to UNEP (2002), *"if foreign fishing is normally allocated according to what remains beyond national fishing capacity, both of them will be competing in the same fishing zones"* (p. 23). This means that competition between national and foreign fishing fleets both large-scale and small-scale is inevitable, i.e. given that a fishing access agreement between two states exists.

UNEP (2002) suggests that there are all in all two types of competition that may take place under such circumstances; 1) competition between national and foreign industrial fishing fleets, and; 2) competition between national and foreign small-scale and industrial fishing fleets. The latter especially raises serious concerns since there is a conflict at sea between two types of fishing activities; industrial large-scale and traditional small-scale fishing. UNEP (2002) claims that the conflicts between these two fishing activities *"have tended to worsen since small-scale fishing has been in the position to compete off-sea with industrial fishing boats"* (p. 23).

The consequences of these encounters are always uncertain and sometimes dangerous. The depletion of coastal demersal fish stocks and destruction of fishing gear is some of the outcome of such encounters (UNEP, 2002). More importantly, these kinds of conflicts may sometimes result in collisions between industrial and traditional fishing vessels, which may in turn be the cause of human casualties (UNEP, 2002). Several NGOs and the media often tend to draw attention to encounters which results in collisions between the EU industrial fishing trawlers and the Senegalese small-scale fishing vessels. However, the UNEP (2002) claims

that foreign fishing vessels are only responsible for a few of these collisions in which take place in the reserved fishing zone. Thus, most of the collisions are, in fact, between national industrial and traditional fishing vessels, and not between foreign industrial and national traditional fishing vessels as many NGOs claim (UNEP, 2002). This brings back to the point where the Senegalese development of small-scale fisheries was progressing simultaneously with the development of the EU-Senegal fishing agreements. Since the development of small-scale fisheries in Senegal is on a relatively high level, it may compete directly with both national and foreign industrial fishing vessels in which may be the cause of conflicts at sea (UNEP, 2002). Thus, the faster the small-scale fisheries are developing in this period; the higher are the risks of conflicts involved with industrial fishing activities, i.e. both national and foreign. Therefore, the UNEP (2002) suggests that extending the limits of the reserved zones should perhaps be considered.

According to the UNEP (2002), there are at least three reasons for why e.g. the United Nations Convention on the Law of the Sea (UNCLOS), Agreement on Straddling and Migrant Stocks, and the Code of Conduct for Responsible Fisheries (CCRF) stress the importance of protecting small-scale fisheries when it comes to preservation of marine resources. These three reasons to protect small-scale fisheries are as follows;

1) *It plays a more important role in the supply of low-cost animal proteins than industrial fishing which is more concerned about commercial profits;*
2) *Its practices are also perceived as being more sustainable than those of industrial fishing (type of fishing gear and variety of catch, which are minimally disposed of in the local market, whereas industrial fishing is generally mono-specific and increases the risks of rejections);*
3) *Small-scale fishing is further integrated in the local economic fabric and provides employment and revenue to many people.*

(Source: UNEP (2002), *"Integrated Assessment of Trade Liberalisation and Trade-related politics: a country study on the fisheries sector in Senegal",* New York and Geneva, United Nations Publication, pp. 24)

It is here important to emphasize that the Senegalese small-scale fisheries have these characteristics as listed above. Due to its level of development, the Senegalese small-scale fisheries compete directly with industrial fishing activities, i.e. both foreign and national. This concern was brought into light once more when Senegal signed a new fisheries access agreement with the EU in 2002.

In many cases, it has been argued that small-scale fisheries may be relatively more sustainable than large-scale fisheries. This could partly be explained through the diversity of gear that is used to catch fish in small-scale fisheries. The fishing gears are mostly dependent on the season and the target species. Thus, not only may the gear that is used in small-scale fisheries generate less bycatch, but more importantly it may consume less energy as well. This means that the energy consumption (input) per unit of fish caught (output) is relatively less than what is consumed in the activities and operations in large-scale fisheries (Thomson, 1980; Kurien, 2008; ICSF, 1984; Jacquet and Pauly, 2008, in Sharma, 2008). For instance, the small-scale fisheries *"employ more people per unit of fish output"* (Sharma, 2008, p. 8), but there are less negative impact on the environment and the fish stocks. This means that small-scale fisheries are more environmental friendly than industrial large-scale fisheries. Thus, small-scale fisheries are more sustainable than large-scale fisheries. Sharma (2008) agrees with this view and claims that *"even though the sector is rapidly changing today, and is relatively more technology and capital-intensive, small-scale fisheries does still provide the model on which to sustain fisheries and fishery dependent livelihoods into the future"* (p. 2).

According to Sharma (2008), there are, however, *"several cases where the States have taken steps to protect access rights of small-scale fisheries, most importantly perhaps through the introduction of exclusive artisanal fishing zones"* (p. 7). The exclusive artisanal fishing zones are often being introduced and established by the States due to the high demand and pressure from the small-scale fishworkers' and the fishing community as a whole (Vera et al.,2007; ICSF, 2004; Mathew, 1990; Mathew, 2007; O'Riordan, 2004 in Sharma, 2008). However, Sharma (2008) argues that although these activities are unquestionably important to secure the access rights to the small-scale fishworkers and the community, these exclusive artisanal fishing zones are difficult to enforce and thus remains a phenomenal challenge and problem for the community as a whole. On the other hand, the same problem could also be said about the original economic exclusive zone (EEZ) established by the UNCLOS. Most developing countries may have a hard time to invest in surveillance, control and management of their resources due to the lack of capital.

When it comes to the area of fisheries management, the objectives are to protect the marine resources and at the same time sustain the livelihoods of the fishing communities. Therefore, it may be essential to direct the attention towards fisheries management and adopt the necessary methods in order to achieve well-managed fisheries. If these fisheries are being successfully well-managed, they may in turn *"contribute to securing economic and social*

rights of fishing communities, provided they are inclusive regimes that foster equity and community wellbeing, and provided they recognize certain attributes of small-scale fisheries as desirable for better fisheries management" (Sharma, 2008, p. 8). The latter includes attributes related to the fishing gears and practices that are used in small-scale fisheries. This is in the assumption that the fishing gears used in small-scale and artisanal fishing are more environmental friendly as the usage of fishing gears depends on the target species and the season (Sharma, 2008). Thus, practices in small-scale fisheries may presumably involve fishing smaller quantities than industrial large-scale fishing practices, and therefore may also involve less negative impact on the given target species, non-target species, the ecosystem, the seabed, the fishery resources as well as the environment in general (Sharma, 2008). However, in the case of the EU and Senegal, the small-scale fisheries in the West-African countries may have a much greater fishing activity than EU's industrial trawlers. This is of course in the assumption that the figures provided by the EU itself are indeed correct. One may argue that small-scale fisheries may not always necessarily promote environmental friendly practices. This is under the assumption that there are excessive small-scale fishing fleets, which may lead to overcapacity.

There are some countries that make the effort to seek to protect their fishing resources and the interests of their own local small-scale fisheries through fisheries legislation, e.g. this may involve introducing exclusive artisanal fishing zones, while there are some that seeks to completely ban harmful fishing techniques and practices. In order to protect the resources and sustain livelihoods, Sharma (2008) seems to support the latter method and suggests that *"regulation and prohibition of destructive fishing gear and practices like non-selective bottom trawling and dynamite fishing can also help secure economic and social rights of small-scale fishing communities"* (p. 8). There are many examples where harmful fishing practices are prohibited. One example is provided by ICSF (2008) where bottom trawling was banned in Venezuela in 2008. Previously, the law in Venezuela prohibited trawl-fishing that was six miles, i.e. 10 km, from the mainland (ICSF, 2008). However, a recent law modification made by its government has resulted in a complete ban of trawl-fishing activities in all of the Venezuelan waters (ICSF, 2008). Another example provided by Mathew (1990) showed that Indonesia had also banned trawling in certain areas of their fishing grounds in 1980. The objectives of the trawl-ban was *"1) to facilitate better resource management; 2) to ensure the development of the traditional sector; and 3) to prevent open conflicts"* (Mathew, 1990, p. 21). The latter listed point was due to the violent conflicts between industrial trawlers

and traditional fishermen in which resulted in *"destruction of fishing unit and loss of life in the 1970's"* (Mathew, 1990, p. 9).

Malaysia is another country that has also experienced conflicts between trawlers and fishermen (ICSF, 2007). However, in order to combat these violent conflicts, Malaysia adopted a zoning system, which was a concept borrowed by the Japanese (ICSF, 2007). The zoning system is based on a simple concept where the fishing ground is divided into four different zones. In each zone, the type of vessels that are allowed to fish in that given zone is specified (ICSF, 2007). Therefore, the fishing activities of large vessels are restricted to the fishing zones which are furthest away from the coast, whereas small fishing vessels are assigned to zones that are closer to the coast. However, they are allowed to fish freely in the other zones as well (ICSF, 2007). Of course, smaller vessels are also restricted in terms of their travel distance from the coastline due to their size. According to ICSF (2007), the system seems to turn out to be very effective thus far and may have contributed to reduce conflicts between large and small fishing vessels. Thus, such extreme fisheries management measures may contribute to protect a given country's seabed and ecosystem. Moreover, it may also aid artisanal fishworkers in achieving more rights to their own fishing grounds. However, Sharma (2008) claims that the implementation of fisheries management policies and programs remains a problem in most cases.

According to Sharma (2008), *"activities and management measures that diminish the economic and social rights of fishers should not be considered"* (p. 9). This means that conservation of marine resources by, for instance, establishing marine protected areas should not in any way disrupt or deny small-scale fishers access to their fishing grounds (Sharma, 2008). This includes aquaculture. If the fishing access and rights of small-scale fishers happened to be unjustly and unduly denied, then one may have to seek for another set of solutions. Such management measures may cause *"negative impacts on capture-fisheries-based livelihoods; on the quality of life of coastal communities; and on indigenous species"* (Sharma, 2008, p. 9). Furthermore, inland waters as well as waters at the coastline should not be privatized and should be avoided at all costs (Sharma, 2008, p. 9). This may be consistent with FAO's Code of Conduct for Responsible Fisheries (CCRF) Article 7.6.6 and Article 9.1.4 (Sharma, 2008). According to Article 7.6.6 of the CCRF titled 'Fisheries management', the given State concerned should take into consideration of the needs and interests of indigenous people and the local fishing communities when determine the usage, conservation and management of fisheries resources. This is because indigenous people and the fishing

communities are *"highly dependent on fishery resources for their livelihood"* (FAO, 2011a, p. 33). The consequences could be devastating for a great number of people if the given State does not recognize the role of coastal communities. In Article 9.1.4 in the CCRF FAO takes into account responsible development for aquaculture. In accordance to this article, it asks States to *"ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected by aquaculture developments"* (FAO, 2011a, p. 53).

8.9 Working Conditions

The working conditions in the fisheries sectors are in general often poor. It is an occupation which is known to be dangerous and the rates of accidents seem to be high (Sharma, 2008). According to Sharma (2008), hazardous working conditions in the fisheries sector could be found *"in fisheries-related activities, such as in processing fish, baiting hooks, and selling fish, are also known to be poor"* (p. 11). Environmental uncertainties may also play a major role in safety issues in the fishing communities as fishers and fishworkers may seem to be highly exposed to natural disasters (Sharma, 2008). This may include typhoons, tsunamis, cyclones etc. Despite all the risks that are taken by fishers and fishworkers, the fisheries sector is, according to Sharma (2008), lagging *"behind many others in putting in place legal provisions ensuring better working and living conditions, and access to adequate social security"* (p. 11). Sharma (2008) suggests that it is important to aim the focus towards *"implementation of the provisions of several international instruments, that recognize rights to better and safe conditions of work, social security etc."* (p. 11). Thus, one may want to look into some of the International Labour Organization (ILO) Conventions in order to better the working conditions in the fisheries sector. Sharma (2008) suggests that *"the provisions of the 2007 ILO Work in Fishing Convention are implemented in order to secure the rights of fishers to decent work"* (pp. 11-12). According to Article 9 of the International Covenant on Economic, Social and Cultural Rights (CESCR), "the States Parties to the present Covenant recognize the right of everyone to social security, including social insurance". In this respect, Sharma (2008) suggests that caution is needed when it comes to the case of the fisheries sector as a great number of people are self-employed. Thus, the systems of social security should not only include those on the organized sector but also for those who are self-employed (Sharma, 2008).

When it comes to rights to basic services and a decent quality of life, there is a lack of access to basic services, such as access to a proper education and health services, in the fishing communities (Sharma, 2008). This is especially the case when it comes to those communities

located in urban slums and remote areas. Thus, it becomes a challenge to ensure a decent quality of life for those living in these fishing communities (Sharma, 2008). Furthermore, the livelihoods options of these people may be limited. Sharma (2008) argues that artisanal fishing families in some developing countries seem to be *"among the most socially, economically and politically disadvantaged segments of the population"* (p. 13). In 2002, FAO (2002b) estimates that the number of income-poor fishers is as high as 5.8 million. This number represents 20 percent of the total number fishers in the world, which is estimated to be around 29 million people (FAO, 2002b). Income-poor fishers are, according to FAO (2002b), small-scale fishers who may earn less than US$1 a day. Moreover, there are about 17.3 million income-poor people in related upstream and downstream jobs and activities in the fisheries sector (FAO, 2002b). These types of jobs include e.g. marketing, processing, boatbuilding. Hence, the combined total number of income-poor people is estimated to be as many as 23 million, excluding their respective households in which may be highly dependent on small-scale fisheries (FAO, 2002b).

In order to secure basic social and economic rights for the fishing communities, Sharma (2008) suggests that States should systematically follow the eight internationally agreed goals that are set by the United Nation's Millennium Development Goals (MDGs). These eight goals include; *"reducing poverty, eliminating gender disparity in primary and secondary education, reducing the maternal mortality ratio and halving the proportion of people without sustainable access to safe drinking water and basic sanitation"* (Sharma, 2008).

According to Thorpe (2005), *"the formulation of Poverty Reduction Strategy Papers (PRSPs) is one of the main conditions for concessional lending by the International Monetary Fund (IMF) and the World Bank to developing countries"* (p. iv). There are in some cases where the fisheries sector is neglected in the PRSPs, even though it has been proven that the fisheries sector may potentially contribute to achieve food security as well as improving livelihoods in many developing countries (Thorpe, 2005). In a review of the PRSP of African countries, it is stated that there were six countries in which offered a fairly good report in their PRSPs (Thorpe, 2005). These countries include Benin, Ivory Coast, Madagascar, Mali, Mauritania and Mozambique. While there were about five African countries which gave an extensive coverage to the fisheries sector in their PRSPs (Thorpe, 2005). These countries are Cameroon, Ghana, Guinea, Malawi and Senegal. Thus, these countries have made an effort to effectively integrate the fisheries sector into implementing poverty reduction strategies (Sharma, 2008).

It is important that all men and women have the rights to participate in decision-making and fisheries management. This is because these decisions may affect these peoples' lives and livelihoods and these decisions may as well contribute to secure their rights, i.e. their social, economic and cultural rights (Sharma, 2008). Thus, the necessity of the local fishing communities' participation is essential. This is particularly the case when it comes to fisheries management. According to Sharma (2008), there are in some cases where *"several countries are, of late, fostering processes related to decentralization, devolution, co-management and community-based management"* (p. 14). In order to acquire the rights to participate in decision-making and fisheries management, Sharma (2008) suggests first of all that the role of the fishing communities in co-managing fisheries resources needs to be enhanced. To do this, the national and provincial governments' accountability to fishing communities should be increase. Furthermore, Sharma (2008) suggests that the governments should *"devolve power to fishing communities, make efforts to enhance the capacity of communities in fisheries management, and enhance their negotiating power"* (p. 14). More importantly the States should provide financial support to the *"fishworker organizations, community-based, non-governmental organizations and research institutions to implement programmes to promote fishing communities awareness of rights and to strengthen their capacity to lobby and advocate for their rights"* (Sharma, 2008, p. 14).

According Article 6.13 of the CCRF, *"States should, to extent permitted by national laws and regulations, ensure that decision-making processes are transparent […]"* (FAO, 2002b, p. 19). Furthermore, it asks States to *"facilitate consultation and the effective participation of industry, fishworkers, environmental and other interested organizations in decision-making with respect to the development of laws and policies related to fisheries management, development, international lending and aid"* (FAO, 2002b, p. 19). Article 6.16 highlights the importance of fishers' and fish farmers' involvement in the formulation of policy and the implementation process. Some of the principles of the Rio Declaration may have recognized that the local communities' rights to participate in decision-making processes. According to Principle 10 of the Rio Declaration on Environment and Development (1992), *"environmental issues are best handled with the participation of all concerned citizens"* (UN, 1992, p. 3). Furthermore, Principle 10 asks States to *"facilitate and encourage public awareness and participation by making information widely available"* (UN, 1992, p. 3). Thus, Principle 10 of the Rio Declaration encourages States to give the communities access to the information related to environmental issues that is held by the States themselves, and it

encourages them to give the communities an opportunity to participate in the decision-making process.

8.10 The Common Fisheries Policy (CFP)

The European Union has for the past few years been accused to deliberately overfish West African coastal waters for their own benefit, leaving these countries worse off. The West African countries are now facing a situation where the local fisheries are at the risk of collapse, which have forced its people to immigrate illegally to Europe through the Canary Islands in Spain. In their voyage to Europe, the unforgiving sea has taken countless of lives and those who were lucky enough to get to land would most likely be arrested, deported and fined.

In response to the critics and accusations, the European Union enforced a reform of the Common Fisheries Policy (CFP) in 2002. The changes in the CFP were made to address issues of overfishing. These include long-term objectives such as fisheries management, environmental protection, plans to replenish and manage fish stocks, limiting fishing efforts, and developing new bilateral fisheries agreement, i.e. including the ACP countries (European Commission, 2009a). Overall key objective of the CFP was *"to ensure sustainable exploitation of living aquatic resources in all three dimensions – environmental, economic and social"* (European Commission, 2011a, p. 5). However, the Green Paper from the European Commission explicitly stated that the CFP had failed to meet the main objectives that were developed in the reform in 2002 (European Commission, 2009a, 2011a).

According the impact assessment from the European Commission (2011a), there are some difficulties in recognizing the actual problems and drivers behind the failure of the CFP due to the complexities. An explanation is provided by the European Commission (2011a) below.

"[…] overcapacity is the main driver for overfishing. However, overfishing is also a driver for overcapacity, as the reduction of quotas intended to curb it, further increases overcapacity. Similarly, overcapacity implies also poor economic performance of the catching sector. But that poor economic performance in turn, fosters overfishing as a short term fix for diminishing revenues. The poor economic performance also results in the continuous industry call for public financial support, which maintains overcapacity. The poor economic (and social) performance also fosters overfishing indirectly because it encourages Council's deviation from TACs proposed by scientists."

(Source: European Commission, 2011a, Impact Assessment Accompanying Commission proposal for a Regulation of the European Parliament and of the Council on the Common Fisheries Policy [repealing Regulation (EC) N° 2371/2002] (pp. 1-84). SEC(2011) 891. Brussels, 13.07.11, p. 5)

Despite the complexities in identifying the problems and drivers of the CFP, the European Commission has attempted to map out the causes for why CFP failed. These include the lack of environmental, economic and social sustainability, and these problems are closely related to one another (European Commission, 2011a). All of the problems mentioned by the European Commission could be either directly or indirectly related to overfishing, for the reasons described above by the European Commission (European Commission, 2011a).

8.10.1 Lack of environmental sustainability

According to the impact assessment conducted by the European Commission (2011a), the lack of environmental sustainability was due to the drivers of overfishing. These include discards, overcapacity, compliance issues, inadequate scientific advices, failure in completing objectives, and micromanagement (European Commission, 2011a).

Discarding practices in community waters are, according to the European Commission (2011a), not illegal. The amount of discarded fish annually in European fisheries are estimated to be 1.7 million tons, i.e. 23% of total catches (European Commission, 2011a, p. 11). The impact of discards is severe for both targeted and non-targeted species. Furthermore, the Total Allowable Catches (TAC) is only based on the landings, not the actual catches. This means that all discarded fish are not in any ways taken into consideration by the TAC system (European Commission, 2011a). Thus, as a conservation tool, the TAC system may not adequately portray the complete picture of the actual fishing pressure within community waters. This means that the fishing pressure could be much higher than what has been indicated by the landed catch (European Commission, 2011a, p. 11). Thus, the credibility of the TAC system is significantly reduced as discarded fish is not included. As a consequence, the scientists will lack the required data in order to give adequate scientific advices (European Commission, 2011a).

Another problem that undermines the environmental sustainability is overcapacity, which is one of the main drivers of overfishing. Overcapacity means that there is an excessive number of fishing vessels that target the available fish species in the community waters (European Commission, 2011a). In addition, it could also mean that *"there are too many vessels for the available fishing rights*" (European Commission, 2011a, p. 8). According to the European Commission (2011a), there has been a significant reduction as regards to the number of

vessels in the community waters in the period between 1992 and 2009; 105,000 to 80,000 fishing vessels in EU waters (p. 9). This could be explained by the limited fishing opportunities, high environmental protection efforts and high fuel prices, in which *"encouraging consolidation and reinvestment in fewer larger vessels and towards more selective and fuel efficient fishing […]"* (European Commission, 2011a, p. 9). However, scientific studies recommend that for most of the fish stocks it is required that at least 40 % of the fishing mortality should be reduced (Gulland 1990, Lassen 1996, in European Commission, 2011a, p. 10). According to the European Commission (2011a), programs to combat overcapacity has shown to be ineffective as overcapacity exists in the different fleets in the Member States; *"9% overcapacity for Portugal, 23% for Spain and 50% for the Swedish demersal cod fleet"* (p. 10).

According to the European Commission (2011a), there are two problems that may reduce the efficiency of the current CFP. Firstly, the complexity in the framework of the policy makes it difficult to enforce (European Commission, 2011a). In addition, the decision-making process is characterized by a top-down structure, where the Council of Ministers is the decision makers (European Commission, 2011a). In turn, the complex framework of the CFP does not correspond to the actual implementation of the policy (European Commission, 2011a). This leads to micromanagement of fisheries activities. Secondly, the CFP does not have a clear set of objectives that needs to be met in order to promote long-term environmental sustainability (European Commission, 2011a). In turn, the main objectives are overlooked and the attention is instead shifted towards short-term economic and social achievements.

When it comes to the difference between TACs and sustainable catches, the Council's decisions of TACs tend to deviate from the scientific advices and recommendations (European Commission, 2011a). In the period between 2003 and 2010, the decided TAC was on average 47% above the level of sustainable catch that was recommended by scientists (European Commission, 2010). In 2005, the TACs were set 59% above the recommended level, which was the highest deviation in the period of 2003-2010 (European Commission, 2010). Five years later, the deviation of TAC from scientific advices in 2010 had been reduced to 34%, which was the lowest recorded deviation in the period between 2003 and 2010 (European Commission, 2010, 2011a). However, the TACs that are set by the Council are still too high as opposed to the recommendations given by scientists.

Numerous of fish stocks in the community waters are endangered or in the verge of extinction due to years of overfishing. In this case, the scientific advice given to the decision-makers is to stop fishing these stocks. However, the number of fish stocks that was allowed to catch by the Council, but should not be caught according to scientific advices were on the average of 17 fish stocks in the period between 2003 to 2010 (European Commission, 2010). The highest number recorded was in 2004, where 24 of the endangered fish stocks were exploited. Even though, this number has recently been reduced to 14 fish stocks in 2010, it is still considered very high compared to what has been recommended by scientists (European Commission, 2010, 2011a).

8.10.2 Lack of economic sustainability

According to the impact assessment from European Commission (2011a), the European Union *"is the fourth main world producer of fisheries and aquaculture products behind China, India and Peru, with 4.6% of the world catches and aquaculture in 2007"* (p. 14). In 2005, the total production of marine capture fisheries and aquaculture was estimated to be over 6.6 million tons. In 2007, the total production decreased to 6.4 million tons, i.e. a reduction of approximately 3% compared to the estimates from 2005 (European Commission, 2011a).

In the European Union, five of the member states that contribute the most to the total production in an arranged order of contribution, are Spain, France, the United Kingdom, Denmark and Italy. According to the estimates provided, the total production in Spain accounted for 16% of the total production of all member states in the EU in 2007 (European Commission, 2011a). In comparison to the other member states, Spain had the highest production both in marine capture fisheries and aquaculture in 2007, with 735 926 tons and 284 982 tons respectively. Furthermore, the total production in France accounted for 12% of the total production in the EU fisheries sector in 2007, UK 12%, Denmark 11% and Italy 7% (European Commission, 2011a).

In the European Union fisheries sector, aquaculture accounts for 20% of the total production, while the marine capture fisheries account for 80% (European Commission, 2011a). The total production from capture fisheries had decreased from 5.5 million tons in 2005 to 5.1 million tons in 2007. On the other hand, the total production from aquaculture had increased from 1.2 million tons in 2005 to 1.3 million tons in 2007 (European Commission, 2011a). Although, 80% of the total production of fish and fishery products come from capture fisheries, the

performance from aquaculture is in general better (European Commission, 2011a). However, while the global production of fish and fishery products that come from aquaculture have increased over the past four decades (Huang, et al., 2007), the production from aquaculture in the EU had in general stagnated in the past 15 years (European Commission, 2011a). The problems related to the stagnation are often times not within the objectives and framework of the CFP (European Commission, 2011a). These include *"limited space available for further development, efforts necessary to meet the requirements of EU environmental and sanitary legislation, and low levels of innovation necessary to compete on a global market"* (European Commission, 2011a, p. 16).

According to the European Commission (2011a), the processing industry generates the highest overall value, in which accounts for nearly €25 billion (European Commission, 2009b). The leading production countries are Spain, France, the United Kingdom and Italy (European Commission, 2009b). With regard to the performance of the different sectors, the catching sector does not perform as well as the processing sector (European Commission, 2011a). Thus, the most important economic activity in the EU is the processing sector (European Commission, 2011a, p. 16).

However, according to the European Commission (European Commission, 2011a), the *"EU's internal production covers slightly less than 40% of the demand (68% in 1995)"* (p. 15). In 2007, the total internal production in the EU was 6.4 million tons. About 2 million tons of the total production were exported whereas the imports in the EU accounted for around 9 million tons (European Commission, 2011a). Hence, the supply of products for food consumption from the EU accounted for nearly 13 million tons, i.e. excluding the non-food use (European Commission, 2011a). Thus, the EU has to increase their imports in order to fill out the gap between the demand and supply (European Commission, 2011a). In turn, the EU becomes highly dependent on external supply, and the countries that export fish and fishery products to the member states are most likely increasing their fishing efforts. Within the EU, the competition between internal fish producing countries and external fish exporting countries is expected to intensify, which will gradually increase over the years as long as the EU is dependent on external fish supplies (European Commission, 2011a).

The consumption level in the EU had increased over the years, especially in the Eastern and Central regions of Europe (European Commission, 2011a). According to the impact assessment from the European Commission (2011a), the *"EU demand has been growing in*

the last decade" (p. 14). The average per capita consumption in the EU is estimated to be 22.3kg (European Commission, 2011a), whereas the world per capita consumption is 17.8kg in 2011 (FAO, 2011b). Thus, the average per capita consumption in the EU is considerably higher than that of the world. However, the per capita consumption differs from a member state to a member state. For instance, the per capita consumption in Bulgaria was estimated to be 4.2kg, while it is considerable higher in Portugal where the per capita consumption is 55.6kg (European Commission, 2011a, p. 15). The future demand for fish and fishery products is not expected stop anytime soon. This in part due to the fact that fish consumption is associated with beneficial health effects (European Commission, 2011a).

8.10.3 Lack of social sustainability

The EU's total employment in the fisheries sector including all of its three sub-sectors, i.e. capture fisheries, fish processing and aquaculture, was around 421.000 persons in 2002 and 2003 (Salz, Buisman, Smit, & Vos, 2006). In 2005, the total employment in the fisheries sector was about 407,000 people (European Commission, 2011a). In 2007, the total employment in the fisheries sector was 354,715 (European Commission, 2011a). From the estimated total employment in 2005, 187,000 of these people were employed in the capture fisheries, 138,000 people in fish processing and 63,000 people in aquaculture (European Commission, 2011a). In terms of percentage, the employment in capture fisheries accounted for 46% of the total employment in the EU's fisheries sector, and fish processing and aquaculture accounted for 34% and 16% respectively (European Commission, 2011a). Hence, the majority of people in the fisheries sector are employed in the capture fisheries. According to Salz et al. (2006), employment in the catching sector is dominated by Spain, Greece and Italy in 2002 and 2003. These three member states accounted for around 60% of the EU total employment in the catching sector, while the employment estimated in France and Portugal accounted for 10% each (Salz, et al., 2006, p. 15). As regards processing sector, the member states that had the highest employment are Spain, France and the United Kingdom (Salz, et al., 2006). Moreover, the majority of people employed in aquaculture were both in Spain and France (Salz, et al., 2006).

According to Salz et al. (2006), employment in the catching sector has since 1996 and 1997 decreased by approximately 4-5% each year (p. 15). In the period between 2002-2007, the catching sector had its employment decreased by 31%, aquaculture by 16%, and the processing sector by 6.5% (European Commission, 2011a, pp. 18-19). Hence, the employment in the catching sector had the highest decline as opposed to the two other sectors.

The reasons for why the catching sector had this considerable decrease in employment include low wages, technical development, employment of non-EU crew, fleet reduction and hazardous working conditions (European Commission, 2011a, p. 19).

Since the failure of the CFP, the EU has shifted their attention away from the core principles of the CFP, and the level of dependency towards external fish supplies gradually increases (Béatrice. Gorez & O'Riordan, 2003). Gorez and O'Riordan (2003) argue that the failures of the CFP to monitor and control the balance between fishing efforts and the sustainable use of the resources, was one of the many causes that made the EU dependent on external fish supplies, which had contributed to add fishing pressures to other coastal waters in the world, especially the third world countries. The aim of fishing outside of EU waters was to *"meet both its market (processing and consumption) and fishing sector (employment and investment) demands"*(Béatrice. Gorez & O'Riordan, 2003, p. 4). This had contributed to increased fishing pressure especially in ACP (African, Caribbean and Pacific) countries as the EU had acquired access to these countries' fishery resources through fishing agreements. Thus, Gorez and O'Riordan (2003) expressed their concern when they stated that *"the fishery situation in the EU today (over-capacity, depleted resources, supply deficit, etc.) is both potentially promising and perilous for ACP states"*(p. 4).

8.11 The Fisheries Partnership Agreement

8.11.1 The European Union

According to O'Riordan (1999), in the EU *"some 1,300 vessels and 20,000 jobs in fishing directly depend on fisheries agreements with third countries. Fisheries agreements possibly also provide as many as 50,000 – 10,000 jobs in such ancillary industries as ship building, fish processing, transport, marketing, etc."* (p. 4). Thus, Brown (2005) argues that the EU has had a long history with regard to fishing, and their demand for fish and fish products is exceptionally strong. As a matter of fact, the EU is one of the world's largest markets for fish and fish products in the world (Brown, 2005). However, the fishes and fish products are not from their own coastal waters but their home market is mainly being supplied from third countries and international waters (Brown, 2005), i.e. in fishing grounds not considered as an EEZ. In 2002, 20 countries had signed fisheries access agreements with the EU where the majority of these are from Africa (Sporrong, Coffey, & Bevins, 2002a).

The fish and fish products provided from these co-called access agreements accounts for approximately a quarter (or 20 to 25 per cent) of the fish consumed in the EU in 1999

(O'Riordan, 1999). According to O'Riordan (1999), the estimate of self-sufficiency in the EU's own Community waters in 1984 was 84 per cent, while in 1994 their self-sufficiency was reduced to 58 per cent. Thus, their self-sufficiency is falling intensely overall. Moreover, the EU's supplies deficit was *"estimated to be growing at an annual rate of 15 to 25 per cent"* (O'Riordan, 1999, p. 4). It is further argued that the EU had to import around 35 to 40 per cent of its fish supplies due to the high demand for fish and fish products and the failure of self-sufficiency from their own coastal waters (O'Riordan, 1999).

8.11.1.1 Over-capacity in EU Fishing Fleets

Between the 1960s and the 1990s, the pressure on the West African fish stocks had in fact increased six-fold (Hogan, 2003). The main contributors to the increase in fishing pressure in the West African region are the EU, the Russian and the Asian fleets (Hogan, 2003).

Since the end of the 1970s, many EU member states had been struggling to address the problems of over-capacity in their fishing fleets (UNEP, 2002). In order to deal with over-capacity in the EU fishing fleet and overfishing of fish stocks with commercial value in its own waters, the EU has been using the fisheries agreements to transfer their problems by redeploying their fishing fleets to third countries' waters, in which had agreed to grant them fishing access in exchange for cash (O'Riordan, 1999; UNEP, 2002). Thus, fishing agreements seem to work in favor of distant waters fishing nations, e.g. the EU, rather than coastal states, e.g. the ACP countries. In this regard, O'Riordan (1999) emphasizes the issue of over-capacity of the EU fishing fleets, which may be the cause of overfishing of commercial fish stocks in EU waters. In 1999, the fish stocks which are considered over-exploited in EU waters accounted for 55 % (O'Riordan, 1999). Additionally, the percentage of seriously over-exploited fish stocks accounted for 42 %, while depleted or collapsed fish stocks represented 7 % of the total fish stocks in EU waters (O'Riordan, 1999). Thus, the EU fishing fleets are highly pressured to find other sources fish. The immediate solution is to negotiate fishing access agreements with third countries, which in turn will make them greatly dependent on third countries' marine resources.

8.11.2 Senegal

Over the past decades, Senegal has not only signed bilateral agreements with the EU. According to UNEP (2002), bilateral fishing agreements had for instance been signed between Senegal and its neighbor countries as well, such as Cape Verde, Gambia Guinea Bissau and Mauritania. Normally, these fishing agreements are based on the principle of

reciprocity, which grants both concerned states reciprocal fishing rights (Samb, 1999; Kebe and Deme, 1991, in UNEP, 2002). However, the fishing agreement between powerful fishing nations and developing countries may be different. These agreements are seldom based on the reciprocity principle, but they tend to rather *"focus on issuing licences or fishing rights in exchange for financial contribution"* (UNEP, 2002, p. 22). Furthermore, Senegal had also signed fishing agreements with Japan, which authorized the Japanese fishing fleets, under certain conditions, to fish in its waters (UNEP, 2002). All of these agreements may have potentially contributed to the decline of the overall fish stock in the West African coastal waters. However, according to UNEP (2002), *"it is the agreements signed with the EU that attracts most of the attention in view of the various factors at stake: the targeted species, the size of the flotillas and the financial stakes"* (p. 21).

Criticisms against powerful fishing nations, such as the EU, are often directed towards the fisheries access agreements with third countries, which may have contributed to slowing down the development of the coastal sate, competing with small-scale fishing as well as ignoring the state of targeted fish stocks and encouraging overfishing (UNEP, 2002). In their examination of the fishery agreement between the EU and the West African coastal countries, Kaczynski and Fluharty (2002) argued that the European Union fishery policy in West Africa could be best explained through its fishery agreements with Senegal (p. 82). Hogan (2003) claims that the case of West Africa is an exceptionally good example of how foreign fleets strip away fish stocks from third-countries. Most of the criticisms and accusations against the fisheries access agreements between the EU and developing countries are directed towards some of these different points.

Criticisms towards the EU Fishing Agreement

1) *The 'export' of EU fishing fleets to areas with already scarce resources;*
2) *The limited capacity of signatory states to monitor or control the activities of the EU fishing fleets;*
3) *The lack of transparency in the negotiation of agreements and a lack of communication and coordination between the Directorate General for Development and the DG for Fisheries during negotiations which has led to institutional disagreements within the EU;*
4) *Fishing methods that can cause long term environmental damage;*

5) *Fundamentally, the policies have attracted criticism because of the conflicting impact of EU fisheries policies on the EU development policies in West Africa.*

(Source: Brown, O. (2005). Policy Incoherence: EU Fisheries Policy in Senegal. Human Development Report Office, UNDP, pp. 5)

6) These types of agreements tend to ignore the traditional artisanal fisheries' interests, and, thus, the support for research and development in the respective countries is very little or close to none (Koulaïmah-Gabriel & Oomen, 1997, p. 3).
7) The fishing rights granted by the governments of third countries may therefore serve as a threat to sustainability of fish stocks in the area, and they could in many cases be considered excessive for at least three factors: 1) the lack of information on fish stocks; 2) the European fishing sector is pressured to sign fisheries agreements with third countries due to the lack of marine resources and the over-capacity of EU fishing fleets; 3) the governments of third countries' need for financial contribution, which is often unconditional, is great (Koulaïmah-Gabriel & Oomen, 1997, p. 3).
8) The consequences of subsidies provided to the EU fishing vessels could be over-capacity in the EU fishing fleet and the overexploitation of fish stocks (Kaczynski & Fluharty, 2002). These subsidies contribute to financially support the EU fishing vessels' continuation to fish, despite the fact that the depleted fish stocks are no longer economically profitable (Brown, 2005). Moreover, the subsidies displace *"foreign investors and local entrepreneurs in the coastal states, distorts economics of the European fishing enterprises and promotes excessive pressure on the resources that greatly harms the marine environment in the West African region"* (Kaczynski & Fluharty, 2002, p. 75)
9) The illegal, unregulated and unreported (IUU) fishing by the European Union fishing fleets. According to CTA (2004b), *"undeclared landings, misreporting and under-reporting of catches from EU fishing fleets are widespread"*. In 2004, the European Commission confirmed these compliance issues within their fisheries through a published report titled "Compliance Scoreboard" (European Commission, 2004). This Compliance Scoreboard from 2004 has shown that there is a very low level of compliance among the EU member states, and a lack of willingness to report catch volume related to those EU activities in third-countries, particularly in the ACP coastal waters (CTA, 2004b).

The first fishing agreement that had been signed between the EU and Senegal was in 1979 (UNEP, 2002). Since the beginning of the fishery agreement with Senegal, *"the EU fishing industry benefited from profitable access to the once-rich Senegalese waters, with few restrictions imposed by either the EU or the Senegalese government"* (Kaczynski & Fluharty, 2002). Normally, the agreement between the two parties was renewed every two years, but, in 1997, the EU and Senegal signed a four-year long fishing agreement (UNEP, 2002), which was followed by another four-year long agreement in 2002. Kaczynski and Fluharty (2002) claimed that the fishery agreement between the EU and Senegal turned out to be not as beneficial as previously anticipated in terms of environmental and social aspects, i.e. the fish stocks are depleted or in the state of collapse while the Senegalese artisanal fishery may have been disrupted by the EU industrial fishing fleets. This was found out after more than 15 years of repeatedly renewing the EU-Senegalese agreement (Kaczynski & Fluharty, 2002, p. 82). Worryingly, Senegal and its neighbor countries in the West African coastline have to face the consequences and find ways to remedy the depleted fish stocks and restore the disrupted local small-scale and artisanal fishery (Kaczynski & Fluharty, 2002).

In the case of Senegal, the increased fishing pressure from the three main fleets (i.e. the EU, Russia and Asia) had also a negative impact on the small-scale fishers, fishworkers and the local fishing communities. The small-scale fishing industry had to face direct competition with the EU's industrial fishing fleets to not only supply the local market in Senegal but to supply to the European market as well (Brown, 2005). Furthermore, the issue of food security may be at risk as there may be a local market supply shortage. This is because those fish species which were previously consumed locally in Senegal may have been excessively exploited due to their high commercial value in the European market (UNEP, 2002). As a result of this, these fish species are fished and exported to the EU market, leaving the local Senegalese fishing communities in a bad shape as their local food security and jobs are threatened (UNEP, 2002).

As regards to food security and fish prices, Brown (2005) argues that the export of fish to the EU market has made the fish prices to increase in the Senegalese domestic market. As the fish prices in the domestic market have increased, the local consumers may have a limited selection of fish due to their lack of purchasing power. According to Brown (2005), as Senegal becomes more export-oriented, the fish resources are more concentrated around big cities, such as the capital of Senegal, Dakar. The annual consumption per capita of fish in and around Dakar is around 43 kg, while the estimate for the whole country is on the average of

26 kg (Brown, 2005). The quantity and quality of fish that are distributed to location further away from the coast tend to be less and poor, than those locations that are closer to the coastline of Senegal (Brown, 2005). Presumably, the amount of fish distributed across the country to those who do not live by the coastline may be reduced even more as the fish stocks in the Senegalese waters are currently considered overfished. According to Nordberg (2003), by the year of 2000, *"the average landed size of most export species have fallen below the level of sexual maturity representing fishing activities that have increased beyond sustainable levels"* (Nordberg, 2003, as cited in, Brown, 2005, p. 4).

Kaczynski and Fluharty (2002) stated that these fishery agreements between the EU and the West African countries could be overall described as *"access to stocks for financial compensation"* (p. 78), or 'access for cash' agreements as described by Nordberg (2003). According to Sporrong et al. (2002a), the EU paid a total of some EUR 137.45 million as financial compensation to all third-countries that were under the fisheries access agreements. Furthermore, it was argued that there were two ways for the EU and its fishing vessels to make payments for fishing access in the West African waters; *"(a) an amount directly paid by the EU, usually in yearly installments, and (b) license fees to be paid by individual EU vessels"* (Kaczynski & Fluharty, 2002, p. 79). Normally, approximately two-thirds or more of the total value of compensation are paid by the EU annually to the West African countries in exchange for fishing access, while the remaining one-third or less of the total value of compensation are fees paid by ship-owners privately (IFREMER, 1999; Kaczynski & Fluharty, 2002). However, in the five-year period between 1993 and 1997, the financial contribution provided by the EU to third countries through fisheries agreements in general accounted for 82.8% (averagely €155 million annually), whereas fees paid by EU ship-owners accounted for the remaining 17.2% (averagely €32 million annually) (IFREMER, 1999). During the same period, the compensation and fees under the EU-Senegalese agreement accounted for €9.368 million (90.1%) and €1.028 million (9.9%) annually by the EU and the ship-owners respectively (IFREMER, 1999). In the written analysis with the title *'Accords de Pêches Sénégal – Union Européenne'*, Dieng (1995) stated that the financial compensation provided by the European Union to Senegal in the period between 1994 and 1996 remained at the same level of €18 million (as cited in Kaczynski & Fluharty, 2002). The main reason was less fish to catch for the EU fishing fleets in the Senegalese waters. According to UNEP (2002), financial compensations was made in the agreement with Senegal in 1997, which accounted for €48 million. Furthermore, for the first time bottom trawling of pelagic species

was introduced in the agreement between the parties, which the potential of annual catch was estimated to be around 25,000 tons (UNEP, 2002, p. 21).

8.11.3 The Problem of Fisheries Agreements

While numerous of countries in Africa struggle with food shortage and local population growth (UNEP, 2009), the European Union had taken advantage of their Fisheries Partnership Agreements (FPA) with West African countries. For nearly three decades, the agreements between the parties have been given the EU access to the West African waters (Iossa, et al., 2008; Lundstedt, 2009). Senegal was one of the countries that were affected by this agreement, including the countries in the Economic Community of West African States (ECOWAS) (Lundstedt, 2009). Thus, the European Union is according to Iossa, et al. (2008) responsible for playing a major role in depleting fish stocks outside of the West African coastline, including the Senegalese waters (Iossa, et al., 2008).

Europe is known to have high consumption levels of fish and fishery products, while at the same time their waters are suffering from years of overexploitation and dwindling fish stocks (UNEP, 2009, pp. 15-17). According to Kaczynski and Fluharty (2002), *"in Europe, the market demand for seafood and the capacity of fishing fleets to extract living marine resources from its Exclusive Economic Zone (EEZ) far outstrips available reproductive capacities"* (p. 76). As the fish stocks in the EU waters are collapsing while at the same time they have to cope with over-capacity in their fishing fleet, the European Commission has been put under a lot of pressure to not only manage their fish stocks but also negotiate with foreign countries in order to acquire access rights to their fishing grounds (Brown, 2005). Thus, the European fishing industry is unquestionably *"highly dependent on distant water fishing for investment opportunities, employment, and supplies of raw material"* (O'Riordan, 1999, p. 4). In order to meet these needs, the European Union has to rely on fisheries agreements. In fact, the EU has been dependent on these fisheries agreements since 1977 (O'Riordan, 1999). These agreements with third-countries are in some cases considered to be tools for the EU to maintain as well as expand their distant water fishing fleet in third-countries, while at the same time the fisheries agreements are used to reduce the fishing pressure on the European Community waters at home (O'Riordan, 1999). Considering the technology that are put into use in the EU member states waters, the end result in overexploiting these waters in the long-term has turned out to be devastating (Fitzpatrick & Newton, 1998). Currently, overfishing has not only threatened the sustainability of fisheries resources in the present generation, but

the issues observed at this very moment may also influence future generations (Fitzpatrick & Newton, 1998).

As a matter of fact, the European Union's fish resources are overexploited to the extent that they can only meet 50% of their internal demand (Iossa, et al., 2008, p. 14) However, in the past few years, the EU's internal production is not able to cover more than 40% of their internal demand (European Commission, 2011a). Thus, in search for fish and profit elsewhere, the EU's focus was set upon African waters in order to continue sourcing their fish and meet the increasing demand for fish and fishery products at home (UNEP, 2009). According to Kaczynski and Fluharty (2002), the EU solved parts of their issue of dwindling fish stocks by redeploying its member states' fishing fleets into the waters of non-EU countries or, more specifically, in developing countries. In this case, fishing in West African coastal states was mainly through "cooperation" fishery agreements. According to Kaczynski and Fluharty (2002), *"cooperation agreements in fisheries between European Union (EU) and West African coastal states are seen as important tools of EU's economic cooperation policy with countries of the Third World"* (p. 75). For years, the Fisheries Partnership Agreement has made it possible for the European Union to acquire access to and exploit the waters of the ACP countries (i.e. Africa, Caribbean and Pacific countries), and the shortage of fish in Europe was no longer a concern. In other words, the European Union is 'exporting' their problems elsewhere in order to manage their own fisheries and limit their fishing, while taking advantage of West African countries, such as Senegal, which have weak regulations and lack of control and surveillance services of marine resources (New York Times, 2008).

According to Iossa et al. (2008), the objective of fisheries agreements with developing countries *"sustainable development and the gradual integration of ACP countries in a global economy via regional integration"* (p. 11). However, since the ACP countries, which include Africa, Caribbean and Pacific countries, still struggle to find their way into the global economy, new trade relations with the European Union were negotiated.

The negotiations between the ACP countries and the European Union were completed in December 2007. The number of ACP countries that signed a new fisheries agreements with the European Union was less than 50% (Iossa, et al., 2008). Senegal was one of the countries that did not sign a new agreement. However, two countries in West Africa agreed to sign new agreements with the European Union. These two countries were Ghana and Ivory Coast. Iossa

et al. (2008) argue that Ghana and Ivory Coast accepted to renew their agreements with the EU in order to avoid the risk of losing market access and disruption of trade (p. 11).

8.11.4 The Senegalese Government

On the other hand, foreign industrial trawlers from the European Union, China, Russia, or from other places in the world that exploit the waters of Senegal are not the only ones to blame. As a matter of fact, the Senegalese government plays a major role in the decline of their own fisheries sector (New York Times, 2008). The exhaustion of the Senegalese marine resources was also caused by the government's desire of short-term benefits at the expense of the fishing communities' welfare. The African officials are said to oversell fishing rights to foreign fleets, in which gave foreign operators to gain access to exploit their own waters (New York Times, 2008). In return for granting fishing access to foreign operators, most countries in West Africa would receive "access fees" from the European Union. Thus, they chose to contribute to overexploit their own their marine resources in order to gain the "access fees" from the European Union, in which often represent a significant amount of the total government income (Iossa, et al., 2008). In 2002, Senegal agreed to sign a four-year partnership agreement with the European Union, which was worth $16 million a year, despite early warnings indicated by studies that were conducted in 1991 and the European Union's scientific report in 2002 (New York Times, 2008). The agreement allowed the European Union to fish tunas and bottom-dwelling species, where the latter is rapidly declining as only a quarter is left of what it has been in the 1980s (New York Times, 2008). In 2006, Mauritania, yet another West African country, had signed a six-year long partnership agreement with the European Union that was worth $146 million a year (New York Times, 2008). Since this amount of money accounted for about a fifth of the government budget, Mauritania chose to ignore the fact that their marine resources would be exploited to the maximum, which in turn would severely affect their local fishermen (New York Times, 2008).

Iossa et al. (2008) indicated that the Senegalese government may show some weaknesses in their regulation and management of their marine resources, since what is being regulated and controlled are not the actual fish catches but the quotas on the number of boats, which are operating in their waters. What's more is that the Exclusive Economic Zone of the country could be easily accessed through a fishing license, which could be easily acquired from another country in the area and there is practically *"no limitation to the catches"* (Iossa, et al., 2008, p. 7), i.e. in terms of quantitative or qualitative. Furthermore, Iossa et al. (2008) argue

that fishing authorities may have failed to control all the foreign industrial vessels that cross borders, i.e. sail from one Exclusive Economic Zone to the next.

8.11.5 The Non-Renewal of Fisheries Agreement

After years of exploitation of the marine resources, the Senegalese had finally put an end to the fierce competition between traditional fishermen and foreign industrial trawlers and the many conflicts that largely revolved around fish stocks access. In the dire need to address the issue of fast-depleting fish stocks, the fishing agreement between the European Union and Senegal has not been renewed in 2006, which is the first time since 1979 (Iossa, et al., 2008; Stilwell, Samba, Failler, & Laloë, 2010). Previous agreements with the European Union had shown that the partnership itself was not an ideal way to address the many issues in the country, which had also caused a lot of concerns for the local fishing communities in Senegal. Thus, they refused to sign the agreement in urgent need to limit foreign vessels from exploiting their marine resources, and shift their focus towards "*food security and the development of its national industry"* (Iossa, et al., 2008, p. 1). In this way, traditional fishermen and national corporations may get a better chance to operate as non-renewal of the agreement may have relieved some pressure off the overexploited fish stocks. On the other hand, Stilwell et al. (2010) argue that whether *"[…] the non-renewal of the fisheries' agreement with EU can be viewed as a victory for local Senegalese fisheries' groups is however, questionable"* (Stilwell, et al., 2010, p. 616).

Even though Senegal refused to sign a new agreement with the European Union, the country still seeks to attract foreign skills, technology and investment, as most other poor countries would do (Falkenberg, 2004; Iossa, et al., 2008). Thus, they allow foreign countries to establish joint ventures with national companies (Iossa, et al., 2008). However, joint ventures can only be formed on the condition that at least 51% of the shares are in the possession of the Senegalese investors (Iossa, et al., 2008). These kinds of joint venture are particularly common when it comes to the tuna fishing industry, where high investments are required. Regardless of the non-renewal of the fisheries' agreement with the European Union, the Senegalese government had reached an agreement with France and Spain for the benefit of their own tuna fishing industry (Iossa, et al., 2008). Thus, granting the French and Spanish pole-and-line tuna boats access to Senegalese waters. According to Kaczynski and Fluharty (2002), *"the tuna fishery is the least controlled component of EU fleet operations in the West African 200 mile EEZ"* (p. 86). It is further stated that the countries that utilize the tuna

resources from the West African waters include Cuba, France, Japan and Spain (Kaczynski & Fluharty, 2002).

On the other hand, the rules and regulations that are imposed by the government discriminates these foreign vessels in favor of their own, as *"foreign vessels in principle are subject to specific rules and controls"* (Iossa, et al., 2008, p. 8). In addition, the Senegalese government aims at creating more jobs and adds more value in the country. Thus, it is now required from all foreign vessels to *"land a certain quota of catches in Senegalese ports (usually 60%), which is intended to prioritise local Senegalese processing plants […]"* (Iossa, et al., 2008, p. 8). In the past, foreign vessels could ship all their catches directly to Europe with no jobs created and no value added in Senegal. According to the European Commission (2008), the Senegalese government required that all foreign fishing vessels, including the European, *"to land their whole catch in a Senegalese port"* (p. 1). In this case, the Senegalese government monitors all European and other foreign vessels whereas their national small-scale fishing fleet is not under surveillance or regulated at all (European Commission, 2008, p. 1).

8.11.5.1 Joint Ventures and the 'Senegalization' of Foreign Fleets

Joint ventures between foreign and national companies could also be found in the majority of companies in the processing sector (Iossa, et al., 2008). These joint ventures may benefit the Senegalese economy in terms of high processing capacity and exportation of higher value-added products (Béatrice Gorez, 2007; Iossa, et al., 2008). However, there are some issues regarding joint ventures. According to Gorez (2007), *"over 80 percent of the added value generated goes to the European operators, and only 19 percent to the third countries"* (p. 6). Furthermore, the Senegalese expected to gain more know-how from the Europeans through these joint venture companies. In this way, they could better develop the Senegalese processing sector, but , however, they are seldom involved in the management of joint venture companies by the European fishing professionals (Iossa, et al., 2008, p. 8).

In addition, joint ventures may be established for other purposes than to aid the Senegalese government's efforts to develop its national industry. As previously mentioned, foreign vessels are subjected to different rules and controls in comparison to the national vessels. Thus, in order to bypass these rules and regulations, the European vessels seek to form joint ventures which allow them to get better access to marine resources in deep waters as well as in coastal waters (Iossa, et al., 2008). Furthermore, through joint ventures, European vessels are also allowed to fish under the Senegalese flag. According to the UNEP (2002), *"fishing*

ships flying foreign flags are authorized to fish in Senegalese waters either under fishing agreements concluded between Senegal and the State of the flown flag or the organization representing that State, or when chartered by Senegalese nationals" (p. 21).Fishing access to third-countries' waters could also be acquired by fishing vessels owned by EU member state companies or other foreign states through simply registering under a foreign flag (CTA, 2004a, p. 6). Thus, what seemed to be Senegalese-owned vessels were actually foreign vessels in disguise, and these vessels are financed and run by the Europeans (Iossa, et al., 2008, p. 9). This method is called the 'Senegalization' of foreign vessels, which in this case are European fishing vessels. These cunning methods are not only to bypass the coastal state's attempts to regulate and control its own waters, but they also give these European companies a better chance to *"escape any EU control and regulatory measures"* (CTA, 2004a, p. 6). Consequently, management and control of foreign industrial vessels would be difficult due to the fact that it is hard to distinguish between foreign and national vessels (Iossa, et al., 2008).

According to Iossa et al. (2008), the attempts from the Senegalese government to grant national companies and small-scale fishermen better access to national marine resources as well as reducing the high pressure on marine resources may not have been successful. In their search for other means to control and acquire access to the Senegalese marine resources, European operators are in fact undermining all of the efforts made by the Senegalese government to develop their economy as well as to make an end overexploitation of fish stocks (Iossa, et al., 2008, p. 8). In order to bypass the rules and regulations imposed by the government, European operators control the marine resources *"through the "Senegalisation of European vessels, the buying out of Senegalese fishing quotas and the repatriation of capital"* (Iossa, et al., 2008, p. 8). It is previously stated that foreign vessels are required to land their catches in Senegalese ports where the fish would be processed locally. However, this rule does not apply to 'Senegalized' European vessels (Iossa, et al., 2008). Furthermore, the practice of transshipment is another way to bypass the government rules and regulations (Iossa, et al., 2008). Transshipment is a practice where catches from small boats are transferred into larger vessels. In that way, the catches could be transported directly to their given destination without having to land their catches in Senegal (Iossa, et al., 2008). However, such practices to bypass rules and regulation would not work in favor of countries that struggle economically as it threatens *"the sustainability of stocks and ultimately the development of the local economy"* (Iossa, et al., 2008, p. 8).

Iossa et al. (2008) claim that European fisheries operators in Senegal may still have many widely spread practices which do not work in favor of the Senegalese government or its people. Such diffused practices include *"the so-called "Senegalisation" of European boats, buy out and cumulating of Senegalese fishing quotas, transshipment and repatriation of profits"* (Iossa, et al., 2008). In addition, there is illegal fishing in the Senegalese waters, which is not properly monitored or controlled by the government. According to Iossa et al (2008), these types of practices does in fact serve as a hindrance to the country's long term development as they *"bypass the government's attempts to regulate access to and control of the marine resources"* (Iossa, et al., 2008, p. 1).

8.11.6 The Consequences of signing a new EPA with the EU

According to Iossa et al. (2008), the consequences of signing a full EPA with the European Union, would mean to liberalize the fisheries sector in the sense that European companies would be granted full access to operationalize and establish in the fisheries sector as they see fit, and the number of foreign vessels would probably increase. Interference from the Senegalese government would no longer be possible, since the agreement overrides any efforts from the government to introduce new policies (Iossa, et al., 2008). This means that the Senegalese government can no longer impose policies such as limiting fishing access of foreign vessels or to require them to land certain quotas of their catch in Senegalese ports (Iossa, et al., 2008). Thus, the catches would be directly transported to their appointed destinations without any limitations imposed by Senegalese government, which will probably cause numerous of companies in the industry to go bankrupt. In turn, many people who work in the processing industry would be considerably affected as job losses are inevitable in this case (Iossa, et al., 2008). As a result, the rate of unemployment will then increase which may also lead to an increase of illegal immigrants to Europe.

No limited access into the Senegalese waters would mean that there will be more foreign industrial vessels that operate in the waters - and the more foreign vessels operating, the higher the pressure on fish stocks. Thus, the EPA may threaten the food security of thousands of people in Senegal by exploiting their marine resources (Iossa, et al., 2008).

In addition, there is no longer a point for European operators to establish joint ventures with local companies in Senegal, since their intentions were, in the first place, to acquire access to the Senegalese marine resources through joint ventures (Iossa, et al., 2008). Furthermore, the fierce competition between local fishermen and foreign operators would inevitably increase

due to absence of restrictions, which would certainly work in favor of the foreign operators (Iossa, et al., 2008).

One of the apparent recommendations given to Senegal with regard to the fisheries agreement is that the country must reject renewing the agreement. It is rational to refuse to sign a new agreement due the fact that a full fisheries agreement, including services and investment provisions, threatens the food security of millions of people in Senegal, and effective management of fisheries and conservation of fish stocks (Iossa, et al., 2008). Iossa et al. (2008) suggest that the European Union has to *"take into consideration socio-environmental and food security impacts"* (p. 14) in order to make the agreement beneficial to Senegal as well. Only then, the Senegalese may reconsider to renew the agreement with the EU.

8.11.7 The EU's Contributions in Senegal

In exchange for fishing rights, the European Commission (2008) promised that Senegal and any other countries that sign a new fisheries partnership agreement with them would receive a wide range of benefits. According to the European Commission (2008), these benefits include improvements on fish stock management, surveillance and control of fishing fleets, and financial contributions (p. 3). In order to improve the management of fish stocks in the partner countries, fishing pressures need to be controlled, fishing operators need to act in compliance with the predetermined catch quotas, and catches must be constrained to sustainable levels. Thus, the European Commission (2008) would propose a set of rules and obligations that would prevent any countries under the FPA, including themselves, to excessively exploit the ocean and its resources in a carelessly and irresponsibly manner. Through these rules and obligations, the partner countries would be granted some of the necessary tools to achieve better management of their fish stocks, and monitor and control the catches not only from foreign fleets but national fleets as well. Furthermore, the agreement would not allow any fishing vessels to fish those stocks in which scientific evidence have proven to be in danger of extinction. Thus, the allowable catch will be entirely based on scientific advices and recommendations. According to the European Commission (2008), the allowable catches from the EU fishing fleets would be based on two main factors; (1) if the national fleets were not able to exploit these fish stocks themselves, and (2) if these fish stocks were proven by scientists to be a surplus for the national fleet.

Moreover, through the agreement, effective monitoring systems would be introduced, and the partner countries would receive the necessary financial support in order to put these systems

into practice (European Commission, 2008). The monitoring and control programs would benefit the partner countries in such a way that they would acquire a better overview of the fish stocks as well as the fishing fleets in the area. From the information obtained by the assessment, better and probably more rational decisions would be made on how to manage the fish stocks and regulate the fleets in the future. Other necessary financial support would also be provided by the EU, e.g. *"to the national government budget"* (European Commission, 2008, p. 3). In addition, the benefits of signing a fisheries partnership agreement with the EU include *"economic value, i.e. direct creation of jobs […]"* and *"marketing of fishery products intended for African markets"* (European Commission, 2008, p. 3).

Since 2006, no fisheries partnership agreements have been signed between Senegal and the EU (European Commission, 2008; Iossa, et al., 2008; Stilwell, et al., 2010). However, according to the European Commission (2008), the EU has still been providing the fisheries sector in Senegal financial assistance, even though they are not compelled to lend any support to Senegal sine the FPA is no longer in effect. As a matter of fact, the European Commission (2008) claimed that the EU still *"remains one of the biggest financial contributors to this sector"* (p. 3). Most of these financial contributions are through the European Development Fund (European Commission, 2008). However, the EU is not the only contributor, but there are also other financial contributors as well. These include the African Development Bank, World Bank and the French Development Agency, in which contribute financially in order to reconstruct the fisheries sector in Senegal (European Commission, 2008).

Over the years, the EU had been several times accused by NGOs and the international press to have overfishing not only the Senegalese waters but the majority of the West African waters. However, the European Commission (2008) claimed these accusations to be false and that their true intentions and actions were the total opposite of how they have been frequently portrayed in some of the reports and articles from NGOs and the press. The European Commission (2008) stated their objectives in Senegal as follows; *"[…] the Commission is seeking to cut fishing effort and promote sustainable management of Senegalese stocks, while preserving the long-term economic and social activities that depend on this sector"* (p. 4). In order to achieve these objectives and strengthened the Senegalese fisheries, the EU launched a €6 million program in 2007 to support the Senegalese Fisheries Ministry in their pursuit of their goals (European Commission, 2008, p. 3). The purpose of this program was to aid Senegal to implement systems to control and regulate its fisheries and improve its management of fish stocks.

Another program that aimed to support the Senegalese artisanal fishing was launched in 2000 (Lefèbvre, 2003). This program was called "PAPA-SUD". According to Lefèbvre (2003), the EU and the French Development Agency financed the PAPA-SUD together, in which accounted for €8,63 million. The EU contributed with 64% of the total financial support. The purpose of PAPA-SUD was to *"invest in infrastructure with a view to improving access to unloading areas, improving working conditions across the whole sector (catching the fish, processing and distribution), strengthening quality and hygiene controls on fresh and processed products, improving distribution and artisanal processing methods, and, finally, increasing safety at sea"* (Lefèbvre, 2003, p. 70). Thus, this program was no doubt beneficial for Senegal, but it is important to emphasize that PAPA-SUD as a program did not encourage the fisheries to increase their fishing efforts, i.e. the size of the catches, or cause further harm to the marine resources in Senegal (European Commission, 2008; Lefèbvre, 2003). Its sole purpose was to promote sustainable use of these resources and improve the industry and the coastal fishing communities as a whole.

8.11.8 The EU Responds to the Accusations from NGOs

The European Union's trade policy had been met with a great deal of accusations and criticism from a number of NGOs (Griffin, 2008). Some of the accusations that were directed against the EU's fisheries and trade policies, include depletion of fish stocks, undermining the food crisis (e.g. in Senegal), and force the local fishermen to immigrate illegally, which in many cases have devastating consequences (European Commission, 2008).

However, the European Commission (2009c) indicated that these accusations are not always true, and stated that they *"are based on a number of misconceptions"* (p. 25). The European Commission recognized the fact that some of the areas in the West African waters are indeed overfished. However, they distanced themselves from any accusations of overfishing, and explained that the fishing pressure contributed by EU fleets had not accounted for more than 20% of the total fishing pressure in the area (European Commission, 2009c, p. 25). As a matter of fact, the European Commission (2008) insisted that the industrial vessels in Senegalese waters did not catch more than 2-3% of the total fish caught under the period in which the fishing agreement was in effect (p. 1). Therefore, the EU fleets had not been playing a major role in depleting the fish stocks in the Senegalese waters as accused by NGOs, and neither have EU fishing operators under the FPA competed against traditional fishermen in Senegal during this period (European Commission, 2008). However, the European Commission (2008) cannot guarantee that other non-EU foreign fleets are

competing with the Senegalese small-scale fishing boats. Moreover, according to the FPA (EXPLAIN?), EU vessels were not allowed to operate within any of the West African coastal waters that was only intended for artisanal fisheries (European Commission, 2009c). This was the area known as the 12-mile zone from the coast.

According to the European Commission (2008), the *"Senegalese Fisheries directorate figures for large vessels currently fishing in Senegalese waters are: 7 Spanish pole-and-line tuna vessels; 4 French pole-and-line tuna vessels […]; 2 tuna seiners from Cape Verde; 1 Gambian trawler; 4 Mauritanian trawlers […]"* (pp. 1-2). This is in contrast to the Senegalese small-scale fishing, which accounted for between 10,000 to 15,000 pirogues in the same period (European Commission, 2008). From 2000 to 2003, the average catch from small-scale fishing amounted to 341,970 tons, which represented 87% of the total catch in Senegalese waters, i.e. including catches from foreign and national fisheries (European Commission, 2008, p. 2). The catches from both foreign and national vessels accounted for around 13% of the total catch in Senegal. In the same period, the average catch from EU trawlers accounted for 8,146 tons, which represented 2.07% of the total Senegalese catch (see table XX). Thus, the European Commission (2008) argue that *"it is wrong to say that it is the European fleet – and only the European fleet – that is overfishing in Senegalese waters"* (p. 2). The table presented below is the catch figures for fishing vessels in the Senegalese waters. The numbers are in tonnes and tuna vessels are excluded from the table.

Catch figures (in tonnes) in Senegal

Subsectors	Small-scale fishing	Industrial fishing			
Fleets	Senegalese boats			Foreign boats	
	Pirogues	Senegalese trawlers	Sardine vessels	EU trawlers	Other trawlers
Years					
2000	338 207	37 944	1 377	7 169	1 519
2001	332 360	43 689	1 688	8 120	632
2002	311 536	43 014	1 472	7 837	675
2003	385 776	38 683	1 539	9 458	18
2000-03 average	**341 970**	**40 833**	**1 519**	**8 146**	**711**
%	**86.98**	**10.39**	**0.39**	**2.07**	**0.18**

Source: Senegalese Fisheries directorate, as adopted by, European Commission, (2008), "Rebuttal of NGO statements about the situation in Senegal: Is Europe really giving Senegal such a raw deal? Facts and figures", pp. 2.

Furthermore, in their attempts to attract employment from the rural areas to the urban areas in the coast, the majority of West African governments had carelessly made a great deal of effort into developing the inshore sector (European Commission, 2009c). In turn, this had led to an increase to such an extent that there was an overcapacity of artisanal fleets, which had caused excessive fishing pressure into the West African waters (European Commission, 2009c). It is further stated that the size of the national artisanal fleets may become larger than those of the EU (European Commission, 2009c). For instance in the case of Senegal, the small-scale fishing activities were not regulated by the government (European Commission, 2008). According to the European Commission (2008), Senegal had in several occasions been informed and warned about the dwindling fish stocks through scientific assessments, but still there were no rules or regulations that had been enforced by the government (European Commission, 2008). Consequently, the country now faces major environmental and economic problems, in addition to the increasing fuel prices (European Commission, 2008). Thus, the fishing opportunities have been significantly reduced for traditional fishermen in Senegal (European Commission, 2008). It is for these very reasons that some people have taken the advantage of the current situation in the country, and made money of those who are driven to such desperate actions as to migrate illegally to Europe (European Commission, 2008). Thus, the European Commission (2009c) argue that economic migration is not caused by overfishing, but in reality it is rather that *"overfishing is a response to economic migration"* (p. 25).

On the subject of "Senegalization" of foreign vessels, which is a method used by foreign vessels in order to bypass the Senegalese government's rules and regulations, the European Commission (2008) responded as follows: *"the flagging rules for the Senegalese fleet are set by the Senegalese government, which has full sovereignty in this area"* (p. 1). According to the European Commission (2008), Senegal, which is the flag state, has to take the full responsibility when it comes down to granting fishing fleets access to their waters as well as monitoring and controlling the fishing activities of these fleets (European Commission, 2008). This applies for all fishing vessels, both foreign and national. Furthermore, the European Commission (2008) stated that the EU has not the power to interfere with the rules and policy that has been enforced by the Senegalese government. Thus, it is further argued that no rules or laws had been broken by the European vessels, even if it is the case that they happen to

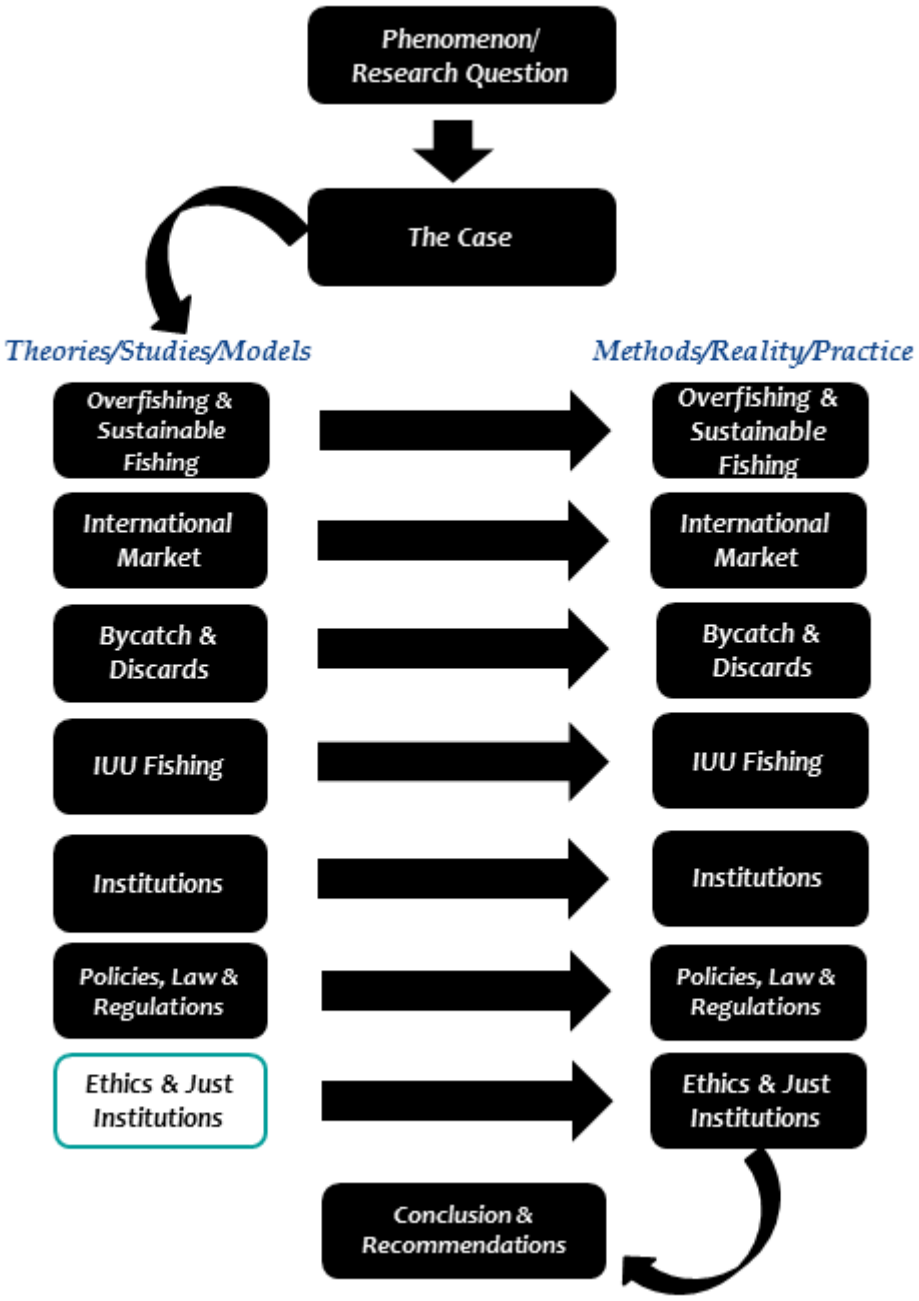
choose to flag their ships as Senegalese (European Commission, 2008). This is simply for the whole reason that the *"current Senegalese rules allow this"* (European Commission, 2008, p. 1).

Illegal migration is a subject that often appears in the international press and articles from certain NGOs. In many cases, it was frequently indicated that the root cause of the illegal migration was due to excessive overexploitation of fish stocks from EU fishing vessels. However, according to the European Commission (2008), these accusations could not be true for several different reasons. In the period between 2000 and 2003, the European trawlers only caught on the average 2.07% of total fish caught in Senegal, whilst the average catch from Senegalese pirogues or small-scale fishing accounted for around 87%. Given these figures, the EU vessels had not caught to the amount that is considered overfishing. Furthermore, the European Commission (2009c) insisted that the illegal immigrants to the Canary Islands in Spain were neither fishermen nor local people from the West African fishing communities. However, in another document, the European Commission (2008) admitted that some of the illegal immigrants were fishermen from Senegal, but they further argued that the vast majority were *"the young unemployed from urban areas"* (p. 4). In addition, the Senegalese coast is for many people a more attractive point of departure than the countries that are geographically closer to Europe (European Commission, 2008). Thus, there are also non-Senegalese people from other countries, who had also chosen to migrate illegally to Europe by departing from the Senegalese coast (European Commission, 2008). In other words, the Senegalese people were not the only ones that attempted to emigrate from the Senegalese coast, but there were also other kinds of people from other countries that for whatever reasons had arrived at the Senegalese coast in order to continue their illegal voyage into Europe.

As regard to poverty and food security in the West African countries, the European Commission (2009c) agreed that these are important issues that needs to be addressed not only by the EU but also the West African governments. However, they refused to have taken any part in undermining the food security of these countries, and instead claimed that the EU's FPA may have been the solution rather than the problem to the food crisis and poverty (European Commission, 2009c).

On several occasions, certain NGOs had pointed out that the reason behind the non-renewal of the fisheries agreement was because the EU fishing vessels had singlehandedly depleted the

fish stocks in Senegal after years of plundering their waters (Iossa, et al., 2008). For this very reason, the Senegalese government refused to sign a new agreement in order to emphasize their concerns towards the fast-depleting stocks and the fisheries development dimension, which had been for the most part ignored by the EU (European Commission, 2008; Iossa, et al., 2008). However, the European Commission (2008) claimed that they have been misrepresented by these NGOs. Since 1980, much of the fish population in Senegal has considerably been decreased due to the increase in the Senegalese fisheries capacity (European Commission, 2008). After the four-year long partnership agreement with the European Union from 2002 to 2006, a renewal of the fisheries agreement had to be negotiated between the parties. During the negotiation process, the Senegalese government proposal suggested that the financial contribution from the EU would remain the same as in the previous signed agreement, while at the same time the fishing rights granted by the Senegalese government to the EU fishing vessels would be reduced by 60% (European Commission, 2008). Furthermore, the Senegalese government required that demersal fishing at the coast would be entirely excluded from the new agreement (European Commission, 2008). On the other hand, the EU proposal suggested that some of their financial contribution to Senegal would be used to support the development of the Senegalese fisheries sector, but, however, this proposal was refused by the Senegalese government (European Commission, 2008). Thus, during the negotiation process of a new fisheries agreement, the European Commission (2008) argued that they had "*made every effort to negotiate a new agreement agreeable to both sides"* (p. 3).


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Conclusion & Recommendations

9.0 Theory of Ethics

9.1 Just Institutions and the Original Position under a Veil of Ignorance

When situations with ethical implications occur an important question may arise; "how is it possible to know that an institution is just and fair?" An answer to this question might not be sufficient if equality and the "golden rule" (i.e. "treat others as you would like to be treated") as a part of justice are the only dimensions considered, when attempting to distinguish between just and unjust institutions. John Rawls (1972) suggests that one may have to imagine oneself participating in a panel of rules-makers *"in the 'original position under a veil of ignorance' to derive at a set of basic principles of justice"* (Falkenberg, 2004, p. 25). The panel members will be gathered in 'the original position' equipped with all the universal knowledge of human kind and the environment that people live in (Falkenberg, 1996, p. 164). This allow them to make rational choices in terms of equality and free choice, and, most importantly, to be able to come to an agreement of a set of justice principles (Falkenberg, 1996).

However, Rawls further suggests that the panel of rules-makers in the original position under a veil of ignorance will be given a random life where time and place are selected in a "lottery game" for the panel members' undetermined life (Falkenberg, 1996). Thus, the panel members or the rules-markers do not know what kind of life he or she will live nor when or where he or she is going to live (Falkenberg, 2004). In other words are they *"all ignorant of their future positions and will thus argue rationally for the best possible institutional arrangement"* (Falkenberg, 2004, p. 25). Since everybody is in the same position, it will *"force the participants to argue rationally and arrive at solutions they can live with, even in the worst position"* (Falkenberg, 1996, p. 164). Thus, the panel members do not know which person's interests they will represent "under the veil of ignorance", and they will live in utter ignorance until the veil is lifted and their fates and lives are determined by the lottery of life (Falkenberg, 1996).

Falkenberg (1996) extends the theoretical framework of Rawls (1972) by suggesting that the panel of rules-makers will *"(a) discuss and create a universal notion of the "GOOD;" and (b) decide on the ground-rules for society, and create the necessary institutions (laws, rules, norms, customs, conventions etc.) which, if followed, will achieve the notion of "GOOD" defined under (a)"* (Falkenberg, 1996, p. 164). Thus, to distinguish "just" institutions from institutions which are "unjust" depends on whether the institution promotes the "GOOD". If

the institutions promote the "GOOD" then they are considered "just" institutions, and if they do not promote the "GOOD" then they are "unjust" (Falkenberg, 1996, p. 164). Our behaviors should be governed by "just" institutions (Falkenberg, 1996). However, it is not always that simple due to our individual moral compasses which may not be ethical or in correlation with the definition of a "just" institution. Furthermore, individuals or organizations are considered ethical when they take actions accordingly to just institutions (Falkenberg, 1996).

Extending Rawls' framework even further, Falkenberg (1996) suggest three basic principles for the overall "GOOD" in order to test whether institutions are just or unjust. These three basic principles for the "GOOD" are; *"1) survival 2) equality of moral value and 3) a distribution of index goods according to the max-min principle"* (Falkenberg, 2004, p. 25). According to Falkenberg (1996), *it is "assumed that the panel will order the principles lexically so that the first principle trumps the second which in turn overrides the third if necessary"* (p. 170). This particular test for just institutions will be served as a useful tool to reveal whether institutions promote these principles or not. The institutions that promote these three principles are indeed just, and those which fail to do so are unjust and *"should search for a different set of institutions that are more just and act accordingly"* (Falkenberg, 2004, p. 25). These tests of institutions will become very important when individuals and organizations are operating in developing countries where institutions often fail to adequately protect the people and the environment from harmful practices (Falkenberg, 2004, p. 25).

9.2 Three Basic Principles for "The Good"

9.2.1 Survival and Hand-Over

The first principle that the panel members are going to seek out and deliberate has to be the most universal and fundamental principle. Falkenberg (1996) suggests that the panel members have to find *"the most basic of all possible moral anchoring points"* (p. 166) in order to discuss and create a universal notion of the overall "GOOD". Moreover, he argues that life itself is hard to argue against, since it would mean to argue *"in favor of non life or death"* (Falkenberg, 1996, p. 166). Thus, the panel members have to take into consideration that whichever life that they will be assigned, in the life-lottery, is livable. To be assigned a life that is impossible to live, would be a too great risk to take for the panel members as they are still ignorant of their fates. Therefore, in their deliberation, the panel members have to consider the past, present and future generations of all the lives in the whole world (Falkenberg, 1996). This would lead to discussions about existential issues, which means that *survival* has to be the first basic principle for the overall "GOOD" (Falkenberg, 1996).

The minimum requirements for survival are sufficient *"(a) nutrition; (b) health; and (c) a set of basic survival tools"* (Falkenberg, 1996, p. 166) or basic education, which survival would be impossible if these minimum requirements are not met. The principle of survival also includes "hand-over" which means that *"each generation would have to hand-over the world to the next generation in an improved state"* (Falkenberg, 1996, p. 166). Today, the so-called "hand over", i.e. an improved and a better world to the next generation, is of great significance. This is especially as the world population is rapidly increasing; 5 billion in 1987, 6 billion in 1999 and recently it reached 7 billion in 2011 (United Nations, 2012). Thus, in accordance to the principle of survival, the world should be *"able to sustain more rather than fewer people"* (Falkenberg, 1996, p. 166).

In order to ensure the survival of future generations one has to be aware of the consumption level and resource utilization (Falkenberg, 2004, p. 25). However, Falkenberg (1996) argues that the minimum requirements for survival as well as the responsibilities of the improved hand-over to future generations may be *"one of the weaknesses in our current institutional order"* (p. 25). This may be for the reason that most of the important survival decisions on whether there will be sufficient resources available for future generations, are made by a part of the current generation in a small place and in a short time period (Falkenberg, 1996, p. 166). According to Falkenberg (1996), *"a just set of institutions would have to promote survival"* (p. 167). Moreover, in their search for profits, currently existing institutions may ignore the consequences of their economic activities (e.g. pollution, overly consumption of natural resources), which may prevent survival of future generations. As long as the potentially negative consequences do not affect them here and now, they would be ignored until future generations realize that the world they live in was not handed over to them in an improved state. Thus, even those institutions that people currently perceive *"as "just" may not promote survival – and we therefore need to discover which ones they are and seek to change them"* (Falkenberg, 1996, p. 167).

9.2.2 Equal Moral Standing

Falkenberg's (1996) second principle for the "GOOD" is equal moral value for all people. As a part of the principle of equality, we can look at the "golden rule" where the focus of equality is present; *"Do onto others as you would have them do onto you"* or *"treat others as you would like to be treated"* (Falkenberg, 2004, p. 25). The core value of the principle of equality is that people should not discriminate other people by treating them differently based on political beliefs, gender, race, age, religion, appearance, language, nationality, ethnicity,

sexual orientation etc. (Falkenberg, 2004). Furthermore, people should have equal rights, equal opportunities, equal freedom and they should be treated equally before the law (Falkenberg, 2004). This means that one can and should not treat people differently when they have equal talent and motivation *"when it comes to obtaining resources and entering different arenas like education, politics, employment, professions etc."* (Falkenberg, 2004, pp. 24-25). However, it is easily said than done as these problems are still present in developed countries.

In accordance to Falkenberg (1996), there may be an exception to the principle of equal moral standing. If an individual encounters a situation where two people are about to drown, one of those two people are a family member while the other is a stranger, and that individual is only able to save one of them, is he or she allow to discriminate whom to save by choosing his or her immediate family member rather than the stranger? Falkenberg (1996) argues that the panel members may agree that *"it should be allowed to discriminate in favor of one's immediate family in certain cases (i.e. parents, siblings, and children)"* (Falkenberg, 1996, p. 168), e.g. in the case of life or death as described above. This may be accepted by the panel members for the reason that the individual may have the role as a provider. This means that there might be a lot of people who depend on that particular individual as a provider, and, thus, it is a duty to provide for one's own family members first. Falkenberg (1996) expects that the panel members will conclude that *"the family unit is the best institution for reproduction, learning, socialization, care and nurturing of young and old, as well as for providing much needed survival tools"* (p. 168). Furthermore, the same moral standing would probably be granted to all people outside the immediate family (Falkenberg, 1996, p. 168).

The relationship between human beings and other species is something the panel members may have to consider in their deliberation in order to secure survival (Falkenberg, 1996). When it comes to the principle of moral standing of humans and other species, the panel would most likely put themselves at a higher moral standing relatively to other species as there are only humans in the panel (Falkenberg, 1996). Thus, animals and plants would be given a lower moral standing. This may contradict with the principle of survival where there is an assumption that the panel would ask each generation to hand over the planet in an improved state in which should be able to sustain more people rather than few. However, when there are more people in the world, then there are also more mouths to feed. In order to accommodate the increasing population, the survival of the human species is in some degrees dependent on the food that can be obtained from animals and plants. Thus, the survival of humans is determined by *"the proper balance of the interdependence among the species"*,

and *"the relative moral standing given to fellow species would probably be higher than that which is typical today"* (Falkenberg, 1996, p. 168).

Falkenberg (1996) suggests that *"the question is not whether all species should have the same moral standing but rather how large the difference should be"* (p. 168). The existence of other species may have a profound impact on humans in such a way that their extinction may threaten our survival. Thus, in order for humans to survive they not only have to make prudent use of other species, but they have to let other species survive within their environment as well. However, this means that they have to grant other species a higher moral standing than what is considered normal, and the difference between the moral standing of humans and their fellow species should not be that large considering their interdependency. If a generation is on the verge of failure to follow the principle of survival by handing over the planet to the next generation in a worse condition, then the only way to secure the survival of future generations is to change *"the institutional arrangement that governs political and economic decisions"* (Falkenberg, 1996, p. 168). The objective is to transform the inadequate set of institutions to an interdependent and ecological set of institutions (Falkenberg, 1996). Falkenberg (1996) argues that *"just institutions will enhance survival and grant equal moral standing to all persons, recognizing the interdependence between our own survival and the survival of other species"* (p. 168).

9.2.3 Maxi-Min for Index Goods

The third and last principle for the "GOOD" is called the maxi-min principle which is based on the distribution of index goods within different institutional frameworks (Falkenberg, 1996). Index goods are for instance *"income, wealth, social basis for self respect, professional powers, and rights, etc."* (Falkenberg, 1996, p. 169). According to Falkenberg (1996), when there is an unequal distribution of index goods occur between parties, then an agreement should be arranged to the benefit of the group which has the least advantage (p. 169), i.e. *"maximum to the group that has the least"* (Rawls, 1972, in Falkenberg, 2004, p. 25). Thus, the panel members will choose to abandon the set of institutions that undermines the maxi-min principle in favor of those that will *"maximize the benefits of the least advantaged group"* (Falkenberg, 1996, p. 169). Behind their rational reasoning and decisions, there might be an underlying fear of being placed in the least favorable group after the veil has lifted. Thus, in the original position is where the panel members have the power to make a difference, and the choices made here would most likely be consistent with the maxi-min

principle, i.e. they would not risk to be assigned a life where all possibilities are limited and life itself is difficult to sustain.

The Max-Min Principle

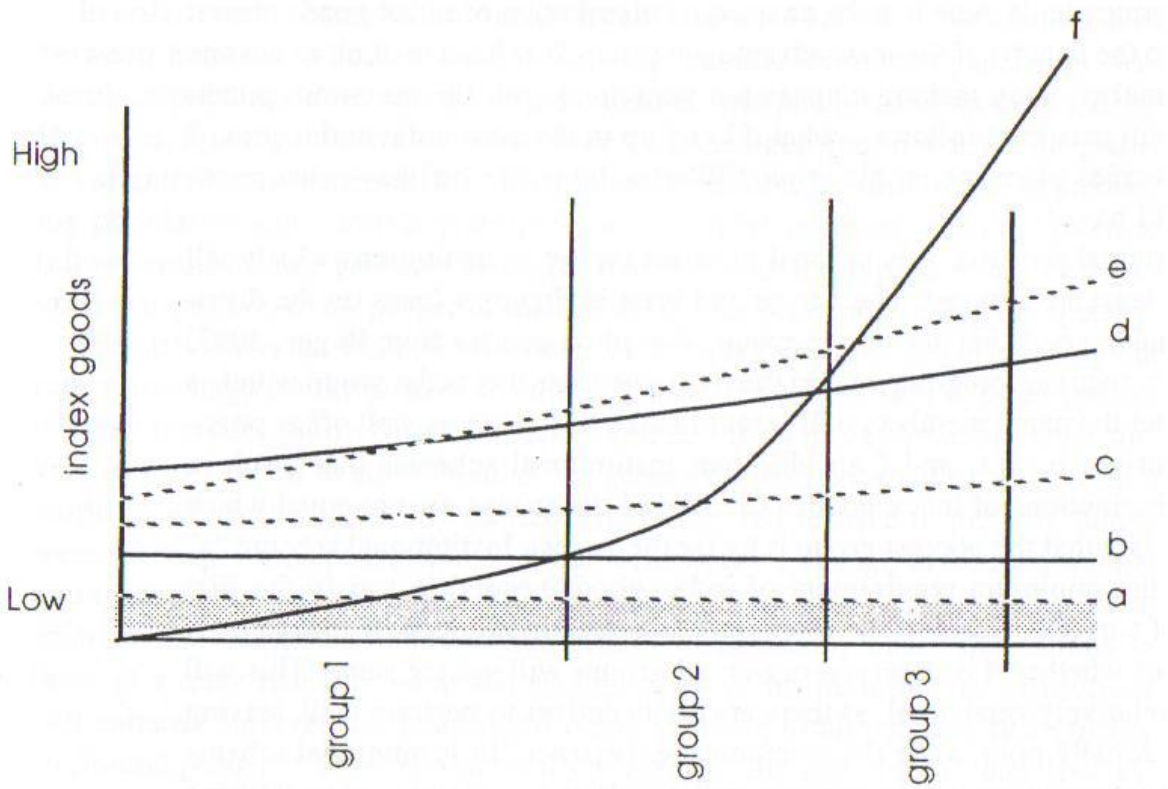


Figure 4. The Maxi-Min Principle

Source: Falkenberg, A. W. (1996), "A yardstick for justice and ethical evaluation of economic organizations", Journal of Socio-Economics, 25(2), pp. 170.

Based on the idea from Pogge (1993), Falkenberg (1996) suggests that the maxi-min principle could be explained through a figure. The figure consists of three different groups and six curves (a, b, c, d, e and f), which represents different institutional schemes. Moreover, the curves and lines indicate how the index goods are distributed between these three groups. Since the panel members in the original position would want the group that is worst off to be as well off as possible, they will select the set of institutions which will work in favor of the least advantaged group (Falkenberg, 1996). Thus, the main focus of the analysis will be on the group which has the least advantage, which in this case is group one. The figure indicates which of the three groups that is worst off by giving them unequal sizes. Through a close

observation one can see that group one is by far the largest group which also indicates that it is also the poorest.

In order to satisfy the first principle of survival, a minimum amount of index goods is required as represented by institutional scheme "a" in the figure (Falkenberg, 1996). In the institutional scheme "b", the index goods are distributed equally to all groups, which means that they will all receive the same amount of index goods regardless of whether they have earned it or not (Falkenberg, 1996). Falkenberg (1996) argues further that this will lead to a reduction of encouragement to perform well, since everyone will receive the same amount of index goods no matter how good their performances are. Without any incentives to perform well, everyone will be equally poor as experienced by those who lived under the communist regimes. In contrast to institutional scheme "b", scheme "c" represents a slightly unequal distribution of index goods, which results in some degree of incentives to perform well (Falkenberg, 1996). Falkenberg (1996) argues that *"the rational panel members will prefer "c" over "b" with a view to the possibility of ending up in group one"* (p. 170), i.e. group one would be better off in institutional scheme "c" than scheme "b". He further argues that even though there are some inequalities in the distribution of index goods, institutional scheme "d" would be preferred over scheme "c" for the same reason why scheme "c" is preferred over "b" (Falkenberg, 1996). However, institutional scheme "e" would not be preferred over scheme "d" due to its large inequalities in the distribution of index goods that hurts the least advantaged group (Falkenberg, 1996). In institutional scheme "f", the first group would not even be able to sustain life itself due to the fact that curve "f" is below the line "a". Thus, the panel members would not prefer this institutional scheme over any other schemes. Falkenberg (1996) stated that institutional scheme "f" *"may in fact be the institutional scheme in effect today"* (p. 170), i.e. a large part of the world population is worst off when it comes to distribution of index goods, while only a small group of people are better off through this institutional scheme.

9.3 Basic Human Rights (direct from doc, consider revise)

According to the United Nations Human Rights (1996-2012), *"Human rights are rights inherent to all human beings, whatever our nationality, place of residence, sex, national or ethnic origin, colour, religion, language, or any other status"* (cited from the 1. and 2. line). This brings up one of Falkenberg's principles for the "GOOD", which is called the "equality of moral worth" (Falkenberg, 1996). This means that all people should have equal human rights without any form of discrimination as mentioned above. Unfortunately, there are still

some institutions which may violate the basic human rights by permitting harmful practices. Sharma (2008) defined human rights as follows; *"rights which are essential to live as human beings – basic standards without which people cannot survive and develop in dignity. They are inherent to the human person, inalienable and universal"* (p. 3). The definition provided by Sharma (2008) also reminds lot to Falkenberg's (1996) third principle for "the good". It also brings up the first principle for "the good", which is about survival. Thus, human rights are rights that are important to survival as well.

According to UNDP (2000), there are currently *"some three quarters of the world lives under democratic regimes"* (p. 1). Furthermore, it is argued that the elimination of discrimination, e.g. by gender, race, religion, ethnicity, has been in great progress (UNDP, 2000). The right to a proper education and basic health care have also been improved since the year of 1900, where over half of the world's population was living under the colonial rule, and the right to vote was only possessed by a handful of people (UNDP, 2000). Since then major accomplishments has been recognized nationally and internationally both in terms of human rights and human development.

The Universal Declaration of Human Rights was adopted back in 1948 and human rights were for the first time been acknowledged not as a matter of choice but as a global responsibility as well as an obligation that must be fulfilled (UNDP, 2000). Numerous of countries, both rich and poor, have ratified *"all but one of the six core covenants and conventions on civil, political, economic, social and cultural rights"* (UNDP, 2000, p. 1). These have been approved by approximately 140 countries. When it comes to the seven core labor rights conventions, only one has been disapproved whereas the rest of them have been approved by 125 countries (UNDP, 2000). Many countries now *"call for a more visionary commitment to building the institutions, laws and enabling economic environment to secure fundamental freedoms for all: all human rights, for all people in all countries"* (UNDP, 2000, p. 1). In order to achieve and promote freedom to all people in all countries, one may have to include both new and old actors, such as individuals, non-governmental organizations, governments, policy-makers. With their resources let alone know-how and networking, the potential is of course huge. However, according to UNDP (2000), there is still a long way to go.

In a world without any form of basic or universal human rights, there may be nothing to stand against harmful worldwide issues, such as slavery, apartheid, nuclear activities, genocide, child labor, forced labor, racism, torture, discrimination of women, terrorism, hunger,

malnutrition, poverty, and the lack of protection of civilians in armed conflicts etc. Thus, the freedom, dignity and human rights of the world population may have been deprived. It is therefore important to protect the framework of human rights in order to prevent these devastating and not least immoral issues from occurring in our civilized societies. However, in some cases in today's world issues such as genocide in Darfur, human rights cannot reach those who need it the most due to the disagreements (e.g. lack of proof) in the committee of the United Nations.

There are different suggestions of principles of human rights from well-known historical institutional frameworks such as the US Constitution (1789), the French declaration of human rights (1789) and the UN declaration on human rights (1948). In order to make these more adaptable in a perspective more useful for multinational corporations, Thomas Donaldson (1989, in Falkenberg, 2004) has developed a model of rights and duties based on Shue's (1980, in Falkenberg, 2004) concept (Falkenberg, 2004, p. 26).

According to Falkenberg (2004), the duties of a firm in Donaldson's model *"can be divided into three classes"* (p. 26). These classes as shown in the model include (Donaldson, 1989, p 81-86 as cited in Falkenberg, 2004, p. 26):

a) *"A firm shall not deprive anyone of certain rights."*
b) *"For a more limited set of rights, the firm should help protect people from having these rights deprived."*
c) *"We may have a duty to aid the deprived."*

Donaldson argues that multinational corporations have a minimum set of duties at level "a" above to not deprive anyone of certain rights such as freedom of physical movement, ownership of property, freedom from torture, a fair trial, non-discrimination, basic education etc. (Donaldson, 1989 in Falkenberg, 2004). Furthermore, when there are limited set of rights at level "b", i.e. also limited set of duties, then the multinational corporations in collaboration with the local authority should contribute to help protect people's remaining rights (Donaldson, 1989, in Falkenberg, 2004, p. 26), i.e. such as freedom of speech and association, political participation, physical security etc. The multinational corporations do not have any clearly duties at the last level, "c", but, however, "we may have a duty to aid the deprived" (Donaldson, 1989, in Falkenberg, 2004, p. 26). This means that they may have to aid the local community to promote survival by helping them to improve health services or build schools and hospitals. When there seems to be a conflict between economic profit maximization of

multinational companies and local peoples' basic human rights, then the concern for basic human rights must always override business related activities and concerns.

9.4 Utilitarianism

Falkenberg (2010b) defines utility as follows: *"something that you appreciate, something that you value, something that you like; a pleasure or a benefit"* (p. 1). Velasquez (2006) defines utility as an *"inclusive term used to refer to any net benefits produced by an action"* (p. 61). Utilitarianism is a principle of morality that not only searches for maximized happiness for one person, a group or a nation, but for the greatest number of people at the micro, mezzo and macro levels, i.e. for *"the whole sentient creation"* (Falkenberg, 2010b, p. 1). By maximizing happiness for all people means that all pain and misery will also be minimized or removed. Utilitarianism explains how pleasure and pain could be measured *"in order to calculate happiness*" (Falkenberg, 1998, p. 5). Moreover, these explanations also include human behavior and people's pursuit of their own interests as well as political recommendations (Falkenberg, 1998). According to Falkenberg (2010b), utilitarianism *"is a consequentialist school of ethics focusing not on the motivation or the acts themselves, but on the outcome"* (p. 1). Thus, this means that utilitarianism favors the result of the actions that produces the highest possible benefits regardless of how they are produced, for instance by corruption, lies, manipulation, child labor or by other means which may be regarded as unethical. As long as happiness and flourishing are maximized for the whole sentient creation, the methods that are used to achieve these results may seem to be irrelevant in the utilitarian reasoning.

From a utilitarian perspective, John Stuart Mill suggests that *"…actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness. By happiness is intended pleasure, and the absence of pain; by unhappiness, pain and the privation of pleasure"* (Mill, 1863-1871, pp 1119 as cited in Falkenberg, 1998, p. 5). Falkenberg (1998) argued that the utilitarian guidelines and reasoning may seem to be narrow, individualistic and short term. This is due to the fact that the utilitarian reasoning favors actions that promote the most happiness over those actions that produce less (Falkenberg, 1998). Thus, individuals may be encouraged to work to promote their own short term interests. However, Mill further explains utilitarianism as follows; *"…for that standard is not the agent's own greatest happiness, but the greatest happiness altogether…(happiness) secured to all mankind; and not for them only, but so far as the nature of things admits, to the whole sentient creation"* (Mill, 1863-1871, pp. 1122-1123, as cited in Falkenberg, 1998, p. 5). This means that utilitarianism does not only concern maximum happiness for one particular

individual or group, but also for non-human beings such as animals, plants and trees (i.e. the environment) (Falkenberg, 1998). Thus, the greatest happiness principle promotes the greatest happiness for the whole sentient creation, as Mill has expressed it. In theory, one could say that one may decide to remove all basic freedom, human rights and justice from all people if the result of this action would be to achieve greater happiness for the whole sentient creation (Falkenberg, 1998; Velasquez, 2006). However, utilitarianism will then be in conflict with basic human rights and the principle of equality. Falkenberg (1998) and Velasquez (2006) suggest that whenever such conflict may occur, then basic human rights and justice should in many cases trump the utilitarian reasoning. Falkenberg (2004) argues further that *"it is not right to abandon the equal rights principles even if one may profit from it"* (p. 25).

The principle of the greatest happiness from the utilitarian reasoning may lead to a cost-benefit analysis (Falkenberg, 1998). Velasquez (2006) defines a cost-benefit analysis as an *"analysis used to determine the desirability of investing in a project (such as dam, factory, or public park) by figuring whether its present and future economic benefits outweigh its present and future economic costs"* (p. 63). To put it in another way, the cost-benefit analysis may be used to measure or calculate happiness altogether in terms of economic benefits. Hence, utilitarian reasoning is based on the benefits and costs that are produced through an action or a policy, i.e. *"action or policy that maximizes benefits (or minimizes costs)"* (Velasquez, 2006, p. 61). Velasquez (2006) argues that *"the benefits of an action may include any desirable goods (pleasure, health, lives, satisfactions, knowledge, happiness) produced by the action, and costs may include any of its undesirable evils (pain […], sickness, death, dissatisfaction, ignorance, unhappiness)"* (p. 61). According to Falkenberg (1998), the cost/benefit analysis is only useful to make ease of *"decisions related to the efficient use of resources, but not when applied to issues of equity (justice and rights)"* (p. 6). In order to improve productivity and the overall material well-being, efficiency is needed (Falkenberg, 1998). Efficiency may include purchasing power, *"efficient use of raw materials in a production process or the degree to which a small investment can produce a great return for the owners"* (Falkenberg, 1998, p. 6). Falkenberg (1998) suggests that to measure quality of life, productivity is relevant. In the pursuit of efficiency one may ensure an efficient economy. Thus, this may contribute to provide a country and its citizens with enhanced education, schools, better hospitals, improved health services, etc. (Falkenberg, 1998). Falkenberg (1998) argues that *"efficiency and equity are in this respect mutually supportive"* (p. 6). There is a need for both efficiency and equity, i.e. rights and justice. However, sometimes they are in conflict with

each other. Thus, there are times when one must choose between either efficiency or equity in favor of the other, i.e. a trade-off between the two (Falkenberg, 1998).

In the pursuit of our own happiness and material well-being, children are in some cases being used to increase efficiency in the production of goods (Falkenberg, 1998). This is for the reason that they provide cheap labor to the production process. However, in doing so, Falkenberg (1998) argues that the basic rights and principles of justice may have been violated as some people are in pursuit of their own material well-being. Thus, if such circumstances do occur, where efficiency and equity are in conflict, one may have to promote rights and justice (equity) rather than following the utilitarian reasoning (efficiency). There is nothing wrong to achieve efficiency and improve our own material well-being as long as the human rights and justice are not violated (Falkenberg, 1998). According to Falkenberg (1998), *"narrow utilitarian based measurements of material well being are insufficient indicators of quality of life"* (p. 7). Thus, as far as quality of life in a country is concerned, material well-being measured by e.g. GNP per capita, or by how many computers, mobile telephones, mp3-players or TV sets that are owned by its people proves to be insufficient and at times misleading. Falkenberg (1998) argues that *"if half of the population in a country are without property, elementary justice and/or basic rights, and work for the other half of the population, one may score relatively high on average material well being, while the bottom half may not experience any quality at all"* (p. 7).

Furthermore, Falkenberg (2010b) suggests that political systems could also be seen in an utilitarian perspective. Assume that all people are allowed to vote for any candidate they wish to vote for in a fair election. Then people would most likely vote for the candidate that they perceive to be the best candidate to promote their well-being the most (Falkenberg, 2010b). According to Falkenberg (2010b), *"a key ingredient in our well-being is food, and if we look at countries that have experienced famine, it does not often occur in democracies"* (p. 2). If the politicians want to be reelected by the people, they would have to work to promote, for instance, food security. In the view of economics, the cost would be the votes of the people. By trading in the votes, they will presumably gain the benefits from the politicians. On the other hand, there is also a cost associated with the set of politics that the politicians represent. This cost will be in the form of realizing the benefits that are promised. In turn, these politicians will be reelected by the people. The benefit of being reelected is that they stay in power which is for their own interests.

9.5 Responsibility

It is not always easy for a multinational corporation that operates in a less developed country to know when they are responsible for their activities. In this regard, it may be unreasonable to think that an organization is responsible for all of the problems that they encounter when operating abroad. Thus, Falkenberg (2004) suggests that individuals and organizations are responsible for their acts which they have committed or omitted. According to Tofler (1986, in Falkenberg, 2004) , individuals and organizations may be responsible if they are able or capable to respond to a problem, and for what they *"have caused to happen"* (Falkenberg, 2004, p. 27). Furthermore, if MNCs find themselves in situations where they are capable to respond to a problem but for whatever reason choose to ignore and not to act, then they are considered responsible for the problem (Falkenberg, 2004). What is meant by the capability to respond to a problem is that multinational corporations may have the power or the *"ability to change or influence peoples' behavior"* (Falkenberg, 2010a, p. 2) towards a given problem. In an article titled 'Business's Environmental Responsibility', Des Jardins (1999) purposed that *"business has a responsibility not to intentionally or negligently cause harm to others. When such harms do occur, business has a responsibility to compensate individuals who are harmed by its intentional or neglect acts"* (Des Jardins, 1999, as cited in Eweje, 2006, p. 27).

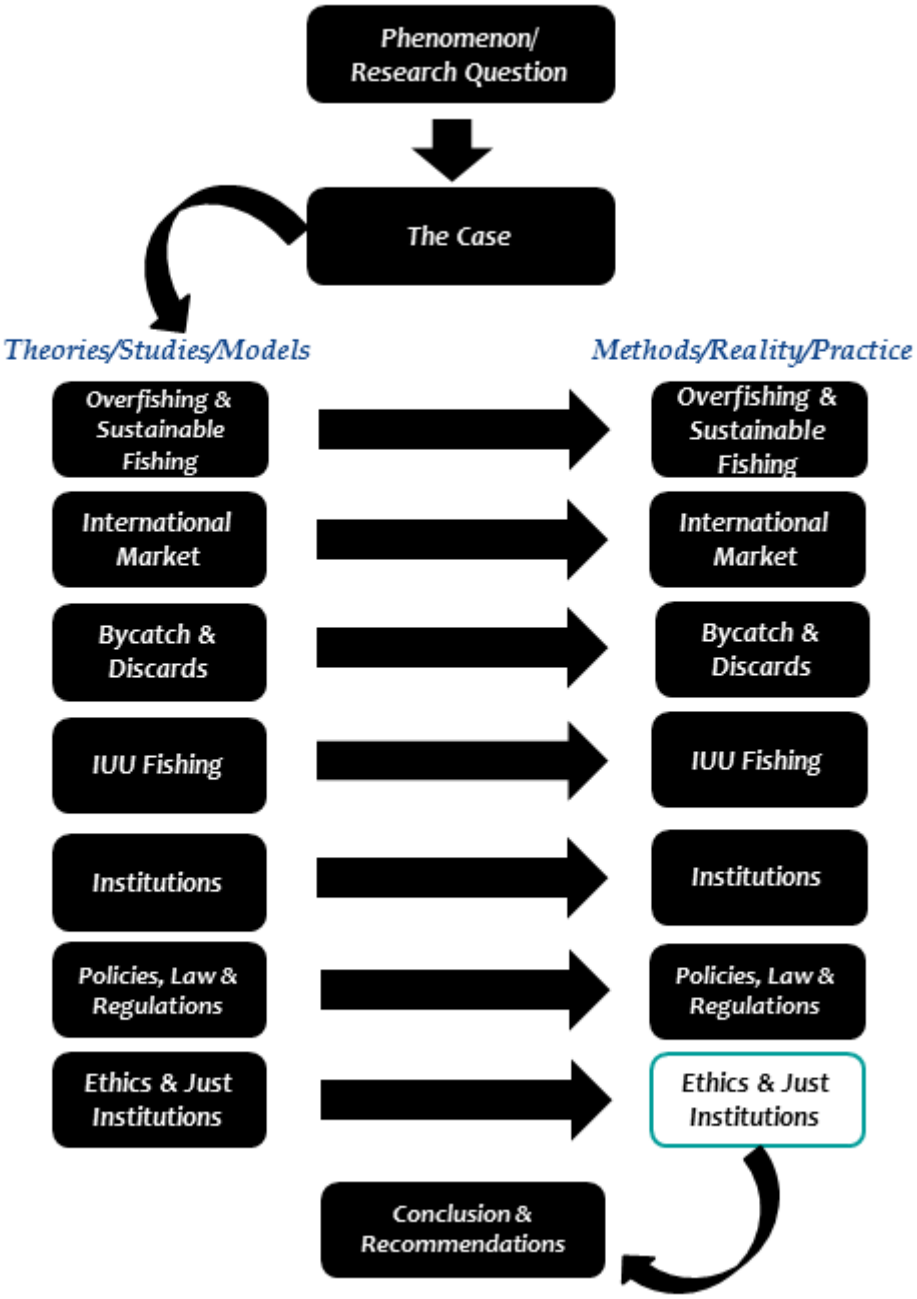
In addition, individuals and organizations are responsible or *"under legal obligations to follow the law"* (Falkenberg, 2004, p. 27). However, in some least developed countries the laws and regulations may fail to adequately protect the people and/or the environment and, thus, may not promote the "GOOD" which means that the institutions are "unjust", i.e. organizational activities may be legal but it does not mean that they are ethical. Consider a business contract between a MNC and a less developed country where it includes unethical statements, e.g. child labor or poor working conditions. This may be legal in some less developed country, but it is not considered as an ethical act. Therefore, it may be a moral obligation (i.e. morally responsible) for an organization which operates in an inadequate institution to search to change these contract statements, if they have the power or the capability to do so.

Similar to Donaldson (1989), DeGeorge (1993) proposes guiding principles for how MNCs should act abroad when they operate in countries with inadequate institutions. Unlike Donaldson, the principles that are proposed by DeGeorge are based on integrity, i.e. the 'principles of integrity'. DeGeorge believes that his seven guiding principles may be useful for MNCs that operate in countries with inadequate institutions. These include:

- *MNC's should do no intentional direct harm*
- *MNC's should produce more good than harm for the host country*
- *MNC's should contribute by their activity to the host country's development*
- *MNC's should respect the human rights of their employees*
- *To the extent that local culture does not violate ethical norms, MNC's should respect the local culture and work with it and not against it*
- *MNC's should pay their fair share of taxes*
- *MNC's should cooperate with the local government in developing and enforcing just background institutions.*

(De George, 1993, p. 45-56, as cited in Falkenberg, 2004, p. 27)

Falkenberg (2004) argues that the principles or perspectives from Donaldson and DeGeorge *"are little less demanding on the MNC's than the what would be the case if one were to require that institutions be just promoters of the three principles of the Good"* (p. 27).


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Conclusion & Recommendations

9.6 Analysis of the EU-Senegal Case

9.6.1 Just Institutions

The Senegalese waters are currently overfished. This means that most fish stocks are either overexploited or depleted. Foreign fleets of industrial trawlers are responsible for overfishing the fish stocks, which have led to more suffering for people that are already suffer from poverty and food crisis. In turn, there is a reduced quality of life for the local coastal population of Senegal. The foreign fleets of industrial trawlers originate from the European Union, Russia, China and Japan. The coastal waters of Senegal is overfished, the few fish catches are exported, the price for previously considered low-valued species are increasing, and competition between industrial and small-scale fisheries are fierce. In addition, the Senegal is struggling with domestic or national problems such as food security and poverty. Face with these domestic issues, life is difficult to sustain. Thus, in order to survive, many fishermen are forced to illegally migrate to Europe in search for a better life. Not every voyage to Europe ended in a successful way. In 2007, 31,000 West Africans risk their lives to migrate to Europe, and as much as 6,000 people either died or disappeared at sea. Those who got to Europe were arrested and deported back to their home countries with a substantial fine, which many find it difficult to pay due to poverty.

While the Senegalese people are suffering from poverty and some are dying at sea, the Senegalese government is selling fishing licenses to foreign fishing nations in order for industrial trawlers to gain access to the Senegalese waters and make matters even worse for the population. Many of the industrial fishing fleets originate from the European Union. These fishing fleets are taken away what is most important for the Senegalese population to survive. Basically, they are catching fish and profit from it at the expense of other people's lives, so that people in the Western world could have fish to eat. The European Union even went as far as to refuse having any responsibilities for what is happening to the population living in Senegal.

Do the European Union and other fishing nations that operate in West African waters act in accordance to what have been defined as "just" institutions? Are they promoting the principles for "the good"? Clearly, the answer to these questions is 'no'. Given that this discussion is based on John Rawls' theory of "the original position under the veil of ignorance", the panel members would most likely disagree with the actions made by the EU and other fishing nations. In this particular case, the EU, as an institution, is not promoting

what is considering "the good", and, therefore, they are not "just" or fair. Actions made by these huge fishing nations are not accordingly to just institutions. Hence, they have failed to promote "the good" and thus they are not ethical.

9.6.2 Three Basic Principles for "The Good"

In this section, the three basic principles for "the good" are going to be used to test whether institutions are just or unjust. It may not be sufficient to rely only on one single theory from John Rawls, i.e. theory of "the original position under the veil of ignorance". Therefore, combining the previous theoretical framework with Falkenberg's (1996) three basic principles for "the good" could be essential to test institutions for whether they are just or unjust. By testing institutions through the principles for "the good", it is possible to see whether the EU promotes these principles or not.

If the institutions do promote these three principles, then they are just. If they fail to promote these principles, then they are unjust. Adequate institutions are just institutions which will promote flourishing lives and quality of life in terms of justice (i.e. the three principles for the good), basic human rights and utilitarianism (i.e. maximized happiness). Conversely, inadequate institutions will fail to promote flourishing lives and all the above mentioned variables.

9.6.2.1 Survival and Hand-Over

The minimum requirements for survival is, according to Falkenberg (1996), nutrition, health and a set of basic survival tools. Yet, there is a huge problem with overfishing in the waters of West Africa. This problem not only brings harm to the environment, but it also prevents the population from proper nutrition and good health. In this case, the EU has contributed to overexploit the West African coastal states' natural resources. Governments in these coastal states may also play a major role in depleting fish resources in their own waters. The governments in Senegal and Mauritania are most likely driven by corruption (MRAG, 2005a). By allowing other fishing nations to access their waters for license fees, the governments in these countries may also have contributed to bring harm to their own people. Thus, instead of promoting survival in the current generation, they bring more harm to a community and a country that are already in a bad shape. Fish is a source of income for the Senegalese population, but more importantly it is also a source of food. Without a sufficient source of food, the Senegalese fishermen are forced to migrate to Europe in hope to find a better life and a brighter future. However, thousands of people die at sea in their voyage to Europe. The European Union has contributed with financial compensation to Senegal. However,

considering corruption in the Senegalese government, the people would never benefit from the financial aid. Thus, it appears that the EU tries to cover up the media's and the NGO's attention on the issue by giving the Senegalese government money.

FAO (2001) considers the following five ethical values to be among the most important ethical values related to food and agriculture: (1) The value of food; (2) The value of enhanced well-being; (3) The value human health; (4) The value of natural resources; and (5) The value of nature. Food is one of the most basic forms of needs for human beings along with clothing, shelter, water and sleep. These primary or basic needs are at the most fundamental level in which are required to be met in order for any human beings to survive. This is shown by the well-known Maslow's hierarchy of needs. Thus, the survival of human beings is undoubtedly dependent on food, i.e. without food human beings will not be able to survive or even exist. Thus, fish and fish products produced and distributed from capture- and inland fisheries as well as from aquaculture are one of the major contributions made for the survival of human beings. This leads back to the introduction of the 'Three Basic Principles' suggested by Falkenberg (1996), particularly the principle of 'survival and hand-over'.

The first principle for "the good" also takes hand-over into consideration. Basically, the point is to hand over the planet earth to the next generation where it should be in an improved state. This means that one should ensure survival for future generations by handing over the world in a better state. However, the issue of overfishing is threatening the world's natural resources and one of the most important sources of protein, which many people are dependent on. Thus, instead of handing over the world in an improved state to the next generation, it appears that this generation is rather handing over the world in a worse state. A world where major fish stocks are either overexploited or depleted, and where it may sustain less rather than more people, i.e. given that fish is an important source of food for current and future generations. Facing the issue of overfishing one may ask; "What happened to all the fish in the sea?" The answer to the question is; the current and previous generations have eaten them. Thus, it is evident that this is a case of overconsumption as well.

What is done in the current generation will ultimately affect the next. However, it seems that the EU has ignored the consequences of their actions which consequently may affect future generations as well as the current generation. The world should be able to sustain more rather than fewer people, but overexploited marine resources in the West African waters, e.g. in Senegal, have led to losses of human lives among people who are most dependent on these

resources to provide for their immediate families and to survive. This is particularly concerning the case of EU-Senegal fisheries access agreements. Some people in Senegal are forced to risk their lives by attempting to migrate into Europe due to the lack of resources and means to survive, and the odds at the dangerous sea are not always in their favor. It seems that the current circumstances do not allow the world to sustain more people, and the both the coastal state and the EU member states fail to promote principle of survival. Thus, the institutions are unjust.

The case of EU-Senegal is a great example of the weaknesses in our institutional order. It fails to meet the minimum requirement for survival and the responsibilities to hand over the world to future generations in an improved state are ignored. Whether there will be sufficient resources available for future generations is decided by the current generation, and it appears that this generation fails to do so. There will hardly be enough resources in the future, e.g. when considering the increase of world population and the current trend of overexploitation of fish resources. Moreover, there is a general lack of food security in e.g. the West African countries.

As far as the level of consumption and the increasing demand for fish and fish products are concerned, one should be aware of how much is being consumed and the utilization of resources. For instance, when it comes to bycatch and discards, it seems that a great proportion of the catch is being discarded rather than being utilized, i.e. given that the proportion of the catch has low commercial value. Clearly, the search for profit outweighs the potential future consequences of the given economic activities. Fish resources are excessively consumed, and the consequences of this will carry on to future generations if nothing drastically is going to be done. In turn, overfishing may potentially prevent survival of future generations. Furthermore, the issue of overfishing does not only influence developing countries, such as those in West Africa, but it may also affect the EU member states. Unsustainable exploitation of fish resources will eventually lead to a significantly decrease in fish stocks, which in turn may lead to unemployment in the EU member states as well. It seems that the consequences of overfishing are not fully recognized by the general public and the consumers. Thus, it may appear that as long as the negative consequences do not in general affect the world population here and now, then it is alright to carry on the exploitation of fish stocks. The problem of overfishing may not be clear until it is too late, and our future generations may have to deal with the problems that this generation has failed to prevent.

Thus, it is crucial to seek and change those institutions that are unjust to the point where the principle of survival is promoted.

On top of the excessive overexploitation of fish stocks from the EU and the Senegal's corrupted government, IUU fishing also contributes to overfish the West African waters. This is adding even more pressure to the already overfished fish stocks in the West African waters. The ones that are going to suffer are those who are most dependent on the fish resources in order to survive, i.e. the local community and the fishermen. The amount of fish lost to IUU fishing is substantial as the annual loss is between 11 and 26 million tonnes (Agnew, et al., 2009). This amount of losses is valued between $10 billion and $23.5 billion (Agnew, et al., 2009). In the case of West-Africa, the amount of losses due to IUU fishing equals a quarter of the total fisheries export in the whole continent of Africa, and this amount of losses is valued at US$1 billion annually (High Seas Task Force, 2006). Furthermore, there is a significant correlation between the level of illegal fishing and the given governance (Agnew, et al., 2009). What may be even worse is that the Senegalese government is corrupted, which means that there may be little or close to none incentives to combat IUU fishing. It may be the case that they are willing to adopt the different measures to combat IUU fishing, but, however, it does not mean that combating against IUU fishing is very effective in practice. Thus, it appears that Senegal and other West African countries may have a weak governance in which may lead to a higher vulnerability towards IUU fishing activities. In turn, this will influence the fishermen and their coastal communities. Furthermore, fish stocks are pressured and the environment damaged, which means that the survival for the coastal communities may be threatened. This is due to the fact that food security is threatened. This means that IUU fishing activities are undermining the first principle for "the good", i.e. survival and hand-over.

As far as the issue of bycatch and discards are concerned, it may also contribute to undermine the principle of survival. While Senegal is dealing with issues, such as scarce fish resources and reduced food security, many domestic and foreign industrial fishing fleets are discarding fishes of low commercial values for those of high commercial values. Clearly, such practices are undermining the principle of survival, since they contribute to serve as a hindrance towards proper nutrition and good health (i.e. the minimum requirements for survival), i.e. by throwing away some of the resources while the local communities are in dire need for food. By looking at the problem in this way, it seems that the practice of discarding is indeed a waste of resources. This is especially the case as there are people in the world who need these resources to survive. What could have been done in this case is to find different ways to better

utilize these resources, e.g. retain the catch despite its low commercial value and sell it in the local market at a reasonable price. However, it seems that certain regulatory measures, such as Minimum Landing Size (MLS) and Total Allowable Catch (TAC), are to some degree preventing this to happen. At the same time, regulatory measures are for preventing against overfishing of fish stocks and fishing of juveniles. In order to follow the rules, laws and regulations, some fishers may discard some proportions of the catch to avoid financial consequences and at the same time stay inside the pre-determined catch limit. Instead of discarding fish for the sake of avoiding some regulatory measures or for the reasons that the catch has a low commercial value, what is more important is to promote survival for the least advantaged groups. In order to promote survival, the minimum requirements for survival are to be met and those are e.g. nutrition and health. Thus, discarding of any edible catch is basically violating the principle of survival and hand-over. This is for the reason that the practice of discarding is destroying fish resources. At the same time, it is preventing other least advantaged groups, which are dependent of fish resources to survive, from utilizing the proportion of the catch in which are discarded. There are may be people who could make better use of the discarded catch, and the discarded catch could have been a contribution to aid countries that are struggling with issues of food security, i.e. under the assumption that all discarded fish are edible.

9.6.2.2 Equal Moral Standing

The second principle of "the good" is equal moral standing. In this case of the EU-Senegal fisheries access agreements, the question is not the relationship between human beings, but the relationship between human beings and other species should be considered. Naturally, human beings will put themselves at a higher moral standing relatively to other species, as far as the principle of moral standing of humans and other species are concerned. In this regard, other species, e.g. animals and plants, will be put in a lower moral standing than human beings. In the case of overfishing, it appears that fish and other marine animals are given a lower moral standing than human beings. If other species is granted a higher moral standing than human beings, then overfishing would not be a problem. Thus, the first principle of "the good" may be violated, i.e. the minimum requirements for survival and hand-over the world in an improved state are not promoted when the sea is overfished.

As the sea is overfished, less fish resources are available, which in turn cannot provide sufficient nutrition and good health to the world population as a whole. There will be significant less food to provide for the world population. Thus, sustainable development is not

promoted. When sustainable development is not promoted, then the world may sustain less rather than more people. This is because there is not enough food or nutrition (i.e. one of the minimum requirements for survival) in order to sustain people. Thus, as the world population increases, the survival of the human species may be more dependent on other species (e.g. animals and plants) as food and a way to stay alive. In other words, if other species, such as fish, survive, then humans may also have a better chance to survive. Therefore, it is important to seek a balance between human beings and the other different species in order to promote survival. If survival of other fellow species is essential to secure the survival of human kind, then it is important to ensure survival of other species and the environment in which they are dependent on to survive. This also means that it is crucial to promote sustainable development. Overfishing is per definition undermining sustainable development, which in turns threaten the survival of human beings as well. According to Falkenberg (1996), *"the relative moral standing given to fellow species would probably be higher than that which is typical today"* (p. 168). It appears that the EU and other major fishing nations fail to ensure survival of fish species by overfishing the sea. This means that survival of future generations is no doubt threatened by overfishing.

Fish is a source of food. If fish becomes extinct due to overfishing, then the survival of human beings is indeed threatened. For human beings to survive, they need food. Thus, this means that in order to ensure survival for current and future generations of human beings, they have to let other species to survive as well. Humans and other species are interdependent of each other in order to survive. In order to hand-over the world in an improved state rather than a worse state, and promote survival to future generations, current generation and future generations need to seek and change the current institutional arrangement to another set of institution. The new set of institutions should be able to recognize the interdependency *"between our own survival and the survival of other species"* (Falkenberg, 1996, p. 168). This is given that the institutional arrangement that needs to be changed governs all political and economic decisions (Falkenberg, 1996). Without recognizing the interdependency between the survival of human beings and the survival of other species, the gravity of the problem of overfishing is not recognized. The consequences at an extreme case are that future generations will not have the opportunity to further exploit fish resources in order to feed new people born into this world. There will simply be no fish left to eat.

9.6.2.3 Maxi-Min for Index Goods

The max-min principle is the final principle for "the good". Basically, the principle is based on distribution of index goods (e.g. income, wealth, rights). In today's society, uneven or unequal distribution of index goods often occurs. In circumstances where unequal distribution of index goods occurs, then the benefits should be maximized to the least advantaged groups. In this way, the least advantaged groups will be supported. This is essential in the max-min principle. It is evident that, in the case of EU-Senegal, the least advantage groups are the local fishermen fishing in their pirogues. Thus, according to the max-min principle, the benefits gained from fishing activities in the EEZ of Senegal should be maximized for the groups of local fishermen.

Basically, the corrupted Senegalese government is violating the max-min principle. They are enriching a small group (e.g. Europe) and leave the majority of its own people in poverty, i.e. worst off. The government encourages foreign fishing nations to fish in their waters, which means that they distribute index goods in an unequal manner in favor of the group that has the most advantage (e.g. the EU and the Senegalese government).

However, in reality, the max-min principle is violated. Instead of fishing a reasonable and sustainable amount of fish from the Senegalese waters, the EU overexploits and depletes the fish stocks in Senegal. Thus, they prevent the local fishermen not only from catching fish in their own waters, but the EU also contributes to prevent them from surviving. Basically, the EU is reaping the profits by exploiting the fish stocks in Senegal at the expense of its local fishermen. These fishermen are poor and they have to catch their own fish in order to survive. Not only does fish a source of food to these fishermen, but fish is also a source of income. Furthermore, most of the people cannot afford to by other types of meat, because there are no fish left to catch and to sell. Thus, the sources of protein available for these fishermen are very limited. As fish stocks are decreased, life itself may prove to be difficult to sustain.

Furthermore, the Senegalese government did not make an effort to aid its own population out of a food crisis. Instead, they are selling fishing license to other foreign fishing nations to fish in their own waters. By doing so, they also contribute to prevent their own people from surviving. Thus, both the Senegalese government and foreign fishing nations are undermining the max-min principle. In this regard, the distribution of such goods may not always seem 'fair'. According to FAO (2001), it is recognized in both formal ethical systems and ethical practice that every single person in the world should have the rights to food. This means that

it is necessary in every society to provide food to those who are not able or capable to provide it themselves for whatever reason, e.g. those who can ill-afford to provide less than three meals a day in a family. FAO (2001) claims that failing in doing so is considered injustice or an unethical act. This point of view bears similarities to Falkenberg's (1996) third basic principle for 'the Good', which is called the 'max-min principle'. According to Falkenberg (1996), one has to seek and change the current institutions in favor of those that will *"maximize the benefits of the least advantaged group"* (p. 169).

Overall, the EU and the Senegalese government have failed the test. The EU operates in a less developed country in which evidently has inadequate institutions. The government is unable to adequately protect its own people as well as the fish stocks and the environment from harm. The institutions are therefore unjust and it is encouraged that they have to seek to promote a different set of institutions that are just and act accordingly.

9.7 Basic Human Rights

As pointed out in previous sections, small-scale fisheries are no doubt important to secure the human rights of fishworkers and the fishing community. The importance of small-scale fisheries is in several aspects. Sharma (2008) suggests that in order to support the communities, one may also secure the human rights in these communities. In turn, this may also serve as a countermeasure against harmful developments, in which may undermine or deprive the fishing community of their rights to *"a decent life and livelihood, and in retaining their cultural diversity and identity"* (Sharma, 2008, p. 5).

There was a time where the coastal land and its resources were primarily used by fisheries (Sharma, 2008). However, in the past few decades, the coastal lands have encountered a growing competition, which could be seen as a threat to the fishing community. These include *"the creation of special economic zones, construction of ports and harbours, industrial aquaculture, including mariculture operations, tourism, real estate development and speculation, mining and oil and gas exploration, and even conservation-related activities"* (Sharma, 2008, pp. 5-6). Other threats to the fishing community and the coastal habitats may include damming of rivers, pollution to the sea, destruction of habitats etc. (Sharma, 2008). According to Sharma (2008), the consequences of such developments may be devastating as the quality of life in the both coastal and inland fishing communities may deteriorate and the threat of eviction may also arise. Furthermore, Sharma (2008) argues that the harmful developments which threats the fishing communities may completely remove the people off

their settlements and occupational spaces. Moreover, the communities' access to different water bodies, such as the river, the sea, bays and inland water bodies, may be disrupted. According to Sharma (2008), *"losing land adjacent to fishing grounds for small-scale fishing communities is closely linked to loss of culture, identity, livelihood and dignity"* (p. 6). Thus, in order to secure the rights of small-scale fishing communities, there is a call for an *"effective management of coastal/wetland resources within a sustainable framework"* (Sharma, 2008, p. 6). In this sense, the State (the duty-bearer) needs to include policies that may promote and secure both inalienable and customary rights for the people in the fishing communities, i.e. both the coastal and inland communities (the citizens). In turn, the rights of the fishing communities' lands, which may have been used for fisheries-related activities (e.g. building boats, processing, drying fish), may be kept safe (Sharma, 2008). However, the given State (the duty bearer) is not the only part that needs to secure its people's (citizens) rights, but the communities as a whole need to participate in fisheries management programs as well. As Sharma (2008) stated it; *"It is as important that the rights of fishing communities to participate in coastal/wetland management programmes as rightsholders, and not as one among many stakeholders, is recognized"* (p. 6).

As far as the access rights to fisheries resources are concerned, the problems are continuously growing. Some of these include, for instance, fierce competition between industrial trawlers and small-scale traditional and artisanal fishermen, destructive and harmful fishing methods (e.g. dynamiting, bottom trawling), and pollution in the sea (Sharma, 2008). Thus, domestic small-scale fishermen have expressed their needs to be able to secure access rights to their own domestic fisheries resources (Sharma, 2008). In their proposal, Sharma (2008) claims that the fishworkers *"have emphasized collective, community-based access and management regimes that foster equity and sustainability, that are suited to the socio-cultural ethos of small-scale communities, and that recognize natural resources of bays, seas, rivers and inland water bodies as common heritage"* (p. 6). In this context, Sharma (2008) argues that it is important to distinguish and draw the attention towards the conflict between the small-scale fishworkers' demands of preferential access right to the fishing resources, *"and some of the current rights-based approaches to fisheries management that often promote private property rights in fisheries, to deal with the problem of 'open access'"* (p. 7). The case of Iceland provided by Mathew (2008) may have demonstrated this particular problem. In this context, two Icelandic fishermen were concerned about right-based approaches that are used in

fisheries management may have violate human rights (Mathew, 2008). This is particularly the case when it comes to the fishworkers' rights to a decent livelihood.

Even though conservation and management of marine resources are important in order to achieve sustainable fisheries in the long term, one should always first of all take into account the needs of people and the communities. Thus, small-scale fisheries should not only be viewed solely as an economic activity, but other aspects of small-scale fisheries should also be taken into account. This may include their *"unique cultures, knowledge systems, social institutions and beliefs"* (Sharma, 2008, p. 9). Sharma (2008) argues that the culture and the institutions as well as the knowledge systems are currently weakened. Thus, there is a need to adopt different measures in order to protect the rights of the fishing communities. Although, it is very important to support and secure cultural values and social norms in which are held by the fishing communities, one should be aware of and take into account that some existing values and norms may discriminate against certain individuals or groups (Sharma, 2008). In this regard, these individuals and groups may have their rights deprived. For instance, fishing communities in some countries may exclude women from important decision making processes (Sharma, 2008).

According to the CCRF from FAO, Article 6.4 states as follows; *"Conservation and management decisions for fisheries should be based on the best scientific evidence available, also taking into account traditional knowledge of the resources and their habitat, as well as relevant environmental, economic and social factors"* (FAO, 2011a, p. 15). Thus, it is necessary to consider the interaction between the fisheries and the ecosystem as well. Furthermore, Article 12.12 in the CCRF encourages States to "*investigate and document traditional fisheries knowledge and technologies, in particular those applied to small-scale fisheries, in order to assess their application to sustainable fisheries conservation, management and development"* (FAO, 2011a, p. 73).

9.8 Utilitarianism

Utilitarianism is a morality principle that seeks to maximize happiness for the whole sentient creation. This means that every single person in the world or the greatest number of people should have their happiness maximized. In order to maximize happiness, everything that is considered the opposite of happiness should be minimized, i.e. pain and misery. In the case of EU-Senegal, maximized happiness would mean that the greatest number of people in the world would have their need for fish and fish products met. The utilitarian reasoning does not

care how happiness is produced as long as it is maximized for the whole sentient creation. Thus, the utilitarian reasoning disregards, for example, corruption in the Senegalese government. Furthermore, it does not matter even though the world fish population is depleted. The methods of how to achieve happiness are irrelevant. Furthermore, it also disregards whether the methods are ethical or not. It is the outcome and the results which are relevant under the utilitarian reasoning. As argued by Falkenberg (1998), the reasoning of utilitarianism appears to be narrow, short-term and individualistic. Take for example IUU fishing. Under the utilitarian reasoning, IUU fishing may be not wrong as long as it maximizes happiness for a great number of people. The methods of how it provides fish and fish products to the world population are irrelevant. Under such reasoning, individuals, who are engage in IUU fishing activities, are encouraged to continue promoting their short-term interests.

However, utilitarianism seeks to maximize happiness for the whole sentient creation. This means that it does not only concerns happiness for human beings, but other fellow species (e.g. animals, planets and trees) are also taken into account. Thus, fish as a species should also be taken into account as happiness is maximized for the whole sentient creation, i.e. human beings as well as other fellow species. Basically, it does not matter if all basic freedom, human rights and justice is removed as long as it promotes happiness for the whole sentient creation. However, it would not be very practical in a complex world as utilitarianism may be in conflict with the principle of equality and human rights. In addition, it cannot maximize the happiness for the fish stocks concerned, since overfishing is basically threatening their survival. In this case, all fishermen in Senegal would have their basic human rights deprived. Thus, Falkenberg (1998) and Velasquez (2006) suggest that basic human rights and justice should always trump the utilitarian reasoning whenever they are in conflict. Thus, it is not right to abandon human rights and justice even when one have the possibility to profit from overfishing or from engaging in IUU fishing activities.

Clearly, the EU and other fishing nations that operate in the Senegalese waters are acting selfishly in pursuit of profit maximization. The people of Senegal are suffering while there are minimum efforts made in order to aid those in need. Even if what has been stated by the EU is the truth, they cannot reject the fact that they are fishing in the Senegalese waters and, by doing so, contribute to overfish their waters, which in turn have a negative influence on the local population. It is evident that the EU fails to promote happiness for the whole sentient creation, i.e. they rather promote the opposite of happiness which is pain and misery to the

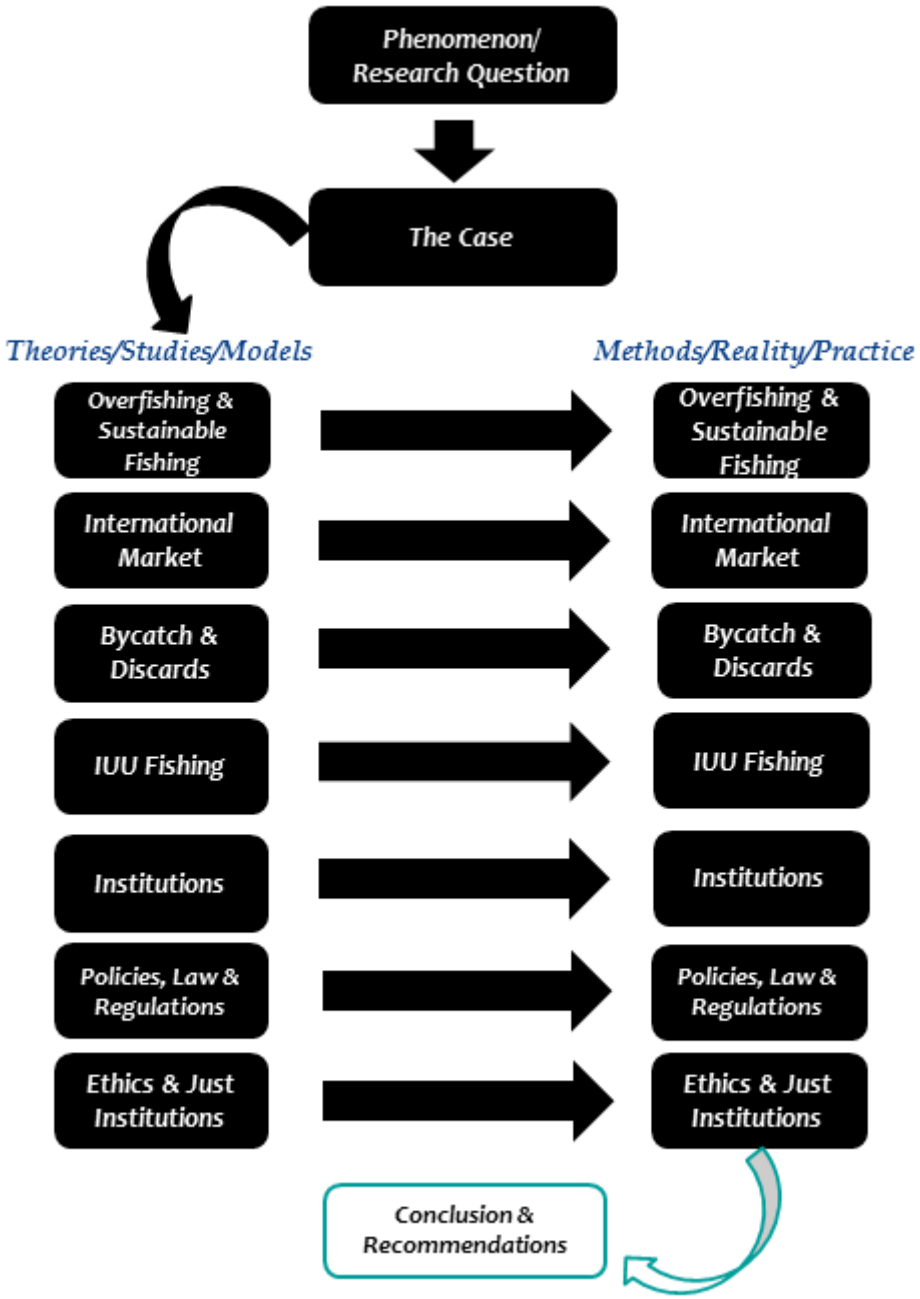
people living in Senegal as well as the fish stocks concerned. In accordance to Stuart Mills' theory of utilitarianism, the EU is wrong as they promote the reverse of happiness. Thus, it is hard to argue that the EU as well as the other fishing nations is acting accordance to the utilitarian principle. Their actions are clearly at the expense of the Senegalese people's pursuit for happiness.

9.9 Responsibility

It may prove to be difficult to know who is responsible for overfishing in the case of EU and Senegal. Whoever have caused overfishing to happen in the West-African waters are indeed responsible. This means that if the EU and other foreign fishing nations have caused overfishing in West African waters, then they are responsible for their acts. Furthermore, they are responsible if they are able or capable to respond to a problem (i.e. overfishing). This means that the EU and other foreign fishing nations as well as the Senegalese government are responsible if they are able or capable to respond to the problem of overfishing, but for whatever reason choose not to act. In the case of EU-Senegal, the EU had the capability to respond to the problem of overfishing but it appears that they rather choose to ignore it.

The EU and other fishing nations are obligated to follow the given law where they operate. However, the laws and regulations in Senegal may have failed to adequately protect the local fishermen and its fishing communities as well as the marine environment. Thus, the law and regulations in Senegal do not promote "the good", and, therefore, the institutions are unjust and inadequate. In such situations, the EU and other fishing nations may have a moral obligation to seek and change the institutions that are inadequate and unjust, i.e. given that they have the power and the ability to do so.

In the West African waters, the EU should, according to DeGeorge, do no intentional direct harm and produce more good than harm for the host country. However, it seems that they have promoted the opposite of good for the host country (Senegal) and inflict direct harm for the local fishing community by overfishing their waters, which contributes to reduce food security for the Senegalese population. The EU has, however, contributed to the host country's development by granting them financial compensation. However, the financial compensation may have not been used for the benefit of the people living in Senegal. This is due to the fact that the government is corrupted. This means that they have not made the effort to develop and enforce just institutions in the host country.


Phenomenon/ Research Question
The Case
Theories/Studies/Models
Methods/Reality/Practice
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Overfishing & Sustainable Fishing
International Market
Bycatch & Discards
IUU Fishing
Institutions
Policies, Law & Regulations
Ethics & Just Institutions
Conclusion & Recommendations

10.0 Conclusion & Recommendations

The conclusion drawn from the thesis is also the recommendations for how to promote sustainable development for fisheries.

In order to promote sustainable development for small-scale fisheries in Senegal, a "human rights approach" needs to be adopted. The main objective is to establish a cross-sectoral partnership with e.g. NGOs, MNCs and government departments to improve the well-being of people in the local fishery communities. By doing so, illiteracy, ill health, lack of access to resources, and the lack of civil and political freedoms will hopefully be removed (FAO, 2010a). Institutions should promote rights to food, rights to a good health, justice and decent working conditions for people working in small-scale fisheries in Senegal. It should be an obligation. In this way, local fishermen may have an increased incentive to participate in resource management. Overfishing will not be perceived as an immediate threat, unless these current issues are removed and the livelihoods of the fishing communities are improved. Increased responsible fishing could lead to poverty reduction and food security for Senegal and other West African countries. Thus, the human rights approach needs to be strengthened.

Economic and social sustainability require that fish stocks are productive and a healthy ecosystem. This means that fish stocks have to restore their productivity, and, in order to do this, fishing activities need to be reduced, catches have to stay within the MSY, IUU fishing has to be eliminated and bycatch and discards reduced. This means that fish catches and fish capacity need to be controlled by national, regional and international institutions. This requires that the institutions are just and fair. Furthermore, the economic and social rights of both fishers and fishworkers need to be secured, and sustainable management of marine resources should be promoted.

As far as international trade is concerned, the rules of trade should be arranged so that the fishing communities could benefit from exporting. The exported fish prices should be increased. However, this requires that international fish trade does not negatively influence the local fishing communities' rights to a proper livelihood and nutrition. This is consistent with the Code of Conduct for Responsible Fisheries (CCRF), Article 11.2.15.

As regard to the discard problem, the strategies to solve this problem are to either reduce discards or to increase the utilization of bycatch. It is difficult to recommend any specific measures to combat discards of fish due to the lack of information. Thus, the first recommendation is to collect and gather information before any management measures are

suggested. In this case, it is important to gather information about whether the bycatch is sustainable or non-sustainable. If the bycatch is sustainable, then the fish population is not at risk of being declined. However, if the bycatch is unsustainable, then it requires immediate actions. Methods to gather information on bycatch and discards are e.g. implementing observer programs. Further actions against bycatch and discards are e.g. to adopt a 'no-discard' approach. This is the most sustainable solution for fisheries management in the long-term. However, this will depend on the country under investigation. Furthermore, selective fishing gears should be promoted, and fishing activities should be based on scientific advice that is provided by experts. Small-scale fisheries are considered more selective than large-scale fisheries. Thus, in this case, small-scale fisheries are more sustainable. Moreover, technological development of fishing gears should be considered. Destructive fishing gears and non-selective bottom trawling should be prohibited.

The recommended action to combat IUU fishing is to strengthen and improve the governance. That is the law, rules and regulations. However, the UNEP (2002) suggests that existing regulations must be enforced before one may consider implementing and imposing new regulations. Moreover, it is important to improve monitoring, control and surveillance (MCS) of the sea in order to mitigate IUU fishing activities. There is also a need to implement measures to reduce the economic incentives to engage in IUU fishing. This would be in the form of increased sanctions and penalties, so that the benefit of engaging in IUU fishing is less than the cost of being caught. It is further required that an international cooperation is established across governments, organizations and consumers. For example, consumers could demand for a confirmation on where the fish products originate from. The supply chain network has to be transparent and the products need to be traceable. This would serve as a hindrance for IUU fishing products from entering the international markets. In order to eliminate the problem of transshipment, it is essential to make such acts illegal through international law and national legislations. Similarly, information about IUU fishing needs to be gathered.

The EU and other fishing nations that operate in the West African waters are no doubt facing ethical dilemmas. The trade-off between profit maximization and ethics proves to be a difficult choice for these fishing nations. Minimum efforts have been made to ensure that fishing operations are ethical, i.e. actions that promote justice, happiness and flourishing for the local communities and the population as a whole. It appears that the EU and other fishing nations that operate in the Senegalese waters have failed the test of just institutions. Thus,

these institutions are inadequate, unjust and unfair. This means that they have to seek and change current institutions in favor of those that promote adequate and just institutions. Based on the findings, the EU and other fishing nations should either exit or find ways to promote what is just.

Is there a glimpse of hope for the future of the fishing industry? There is still hope for the fishing industry to take action, but it requires that it is taken immediately. If the problem of overfishing is not yet fully recognized, then it seems that the process of promoting sustainable development may come a little bit too late. By the time major fisheries in the world are operating sustainably, there may not be much left in the ocean. Many fish species will be extinct or at best depleted to the point where it will take decades for them to replenish.

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