Feasibility Study

Eco-Labelling of Artisanal Coastal Fisheries in Senegal

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# Contents

Foreword ................................................................. 6  
Executive Summary .................................................. 8  

**CHAPTER 1**  
**Introduction**

1.1 **Eco-Labelling for Fisheries** ................................................................. 11  
   1.1.1 Background and functional Scheme of Eco-Labels ..................................11  
   1.1.2 Potential Benefits of Eco-Labeling ......................................................11  
   1.1.3 Eco-Labels for the Fishery Sector .......................................................11  
   1.1.4 Concerns on Fisheries Eco-Labeling ....................................................12  
   1.1.5 Market Perspectives for Eco-labelled Fishery Products ...........................12  

1.2 **Eco-Labeling of Fisheries in Developing Countries** ............................ 13  
   1.2.1 Importance of the Fishery Sector for the Developing World ....................13  
   1.2.2 Eco-Labeling and Fisheries’ Competitiveness .......................................13  
   1.2.3 Evaluation of Importance of Eco-Labeling ..........................................13  
   1.2.4 Constraints of Eco-Labeling ..................................................................14  
   1.2.5 Need to improve Facilitation of Eco-Labeling .......................................14  

1.3 **Objectives of the Study** .......................................................................15  

**CHAPTER 2**  
**Eco-Labeling Schemes for Fisheries**

2.1 **Overview on Eco-Labeling Schemes** .................................................... 16  
   2.1.1 The Marine Stewardship Council (MSC) ................................................16  
   2.1.2 Friend of the Sea (FOS) ........................................................................18  
   2.1.3 Naturland ...............................................................................................19  
   2.1.4 Fair-Fish ..................................................................................................20  
   2.1.5 KRAV .....................................................................................................21  
   2.1.6 Fair-Trade Labelling for Fisheries ..........................................................22  
   2.1.7 Selection of Standard for Evaluation of Feasibility ..................................22  

2.2 **MSC-Fishery Assessment and Certification Process** ............................ 23  
   2.2.1 Main Steps of MSC-Fishery Assessment Process ....................................23  
   2.2.2 The Client of MSC Fishery Certification ...............................................23  
   2.2.3 Unit of Certification ...............................................................................24  
   2.2.4 Fishery Assessments for Part of the Fish Stock ......................................25  
   2.2.5 Multi-Species Fisheries and Environmental Interactions ........................26  
   2.2.6 Pre-Assessment Procedures ...................................................................26  
   2.2.7 Full Assessment Procedures .................................................................27
CHAPTER 3
MSC Certification of Fisheries: Developing Countries' Experiences

3.1 MSC Developing World Programme (DWP) ............................................. 30
   3.1.1 Scope and Activities of Programme .............................................. 30
   3.1.2 Guidance Tool for small-scale and Data-deficient Fisheries ............... 31
   3.1.3 Experiences and Lessons learned .................................................. 31
   3.1.4 Actual Status and Outlook ............................................................ 32

3.2 WWF's Community Based Fishery Programme ...................................... 34
   3.2.1 CBC's Model of Pre-Analysis ......................................................... 34
   3.2.2 Experiences and Lessons learned .................................................. 34

CHAPTER 4
Fishery Sector of Senegal

4.1 Socio-economic Importance of Fishery .................................................. 36

4.2 Description of Fishery Sector ................................................................. 37
   4.2.1 Fishing Capacity ............................................................................ 37
   4.2.2 Production Volumes ....................................................................... 38
   4.2.3 Value of Fishery Production ............................................................ 41
   4.2.4 Enforcement and Application of national Fishery Regulations .......... 41
   4.2.5 Fisheries Agreements with the European Union ............................... 42
   4.2.6 Fisheries Agreements with other Nations ......................................... 43

4.3 Description of Senegalese Artisanal Fishery Sector ................................ 44
   4.3.1 Fishing Vessels ............................................................................... 44
   4.3.2 Authorized Fishing Devices ............................................................ 44
   4.3.3 Banned small-scale Fishing Devices and Practices ............................ 45
   4.3.4 Artisanal Fishery Activity ............................................................... 45
   4.3.5 Landing Sites approved for Export to EU ........................................ 46
   4.3.6 Infrastructure and Food-Safety Conditions ....................................... 46
   4.3.7 Status of Fishery Management ....................................................... 46
   4.3.8 EU-Approval for Export ................................................................. 47

4.4 Status of Stocks ....................................................................................... 48

4.5 Export Markets ....................................................................................... 49
   4.5.1 Development of Fish and Fishery Products Export ............................ 49
   4.5.2 Main Species for Export Markets ...................................................... 51
   4.5.3 Export Products .............................................................................. 52
   4.5.4 Export Markets ............................................................................... 52
CHAPTER 5
Evaluation of Candidate Fisheries

5.1 Selection Criteria for Candidates Fisheries

5.1.1 Species / Type of Fishery / Unit of Certification

5.1.2 Status of Fish Stocks and Sustainability of Fishery

5.1.3 Organization and Management Status of Fishery

5.1.4 Market based Considerations for Certification

5.1.5 Status of Data & Monitoring Procedures

5.1.6 Infrastructure, Food Safety & Traceability

5.1.7 Community Participation & Stakeholder Interest

5.1.8 Client of Certification

5.2 Local Expert Consultation and MSC-Workshop

5.3 Interest of Industry and Export Markets

5.3.1 Local Fish Processing and Export Industry

5.3.2 International Market Partners

CHAPTER 6
Practical Constraints and Benefits

6.1 Constraints for MSC-Certification

6.1.1 Level of Complexity: Type of Fishery & Type of Species

6.1.2 Status and Data of Stocks

6.1.3 Fishery Regulatory and Enforcement Procedures

6.1.4 Organizational Status

6.1.5 Awareness and Perception of Process of Eco-Labelling

6.2 Potential Benefits of MSC-Certification

6.2.1 Enhancement of Fishery Management, Regulation and Enforcement

6.2.2 Development of new Markets and higher Product Valorisation

6.2.3 Synergies with other Fishery-related National Programmes

CHAPTER 7
Feasibility of Eco-Labelling in Senegal

7.1 Analysis of Candidate Fisheries for MSC-Certification

7.2 Eco-Labelling according to other Certification Schemes

7.2.1 Friend of the Sea (FOS)

7.2.2 Naturland

7.2.3 Fair-Fish

7.2.4 MSC versus other Fisheries Certification Schemes

7.3 Next Steps towards Eco-Labelling in Senegal

7.3.1 Local Steering Committee for Eco-Labelling

7.3.2 Pilot Programmes and Time Line 2007 – 2010
7.3.3 Costs of Pilot Programmes .................................................................70
7.3.4 Potential Funding Partners .................................................................71

7.4 Final Conclusions .................................................................................. 71
7.5 Outlook: Fisheries Eco-Labelling in Developing Countries ..................... 72

References ................................................................................................. 74
Foreword

Throughout the world, fisheries stand out as natural resources that remain difficult to manage. Established governmental and international regulation of fisheries, improved and coordinated enforcement procedures as well as introduced multilateral fishery policy framework have not prevented substantial failures of fisheries management around the world.

New approaches to promote and improve sustainability of fisheries include the implementation of market-oriented certification schemes for fisheries. The intention of such eco-labelling initiatives is to use market power and demand as an incentive to introduce more sustainable fishery practices – by rewarding good practices through creation of better and more attractive market access.

First eco-labelling initiatives have been introduced in 2000, and to date there is an increasing number of fisheries being successfully certified – eco-labelled products are increasingly demanded and seem to be well received by the markets, especially in Europe and North America, where consumers and public opinion bodies are increasingly aware of the world’s fishery crisis.

However, the majority of today certified fisheries are located in developed countries. Tropical small scale fisheries and artisanal fisheries from developing countries are still facing multiple constraints in regard of eco-labelling – despite the fact that more than 50% of the world trade value in fish and fishery products stem from developing countries and predominantly from small-scale fisheries.

Various fishery experts and public reports have been stating that eco-labelling may only have a sporadic success in some eco-conscious niche markets in countries of the North, and that eco-labelling therefore is unlikely to be widely adopted and equally unlikely to stimulate global improvement of fisheries management.¹

Further critics contend that the cost associated with certification may be beyond the means of poor communities and that eco-labelling may generally be problematic in data-poor fisheries of many developing nations.

However, the increasing international market demand for eco-labelled products and the potential threat of market exclusion and trade barriers for non-certified fisheries - imposed by globally acting large companies aiming at sourcing only certified sustainable fishery products in the future – should not be underestimated.

Although there is no international consensus on how far eco-labelling schemes are realistically contributing to improved fisheries management – in comparison with other means such as improved national regulatory, fishery management and enforcement procedures – there are today indicators clearly showing that eco-labelling does indeed support and facilitate the implementation of effective sustainable management practises in fisheries undergoing the process of certification.²

The essential and significant contribution of export revenues from fish and fishery products to many developing countries’ national economies should make it imperative to improve and enhance the facilitation of eco-labelling initiatives for export-oriented developing countries’ fisheries.

¹ Eco-Labelling and Fisheries Management, WorldFish Center 2004
² Report by MRAG & MSC 2006
For many stakeholders within the fishery sector today the question still remains whether the principles and criteria of today’s existing and leading eco-labelling schemes such as the Marine Stewardship Council (MSC) can be realistically applied to fisheries of developing countries – or if the complexity and the resulting constraints that are inherent in most developing countries fisheries prevent such fisheries from effectively meeting the standards requirements for certification.

Ideally, certification and eco-labelling procedures serve the needs of small-scale fisheries to introduce and further develop sustainable fishing practises by participatory means – all certification schemes are voluntary and should therefore be based on local initiatives and interest of participating stakeholders.

In this regard the stringent requirements and the mandatory regulation and enforcement framework of any serious eco-labelling scheme should not primarily be regarded as a supposedly imposed further accentuation of international market actors’ procurement conditions – but as a valuable opportunity for synergies in combining national and local fishery regulation and improvement of fishery management processes with market-oriented and efficiently enforced sustainability measures.

This study - conducted on behalf of the GTZ’s Responsible Fishery Programme – shall throw light on the relevant practical aspects, specific conditions and overall implications that must be considered in the realm of eco-labelling schemes being implemented in artisanal coastal fisheries of developing countries. The study summarizes the practical lessons learned so far and outlines the recommendations and conclusions of various organisations involved in fisheries certification in developing countries.

The study does specifically examine the potential benefits and practical constraints of eco-labelling within the Senegalese artisanal fishery sector. It draws some final conclusions on the overall feasibility of fisheries certification in this Western African country heavily depending upon the fishery sector for sustaining its national economy. As the benchmark eco-labelling scheme for sustainable fisheries certification, the Marine Stewardship Council (MSC) has been chosen as subject to the study’s detailed analysis of feasibility.

The study’s outcomes and conclusions can be used as the basis and fundamental framework for the planning and conduction of pilot programmes for fisheries’ eco-labelling along the Western Africa coast and in other developing countries’ artisanal fishery sector.
Executive Summary

The Senegalese fishery sector is pre-dominated by its artisanal small-scale fishery which has been supplying 90% of total national landings of fish and seafood-products in 2006. The country’s economy heavily depends on the fishing industry which is significantly contributing to national export revenues, job opportunities, local income sources as well as protein supply for the people. The sector contributes closely to 30% of the total value of Senegalese exported goods – generating more revenues than the two next important commodities - peanuts and phosphate fertilizers - combined.

Despite the critical importance of the fishery sector for the nation’s development, Senegal has not yet achieved introduction of sustainable fisheries management within its coastal marine areas. The once abundant and vast marine resources off the Senegalese coast are today heavily over-exploited and threatened in their long term yields in regard of fish landings. Insufficient national regulatory and enforcement procedures as well as the country’s weak position in negotiating and controlling the fishing efforts exerted by foreign countries’ fleets have led to the actual crisis.

Especially the artisanal small-scale fishery sector has not been subject to any form of regulatory and enforcement measures – small-scale fishery licenses were given with no restrictions - not only for fishing in Senegalese waters, but also in the coastal zones of other Western African countries.

MSC-certification as a process is focusing on the development towards well managed fisheries – awarding good practices with more attractive and better market access. This does not implicate however that it cannot be applied to fisheries with actual deficits in management and insufficient level of sustainability – it’s the process of undertaking eco-labelling that will guide a candidate fishery towards more sustainable management.

Nevertheless, in order to realistically achieve certification by the MSC within a reasonable time frame given, there are a number of pre-requisites every applying candidate fishery should fulfil:

- The assessment of a candidate fishery will take into account the actual status of the total fish stock under consideration as being the unit of certification – this implicates that an applying client of certification must be able to manage / or safeguard the intactness of the entire population of the species to be certified.
- The organizational level, capacity and capability of a fishery will be the basic framework for the development and implementation of a fishery management.
- Regulatory and enforcement procedures should be already implemented to a certain level on which the process of eco-labelling can be further build on.
- There should be a minimal level of data available on the actual status of the fish stock under consideration – including a scientific-based estimation and analysis on the actual exploitation level of the fishery.
- In order to achieve compliance with export market conditions in regard of product quality, appropriate food-safety and hygiene measures should be in place.
Conclusions for Senegal:

The analysis of the Senegalese artisanal fishery sector in regard of the above mentioned pre-requisites for achieving MSC-certification revealed following main conclusions:

1. Due to its very versatile, multi-species / multi-gear / multi-stakeholder and geographically widely dispersed small-scale fishery, the complexity of MSC-certification is high for most exploited species.

2. The regulatory and enforcement status as well as the level of fishery management of today’s small-scale fishery sector are insufficient and must be further improved prior to applying for eco-labelling process.

3. MSC-certification for multi-species and widely dispersed small-scale fisheries is not feasible – given the actual insufficient status of regulation and enforcement.

4. There are small-scale fisheries though that have developed a sufficient organisational status and basic fishery management procedures – these fisheries can act as feasible and realistic learning and capacity building examples and pilot projects for conduction of MSC-certification programmes.

5. Pilot-programmes within already organized and basically managed fisheries should solely aim on locally restricted, single species fisheries – in order to reduce the complexity and to increase feasibility of achieving certification.

6. Proposed and further analysed candidate small-scale fisheries in Senegal do include species such as Shrimp, Lobster, Octopus and Cuttlefish. With these fisheries, eco-labelling seems feasible and shall therefore be undertaken.

General Conclusions for small-scale Developing Countries Fisheries:

Based on the results of the study in Senegal, following general conclusions on feasibility of eco-labelling of small-scale fisheries in developing countries can be drawn:

1. Feasibility of eco-labelling primarily depends on the nature and type of species chosen for certification, on the type and organisational level of the candidate fishery, on the actual status of species stock as well as on the level and reliability of data on stocks available.

2. MSC-certification is especially feasible for locally distinct and species specific fisheries.

3. Multi-species fisheries and fisheries exploiting species with widely dispersed distribution patterns significantly increase the level of complexity for fishery assessment procedures and therefore reduce practical feasibility of eco-labelling.

4. The same applies to migratory and highly migratory species.

5. The organisational level of a candidate fishery is a key-prerequisite of fishery management, and therefore also for eco-labelling.

6. The level and reliability of data available on actual stocks is essential for assessment of candidate fisheries and the evaluation of its status of sustainability. For data-deficient fisheries, the MSC provides a specific guidance tool to facilitate fisheries assessment by alternative means.

7. The cost involved in the fishery assessment process and its potential constraints imposed on a local fishery are of less significant importance since experiences show that through proper implementation and broad stakeholder-based set-up of the certification programme, sufficient financial means can be provided.

8. The participatory initiative and interest as well as the commitment from all relevant stakeholders towards the process of eco-labelling is key for successful achievement.
PART ONE:

INTRODUCTION & BACKGROUND INFORMATION
1. Introduction

1.1 Eco-Labelling for Fisheries

1.1.1 Background and functional Scheme of Eco-Labels

The concept of Eco-Labelling was internationally recognized by the United Nation Environmental Committee (UNCED) in 1992. Eco-Labelling allows consumers to make informed choices and purchasing decisions based on specific information about the products characteristics communicated by the referring label in regard of its environmental benefits and performance.

Eco-Labelling schemes are generally based on the same rationale: A seal of approval is given to products that are deemed to have fewer impacts on environment than functionally or competitively similar products. The consumer can then make informed choices at the point of sale, taking into account not only price- and quality-oriented selection criteria, but also environmental and ethical issues.

Eco-Labels generally rely on life-cycle assessments of the environmental impacts of products. Labelling schemes may invite consumers to discriminate not only on the basis of product characteristics, but also on the basis of how the product was produced.

These so-called “process and production methods” labelling schemes build the systematic framework of fisheries-specific eco-labelling schemes: They do specifically target the process and the methods for exploitation of aquatic resources.

1.1.2 Potential Benefits of Eco-Labelling

Benefits of eco-labelling schemes have been widely assessed in sectors where such schemes have been introduced not only recently, e.g. in the wood and timber industry, the consumer goods industry or in the agricultural sector.

Widely acknowledged benefits of eco-labelling for producers being certified include potential for premium market prices, access to new markets, safeguarding of existing market channels, preferred supplier status, potential to attract ethical investment in the sector as well as (co)funding of local community social and economic infrastructure. Additionally, and for the fishery sector more specifically, eco-labelling schemes are acknowledged to support improvement in fisheries management and to gain recognition of fishery conservation efforts.

1.1.3 Eco-Labels for the Fishery Sector

There is a broad consensus in the international community that many of the world’s commercial fisheries are in distress. Eco-Labelling schemes are increasingly perceived as a way to simultaneously maintain the productivity and economic value of fisheries while providing incentives for the improvement of fisheries management and the conservation of marine biodiversity. ³,⁴

In the fishery sector, a number of eco-labelling initiatives have been designed recently to complement and support efforts towards sustainable fisheries management. Fishery eco-labels have been introduced to the markets with varying degree of success. While at

³ Eco-Labelling and Sustainable Fisheries, IUCN 1999
⁴ Eco-Labelling: Can Consumer Power make the Management of South East Asian Fisheries more sustainable? Fish for the People 2006
present the market share of eco-labelled fishery products still remains relatively small, some eco-labelling initiatives have been starting to carve out considerable market niches for their products and are today more and more demanded by international market actors and consumers.

Even if some eco-labelling schemes fail, there will likely be new efforts from governments, private industry and NGO’s to initiate market based approaches to promoting sustainable fisheries.

1.1.4 Concerns on Fisheries Eco-Labelling

Fisheries eco-labelling schemes present a variety of opportunities as well as challenges and have met with varying degrees of acceptance from different stakeholders. Aspects of eco-labelling of fisheries that provoke concerns include the transparency and the scientific basis of the criteria used to authenticate labels, consumer responsiveness, the potential impact on international trade in fish and fishery products, and the appropriate role of government in voluntary labelling and certification.

In this regard there has been considerable concern that eco-labelling schemes in fisheries do constitute disguised protectionism – in particular for developing countries – in regard of potential restrictions for future market access.

Although assessing the potential positive impact of fishery eco-labels in regard of environmental, social and economical benefits continues to pose a challenge and remains difficult to quantitatively establish, there is today an international consensus that eco-labelling of fisheries is a pragmatic, market driven and effective way to better facilitate and support the introduction of sustainable practises for exploiting marine resources on a global scale.

1.1.5 Market Perspectives for Eco-labelled Fishery Products

The extent to which voluntary certification and labelling schemes will successfully be introduced ultimately depends on the demand for eco-labelled products in the relevant international markets.

Today, there is no clear evidence of how large environmental and social markets for fishery products are likely to become in the future. Fact is however: The market for eco-labelled fish and fishery products will increase in the future. The increasing influence of the voluntary purchasing decisions of large wholesalers, retailers and restaurant-chains controlling major market shares, particularly in the consumer markets of Europe and North America, suggests that some eco-labelling schemes will definitely experience increasing interest and demand on a global scale.

Some key developed country retail- and wholesale-companies have recently announced their intentions to procure only fish and seafood products from wild capture fisheries that are certified for compliance with stringent environmental criteria.

The list of examples of European and US companies seeking to source and procure only certified fish and seafood products in the future encompasses companies like Wal Mart (US), Darden Restaurants (US), Whole Foods (US), Metro (D), Friederichs (D), Frosta (D), Deutsche See (D), Intermarché (F), Carrefour (F), Auchan (F), Monoprix (F), Unilever (NL), Youngs (UK), Marks & Spencer (UK), Waitrose (UK), Tesco (UK), Sainsburry’s (UK), Coop (CH), Migros (CH).

The combined procurement force and purchasing power of these mayor and globally acting companies will possibly act as one mayor driving force towards implementation of sustainable fishery practises and to certify more and more fisheries. It’s unlikely that this trend will cease in the near future.
1.2 Eco-Labelling of Fisheries in Developing Countries

1.2.1 Importance of the Fishery Sector for the Developing World

The fish and fisheries products market is one of the world’s fastest growing international commodity markets. Its total world trade value exceeds USD 56 billion - a figure more than twice that of tea, coffee and cocoa combined. While these figures on the world’s market may seem impressive, from the developing countries’ perspective, the dimension becomes even more significant: According to the Food and Agriculture Organization of the United Nations (FAO), fish accounts for more than 40 percent of the protein in the diet of two thirds of the global population.

But the fishery sector provides not only food for immediate consumption: Between 300 and 500 million people in developing countries rely directly or indirectly on fisheries for their economic survival. Fisheries products from developing countries play an increasingly important role on world markets: The global trade value of fish and fisheries products has grown from USD 6 billion in 1980 to USD 56 billion in 2001 (+ 930%), with the developing countries’ share climbing from USD 3.4 billion to USD 17.4 billion over the same period.

For today’s developing countries, export of fishery products generate more revenues than the combined earnings from all agricultural exports such as coffee, cocoa, sugar cane, rice, bananas and tea. Alongside crude oil, fish is the most important export product for many developing countries. With USD 2.7 billion annual trade value, fish and fishery products are Africa’s leading export commodity.

1.2.2 Eco-Labelling and Fisheries’ Competitiveness

Proponents of eco-labelling schemes for fisheries cite a series of economic and environmental opportunities and benefits for fisheries communities and their related environment, while critics raise concern about the bureaucratic and technical challenges fisheries would need to overcome in order to proceed with certification as well as they raise the overall fear of protectionism in regard of future market access to developed countries in the North.

These concerns and critics are particularly raised by developing countries. They express concerns that eco-labelling schemes in importing countries with a high level of consumer awareness and sensitivity in regard of ecological issues could add new constraints upon their competitiveness by adding to already existing food safety, hygiene, traceability and technical standards rules.

1.2.3 Evaluation of Importance of Eco-Labelling

The above mentioned actual development on parts of international markets in regard to the increasing demand for fish and fishery products from certified sustainable fisheries underlines the eventual importance of eco-labelling for export-oriented fisheries in developing countries.

With world trade in fisheries products still continually expanding and the fact that more than 50% of today’s world trade volume of fishery products originates in developing countries, it is critically important to consider the potential economic, social and environmental benefits of eco-labelling for developing countries.

Producers and fishery operations following environmental sound and sustainable exploration practises today increasingly experience higher market competitiveness. Many fisheries in developing countries are yet experiencing difficulties to meet requirements and achieve compliance with already existing market-specific conditions imposed by developed countries - not taking into account the issue and additional requirements of eco-labelling.
Especially countries with a predominant artisanal fishing sector today experience threats of market exclusion due to non-compliance with increasingly stringent food-safety, hygiene and product traceability regulations imposed by the export markets of the North. The complex and resource consuming process of eco-labelling may simply overcome some fisheries capacities and capabilities to conduct product certifications.

Therefore it is important to consider that not all export markets will ever be demanding certified sustainable fish and seafood. Eco-labelling may be of increasing importance to some nations’ consumer markets, but not to others.

Although eco-labelling is in its approach a market driven process, it’s also important to note that eco-labelling has widely been regarded as a stimulus to the improvement of fisheries management – and it is increasingly being considered in this regard.

1.2.4 Constraints of Eco-Labelling

Most available fisheries certification schemes do work on a voluntary basis and are generally open to all interested parties and fisheries. However, development countries’ fisheries are experiencing multiple constraints in regard of the certification process – not only a result of a mismatch between modern certification requirements and the reality of many small-scale artisanal fisheries, - but also due to a general lack of a sound fishery management.

Small-scale fisheries in tropical development countries are often characterized by open access and overlapping multi-species fisheries, fishing with numerous gears and using a multitude of different landing sites. Often the artisanal coastal fishery does coexist and compete with industrial and commercial fisheries, providing both inland local markets and export markets with fish, which makes it generally difficult to record and monitor data on captures appropriately.

Constraints for eco-labelling of artisanal coastal fisheries in developing countries are often related to the complexity of the fisheries, its social and socioeconomic interactions and its artisanal background on how a fishery is being operated and organized.

For example, practical constraints do mostly refer to the organisational status of the fishery and the level of fishery management and enforcement procedures being implemented, the availability and accuracy of fish stock data and capture records, as well as the cost and the personal / technical resources involved in the process of fishery assessment and certification procedures. Such conditions are regarded as prerequisite for proper management of a modern fishery – but often stay in contrast to the reality of artisanal coastal fisheries in developing countries.

These constraints are of significant importance when considering eco-labelling of artisanal small-scale fisheries, often operating on a less developed organisational level, lower profitability and on a data-deficient basis.

1.2.5 Need to improve Facilitation of Eco-Labelling

The actual critical status of world fisheries, the significant importance of the fishery sector and export of fish and fishery products for developing countries as well as the growing international market demand for certified sustainable fish and seafood products make it of critical importance to promote, support and facilitate initiatives for fisheries eco-certifications in developing countries’ fisheries.

There is the need to gain practical experience on how to best address eco-labelling procedures and certification schemes to small scale and artisanal fisheries and on how to overcome the specific related constraints in developing countries.
1.3 Objectives of the Study

This study’s objectives are to gain an up-to-date overview and insight knowledge about the specific constraints and the potential for realisation of eco-labelling schemes in artisanal coastal fisheries in developing countries. As a representative and realistic case for the study, the Senegalese artisanal fishery sector has been chosen as the subject of the study.

The study will summarize today’s existing and available eco-labelling schemes for fisheries certification, their specific requirements as well as the resulting constraints for realizing product certification.

Based on an actual overview and today’s status of the Senegalese fishery sector, the study will analyse potential benefits, constraints as well as the overall feasibility of eco-labelling of artisanal coastal fisheries in Senegal.

The study shall evaluate the practical feasibility of eco-labelling taking into account following factors, site-specific conditions and overall pre-requisites:

- Socio-economic background of stakeholders
- Local stakeholder awareness, interest and initiatives for eco-labelling
- Status of fishery sector and fish stock
- Status of fishery management, capture record and data
- Status of infrastructure for fishing, landing and processing
- Status of food-safety, hygiene and traceability measures
- International market demand for export species
- Interest of market actors for certified products
- Potential benefits of eco-labelling
- Capacities, capabilities and financing means for pilot project in Senegal

The study shall serve local and international stakeholders as a reliable basis for decision making and planning process for the conduction of pilot-programmes in eco-labelling of artisanal coastal fisheries in Western Africa.

Based on the study’s outcomes, local and international initiatives and interests shall be combined in order to proceed with the implementation of eco-labelling schemes in developing countries’ fisheries.
2. Eco-Labelling Schemes for Fisheries

In recent years, several national and international eco-labelling schemes and initiatives have been developed worldwide by different organisations. Since the adoption of the *FAO Guidelines for the Eco-Labelling of Fish and Fishery Products from Marine Capture Fisheries* in March 2005 by the FAO Committee on Fisheries (COFI), there is an international consensus on the principles, general considerations, terms and definitions, minimum substantive requirements and criteria as well as on procedural and institutional aspects of eco-labelling of fish and fishery products from marine capture fisheries.

Eco-labelling schemes have been developed and introduced under various scopes and with different success. The following section introduces today’s available eco-labelling schemes for capture fisheries and describes their scope, principles, criteria, system of certification as well as their market impact and acceptance.

2.1 Overview on Eco-Labelling Schemes

2.1.1 The Marine Stewardship Council (MSC)

The Marine Stewardship Council (MSC) is an independent, global non-profit organisation. The MSC was originally established in 1997 by Unilever and the World Wildlife Fund (WWF) as a joint initiative to tackle the problem of non-sustainable fishing by market incentives. In 1999 the organisation became fully independent from both founding organisations and today is financed by a wide range of organisations including charitable foundations and corporate organisations around the world.

Today the MSC is the leading international eco-labelling scheme for fisheries. The MSC has spent two years developing its environmental standard for sustainable and well-managed fisheries assuming that a sustainable fishery is defined, for the purposes of MSC certification, as one that is conducted in such a way that:

- it can be continued indefinitely at a reasonable level;
- it maintains and seeks to maximise, ecological health and abundance;
- it maintains the diversity, structure and function of the ecosystem on which it depends as well as the quality of its habitat, minimising the adverse effects that it causes;
- it is managed and operated in a responsible manner, in conformity with local, national and international laws and regulations;
- it maintains present and future economic and social options and benefits;
- it is conducted in a socially and economically fair and responsible manner.

Since its first market introduction in 2000, the MSC experienced a steady growth due to growing interest from the market side as well as

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5 Guidelines for the Eco-Labelling of Fish and Fishery Products from Marine Capture Fisheries, FAO 2005
as increased awareness by the fishery sector. At the centre of the MSC is a set of Principles and Criteria for sustainable fishing which are used as a standard in a third party, independent and voluntary certification programme. The MSC promotes equal access to its certification programme irrespective of the scale of the fishing operation. The implications of the size, scale, type, location and intensity of the fishery, the uniqueness of the resources and the effects on other ecosystems will be considered in every certification.

The MSC is internationally widely accepted and has been officially approved to be fully consistent with FAO-Guidelines for Eco-Labelling of Marine Capture Fisheries.

**Development of Standard**
The MSC-standard was developed following worldwide consultation with scientists, fisheries experts, environmental organisations and other stakeholders with a strong interest in preserving fish stocks.

**Principles and Criteria for Certification**
- A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery
- Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends
- The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

**Certification Process**
The MSC certification is a multi-step process involving following main procedures:
- The fishery selects an accredited certification body
- Conduction of fishery pre-assessment resulting in confidential report
- Improvement and adaptations by the fishery and decision to proceed to full assessment
- Certification body assembles an expert team and provides opportunities for stakeholder input for defining specific performance indicators for assessment
- Full assessment of fishery using performance indicators and scoring guideposts
- Assessment report is being reviewed by client fishery, experts and public stakeholders
- Based on final report objections procedures and final decision on certification
- Chain of custody assessment and certification
- Final certification of product
- Certified fisheries are subject to consecutive annual audits

**Certification Bodies**
Fisheries assessments for compliance with MSC standard are conducted by accredited third party certification bodies. The same certification bodies then make the final certification decision consistent with the MSC standard. Thus the MSC itself does not certify the fisheries.

**Actual Status of Certified Fisheries**
Today, there are 22 fisheries certified worldwide by MSC, encompassing an annual volume of seafood of more than 3.5 Mio. MT. More than 20 further fisheries are actually undergoing full assessment procedures (April 2007).

**Market Acceptance**
The MSC is internationally widely accepted. MSC labelled products are sold throughout the world, most prominently in Europe and North America, the US and Switzerland top-ranking the list of MSC-country markets. Today there are more than 350 fish and seafood products bearing the MSC logo.

Mayor seafood wholesalers and retailing companies have officially announced focusing future procurement of fish and seafood on MSC certified fisheries. The list includes:

US: Wal Marts, Wholefoods, Wild Oats
UK: Tesco, Sainsbury’s, Waitrose, Young’s Bluecrest, Marks & Spencer, Bird’s Eye
D: Metro, Deutsche See, Friedrichs, Frosta,
CH: Migros, Coop, Möwenpick
F: Intermarché, Auchan, Monoprix
2.1.2 Friend of the Sea (FOS)

Friend of the Sea is a fisheries certification scheme promoted by the Earth Island Institute, an international independent and not for profit humanitarian and environmental organization. Friend of the Sea mission is to promote sustainable fisheries and awareness of products fished in an unsustainable manner. The scheme has been introduced in 2005 and has been experiencing a steady growth since then, today it is considered to be one of the best established eco-label for fisheries.

By auditing and assessing fisheries against existing scientific definitions and actual status reports on fish stocks provided by official organisations such as the FAO or regional fisheries bodies, Friend of the Sea aims at providing a pragmatic, relatively fast and rather simple way to eco-labelling.

This pragmatic and (in comparison to other eco-labelling schemes) less complex, time consuming and expensive assessment process for certification has provoked considerable critics lately and must be regarded critically. FOS labelling scheme states to fulfil all criteria of FAO’s guidelines for eco-labelling of fisheries, however critics remain about the scheme’s approach to guarantee and long term safeguard sustainability of certified fishing operations.

Development of Standard

The standard has been developed by Friend of the Sea and the Earth Island Institute, in collaboration with other stakeholders such as NGO’s, market actors and the fishery industry.

Principles and Criteria for Certification

- Products fished with detrimental fishing gear shall not be certified. FOS provides a list of detrimental, non-sustainable fishing gear and methods.
- Fisheries must implement efficient by-catch reduction measures
- Products that have been fished in overexploited or depleted areas / stocks and species / by-catch that are IUCN red-listed can not be certified.
- Assessment and certification process are based on the actual and available data of status of stocks (FAO and regional fishery bodies) and on the best scientific knowledge available.
- The fishery shall operate according to the precautionary principle.
- The fishery must respect all national and international legislation

Certification Process

- Interested companies and manufacturers of products apply for certification.
- FOS conducts pre-analysis and spot-checks on site of the fishery operation based on information on raw-material origin provided by the applicant (e.g. status of stock, methods of capture, landing sites, processors).
- If the products raw material is in compliance with FOS criteria, approval is being given and by integrating chain of custody audit the product can be certified and be labelled with the FOS logo.
- Products may go through a more detailed preliminary analysis before final approval or rejection (if case the criteria can not be met).
- Products and fisheries are subject to periodical spot checks for compliance.

Certification Bodies

Department of Oceanography and Fisheries of the University of the Azores (DOF). DOF has been accredited to conduct certifications for FOS compliance.

Actual Status of Certified Fisheries

There are more than 140 different products and/or species being certified. The majority are private retailer’s / wholesalers private label products.

Market Acceptance

FOS products are sold in EU and US. Examples of Retailers include Carrefour (F), Coop Italia (I), Sainsbury’s (UK), Tesco (UK), Wholefoods (US).
2.1.3 Naturland

The German Naturland Association has grown to become one of the most important organisations in the field of organic agriculture in Germany. On the global level, Naturland is one of the major certifying organisations for organic products and it has been one of the pioneering standard organisations for organic aquaculture development. Also, Naturland has been developing and introducing eco-labelling schemes for sustainable timber production.

In 2005, Naturland started to develop guidelines and a certification scheme for sustainable fisheries, generally applicable for both inland and marine fisheries.

The Naturland label and trademark is well known as a consumer label amongst German consumers, certified products are also being marketed in other European and North American countries.

**Development of Standard**

The Naturland standard for sustainable capture fisheries has been developed in 2006 / 2007 by Naturland.

**Principles and Criteria for Certification**

- The standard sets overall criteria in regard of environmental, social and economic sustainability of a fishery and its stakeholders
- For each fishery, a specific set-of guidelines is being developed based on local and international expert and stakeholder consultation (scientific bodies, governmental and regulatory institutions, NGO's, Fishery industry and fishery stakeholders)
- Fisheries sustainability criteria do encompass the status and long term sustainability of stocks as well as the integrity of aquatic eco-systems
- The unit of certification is a fishery within its geographic range of activity, taking into account the local level of exploitation being exerted by the fishery on the total stock of population
- For fisheries based on widely dispersed fish stocks or migratory species, the fishery assessment will evaluate if the fishery management exerted by a locally restricted certification candidate contributes to sustaining / enhancing the total population of the species under consideration (thus giving example to others, e.g. neighbouring fisheries)
- Specific guidelines are set-up for each project based on local conditions and practices taking into account potential by-catch, destructive devices and gear, pollution by contaminants, fishery seasons, regulations on catch volumes and minimum catch sizes. Specific guidelines are based on local available data and internationally acknowledged status of stocks
- Further the Naturland standard tackles minimum social labour standards and fisheries community rights
- All candidate fisheries must be in accordance to national and international regulations and must be subject to effective enforcement procedures
- Every candidate fishery must further prove that all fishery participants are being regularly informed in regard of the guidelines contents and that the fishery does manage the collection and monitoring of all relevant data correctly and regularly
- A catalogue of detailed fishery management criteria
- All fishery management procedures are subject to documentation process

**Certification Process**

- Inspection by accredited independent third party inspection bodies
- Inspections on annual basis
- Certification by Naturland Certification Commission
- The certification encompasses the fishery and chain of custody

**Actual Status of Certified Fisheries**

- Various projects in preparation
- Majority of projects with artisanal fisheries
- Inland and marine fisheries

**Market Acceptance**

- Naturland is well established within the German and European consumer market
2.1.4 Fair-Fish

Fair-Fish is a Swiss membership based not for profit organisation dedicated to improve environmental, animal welfare and social issues in fisheries. The organisation has been founded in 2001 and has its roots within the community of NGO’s promoting and improving the conditions of animal welfare in modern and industrialized husbandry systems.

In its beginning, Fair-Fish has been dealing mainly with the Swiss fishery and aquaculture sector, promoting animal friendly husbandry systems and humane killing methods for fish. In a second attempt and range of activity, Fair-Fish has been developing a certification scheme focusing on small scale artisanal fisheries. The organisation is today involved in the development of its pilot-project in Senegal, where Fair-Fish has been establishing a small-scale and community-based fishery project in the Saloum area of Senegal’s south.

Fair-Fish is dealing not only with environmental issues in regard of sustainability of the fishery, but also with animal welfare and social issues related to the fishery sector.

#### Development of Standard
The standard has been developed by Fair-Fish under consultation of various stakeholders and external experts from the fishery, food industry and marine conservation groups.

#### Principles and Criteria for Certification
- Subject for certification are individual fisheries for which Fair-Fish defines specific guidelines that need to be followed in order to obtain certification
- Guidelines encompass a list of allowed species to catch, total allowable catch limits and fishing seasons, as well as gear and methods of fishing
- All criteria do encompass and allow for a sustainable exploitation of marine resources
- For assessment and definition of allowable species (not threatened, not over-fished) Fair-Fish is working with Friend of the Sea (FOS) which is providing Fair-Fish with recommendations based on FAO data / or data of other regional fishery bodies.
- Fisheries must follow sound and proper methods of killing the fish

#### Certification Process
The fishery is assessed for compliance with Fair-Fish standards by third party inspection body. The certification encompasses the fishery and chain of custody.

#### Certification Bodies
Fisheries are inspected and certified by independent third party certification bodies.

#### Actual Status of Certified Fisheries
Fair-Fish has been developing one pilot project in Senegal and is actually planning to build-up and establish the project in 2007.

#### Market Acceptance
Fair-Fish is concentrating its efforts on the Swiss market where it has established cooperation with the largest Swiss retailer Migros.
2.1.5 KRAV

KRAV is a membership-based Swedish incorporated association and the key player in the organic market in Sweden. KRAV develops organic standards, inspects to these standards and promotes its KRAV label.

KRAV has also developed standards for sustainable fisheries. These standards are created to drive development in the fishing industry towards a sustainable fishing and processing. The standards shall facilitate trade with products produced in compliance with these standards. The KRAV-standards are developed for conditions in Scandinavia and are applicable in fishing waters within 200 nautical miles from a Scandinavian country.

KRAV takes the decision to certify a stock for fishing and fishing methods. The authorized certification body carries out and certifies the individual fishing vessels. This means that more vessels can fish in a certified stock and that those wishing to fish in a certified stock only need to contact the authorized certification body.

Development of Standard
The KRAV standard has been developed in a multi-stakeholder process involving scientific bodies, fishery industry and organic certification bodies.

Principles and Criteria for Certification
- The collective fishing pressure on a stock may not exceed its production capacity or endanger the balance in the marine ecosystem
- Assessments of the size of stock shall apply the precautionary approach
- Assessment must be based on available data and relevant knowledge of the stock, methods, and gear. The Fishing Committee may recommend that the fishery be not approved, due to insufficient knowledge
- Fishing methods that cause long-lasting or irreversible damage to the environment may not be approved. KRAV provided a list of allowed methods for different species / fisheries.
- All by-catches of non-target species of marine mammals, birds and invertebrates must be documented in the logbook and reported to the certification body. Catches of invertebrates may be reported in the logbook with an estimate of the weight, or in another appropriate way that describes the quantity.
- Every fishing vessel complies with the environmental, fishing and occupational safety legislation
- Every fishing vessel needs to comply with environmental guidelines regarding the type of diesel fuel being used, type of outboard motors, hydraulic oils and lubricants, antifouling agents and cleaning agents.
- Consumers shall be able to eat KRAV approved fish safely.

Certification Process
- Interested fishery applies for KRAV certification and provides all needed information on the fishery to the KRAV Fishing Committee
- The Fishing Committee is an independent, scientific lead expert body that assesses the fishery against the criteria and principles set by KRAV
- The fisheries compliance is independently assessed and inspected by accredited certification bodies

Certification Bodies
Accredited independent certification bodies according to ISO Guide 65

Actual Status of Certified Fisheries
So far only pilot projects in small inland fisheries of Sweden

Market Acceptance
In Scandinavian countries only
2.1.6 Fair-Trade Labelling for Fisheries

Eco-labelling is focusing on market based incentives for environmental sound production processes and sustainable management of natural resources. Most eco-labelling schemes do therefore primarily cover the environmental issues related to fisheries operations, not or only basically taking into account the relevant social and socio-economic issues related to local fishery communities.

It is widely acknowledged that environmental beneficial exploitation of natural resources can only happen if the local people directly depending on these resources can sustain their livelihoods appropriately and live in socio-economic circumstances that favour and allow long term awareness for resource depletion and environmental degradation directly related to the daily need of exploitation activities for food and income revenues.

For export oriented extraction and production of food in developing countries the concept of Fair-Trade has proved to be beneficial for local producer's communities in the agriculture sector. Fair Trade is a trading partnership, based on dialogue, transparency and respect that seek greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing their rights of, disadvantaged producers and workers – especially in the South.

Fair Trade organizations (backed by consumers) are actively engaged in supporting producers in awareness raising and in campaigning for changes in the rules and practices of conventional international trade. Fair Trade's strategic intent is to work with marginalized producers and workers in order to help them move from a position of vulnerability to security and economic self-sufficiency as well as to empower producers and workers as stakeholders in their own organizations.

Since many years, Fair Trade practices have been introduced successfully on international markets for agricultural goods and today more and more small-scale farmers directly benefit from this market based initiative. Although in many developing countries the fishery sector – predominantly conducted by small scale fishery communities – is far more important in regard of export revenues than agricultural foodstuffs, the concept of Fair Trade has not been introduced into the fishery sector yet.

When discussing the feasibility of eco-labelling for fisheries in developing countries, - and the relevant underlying social issues in regard of market access, competitiveness and vulnerability of small scale fisheries to financial market pressure – the concept of Fair-Trade for fishery products should be taken into the consideration.

2.1.7 Selection of Standard for Evaluation of Feasibility

For this study on feasibility of eco-labelling within the Senegalese artisanal fishery sector, the Marine Stewardship Council (MSC) has been selected as the benchmark certification scheme. Due to its wide international market acceptance and overall acknowledged positive impact on sustainable fisheries development worldwide, this study will thus focus on the practical feasibility of eco-labelling according to the criteria and guidelines of the MSC (Chapter 5 & 6).

However, other above mentioned eco-labelling schemes will also be taken into account when discussing suitable candidate fisheries in Senegal and proposing the next steps towards eco-labelling of artisanal fisheries in this context (Chapter 7).
2.2 MSC-Fishery Assessment and Certification Process

For detailed analysis of constraints and feasibility of eco-labelling in Senegal, the Marine Stewardship Council (MSC) was taken into account as the only reference and benchmark scheme due to its wide international market acceptance. The following section introduces the procedures and the process of MSC-assessment and certification process.

2.2.1 Main Steps of MSC-Fishery Assessment Process

Certification to the MSC standard is a multi-step process, which is carried out by independent and officially accredited certification bodies. The formal document that guides through the process is referred to as the MSC Fisheries Certification Methodology.

The methodology used by the independent certification bodies includes procedures designed to transparently identify and address issues about target stock(s), the impact of fishing on the marine environment and the effectiveness of the fishery’s management system. Among other things these procedures include:

- Formal stakeholder consultation
- Detailed public reporting of information and operational performance measures used in the assessment
- Standardised multi-criteria methods for combining the operational performance measures into an overall score for the fishery
- Identification of conditions to improve weaker performance
- Peer review of the assessment
- A formal objections procedure

Figure 1 on the following page outlines the key steps involved in the MSC assessment and certification process.

2.2.2 The Client of MSC Fishery Certification

Before entering into MSC assessment procedures, it is important to consider on who is actually going to be the client of the fishery certification – that is: Which organisation will be the holder of the certificate. So far fishery clients have included government agencies, fishing industry associations, local management authorities and co-clients involving fishing industry associations and NGOs, or different government agencies working together to achieve certification.

One of the most significant issues to consider is whether the holder of the certificate is able to implement (either directly or indirectly) conditions which may be placed on the fishery client as part of the certification. Failure to implement conditions can lead to suspension or withdrawal of the certificate. The body chosen as the client must therefore be confident that it can successfully implement the needed actions.

MSC-certification might also have implications for fishery management and/or research agencies and it is important to have a clear understanding of the potential financial and work consequences that may arise from a successful fishery assessment.

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6 The information being given in this section stems from various documents from the MSC which are published on the official website as guidance tools for the industry (status of information April 2007)
2.2.3 Unit of Certification

When preparing for MSC assessment the client and certification body need to establish a clear and agreed definition of the unit of certification before any work begins. The key question is: Assuming the assessment is successful, what and/or who will be certified? The answer to this question may include named species, caught by named methods from named stocks, by named vessels or companies.
The MSC describes the unit of certification as:

“The fishery or fish stock (biologically distinct unit) combined with the fishing method/gear and practice (vessel(s) pursuing that stock). At its simplest, a single vessel could be the unit of certification, more likely a number of vessels in the same fishery will probably be assessed.”

So one or a group of vessels in the same fishery (a combination of stock(s)/gear/practice) may be the unit of certification. Multi-species/multi-method fisheries can be certified, so long as each species, stock and gear is identified as part of the unit of certification.

There may be other fisheries (i.e. combinations of stock(s)/gear/practice) in operation that may catch the stock or impact the same ecosystem as the fishery seeking certification. Stocks in this context could be different species, or different ‘more or less isolated and self sustaining’ groups within a species.

There is no implication that if one stock or fishery is certified then that certification also applies to all other stocks of that species or to other fisheries taking that species.

Once the assessment process has begun, changing the scope of the assessment – that is: species, area of the fishery, gear type or vessels under assessment - could cause significant delay and extra costs.

Potential clients and certification bodies therefore need to be very clear about the unit of certification before entering into assessment procedures. In submitting a fishery for assessment against the MSC standard, the client need to specify the boundaries to the method/gear and practices in the fishery to be assessed, a geographical description location of the fishery and all the species and stock(s) for which certification is being sought.

2.2.4 Fishery Assessments for Part of the Fish Stock

It is possible to pursue MSC-certification for only one part of a stock. The main concern for the certification body will be the health of the whole fish stock or biological population of the species being fished and the whole stock must be assessed against MSC’s Principle 1 and to be certified, pass the standard. The consequence of this is that although a fishery may be taking only part of a stock or biological population, the assessment must always consider the effects of all extractions from that stock, including those in fisheries (or sectors) that are not being considered for certification.

Thus, when assessing a fishery, certification bodies will ensure that recreational or illegal catches, or catches by other gears are also taken into account. This might occur for example, where the fishable stock of a species is widely spread across several jurisdictions, or in small-scale fisheries that target only one part of a much larger stock, or those fisheries where the management performance of one group of fishers is enhanced by additional or different measures compared to other management efforts across the whole range of the fished stock.

The further consequence of this is that where the stock of the certified fishery is shared with other (perhaps uncertified) fisheries, these other activities may deplete the stock and hence have a detrimental impact on the certified fishery. In this situation the certified fishery risks losing certification because of actions third parties outside the certified fishery.

The exact choice for the boundaries of the unit of certification can have profound consequences for both the success of the assessment, and the maintenance of the certificate. It is for these reasons that clients are advised to carefully consider the unit of certification, and where feasible, include all sources of extraction from the biological stock of the target species within the fishery to be assessed.
2.2.5 Multi-Species Fisheries and Environmental Interactions

Only those species in a fishery that have been the subject of a full assessment may make the MSC claim and carry the MSC logo. Therefore in multi-species fisheries, all species to which a client wishes to attach the MSC logo and claim must be nominated for assessment. It is therefore essential that it be determined in advance which products (including by-catch or by-product species) shall be subject to certification be nominated at the beginning of the full assessment process.

For by-catch species this means that no fisheries product taken as by-catch in a certified fishery is eligible to carry the MSC logo unless the stock(s) have been assessed and found to comply with MSC’s Principle 1 as well as the remaining Principles.

Any other species taken in the fishery under assessment (and not specifically nominated for assessment under Principle 1) must pass an assessment under Principle 2. This means that the by-catch of a particular species in the fishery under assessment must not be of such a type or magnitude that it contributes substantively to over-fishing or any other unacceptable stock or ecological issues that may be experienced by that by-catch species.

Where some parts of the stock are not within the fishery being assessed, and may be targeted by other fisheries in the region, the effect of these other fisheries on the stock should be included within the assessment of Principle 1.

However, the environmental effects of such other fisheries (fisheries not being assessed for MSC certification) would not normally be considered under Principle 2 or Principle 3, unless these environmental interactions do affect the stock. This might occur when, for example, important spawning or nursery grounds of the species being assessed are outside the geographical area of the fishery, and hence open to fishing or degradation by other means that may affect the stock in the fishery being assessed.

2.2.6 Pre-Assessment Procedures

The pre-assessment is the first formal step performed by the certification body in the certification process. The fishery client first retains the services of an MSC accredited certification body to provide a brief evaluation of the likelihood of the fishery meeting the MSC standard: the MSC’s Principles and Criteria for Sustainable Fishing. The certification body will identify the strengths and weaknesses of the fishery and recommend to the client whether or not the fishery should progress to the full assessment stage. The actual conduct of a pre-assessment and its outcomes are confidential unless the client chooses to make them public.

The pre-assessment will result in a report by the independent certification body consisting on following main issues:

- A substantive meeting between the client and certification body
- Decisions with respect to potential field visits
- A preliminary assessment of the extent to which the fishery is consistent with the MSC’s Principles and Criteria for Sustainable Fishing
- An evaluation of the clients’ state of preparedness for assessment of their fishery
- A review of the availability of required data and information
- Identification of stakeholder interests who should be consulted in a full assessment
- A determination of the overall scope of the full assessment
- A description or agreement of the unit of certification
- A description of potential obstacles or problems that may be a barrier to certification
- Quotes for the full assessment (if relevant)
2.2.7 Full Assessment Procedures

The full assessment involves detailed evaluation and scoring of the fishery against the MSC standard. It is a public and open process that will lead to a decision about whether or not the fishery meets the MSC's Principles and Criteria for Sustainable Fishing. In order to come to a decision, the certification body will consult widely with relevant stakeholders (such as industry, government, scientific organisations and environmental groups). This stage also includes a formal process for lodging objections.

The full-assessment process involves the following steps:

- **Public announcement and targeted stakeholder communications**
- **Assessment planning and team selection**
- **Determining Performance Indicators and Scoring Guideposts and their weighting prior to the assessment visit** – these will form what is called an “assessment tree” or assessment hierarchy and are specific to the fishery being evaluated
- **Consultation with the client, the MSC and stakeholders about the draft assessment tree** – This is to obtain feedback about whether the assessment hierarchy is appropriate to the size, scale, ecology, geography and technology of the fishery, as well as consistent with the MSC standard
- **Assessment visits and information collection** – at this stage client organisations must provide to the certification body as much information and data on their fishery as possible. This is used by the assessment team to inform the scoring process
- **Stakeholder visits and opportunity to submit views in writing** – this is the stakeholders’ opportunity to provide input into the evaluation process, along with any verifiable evidence relevant to the assessment
- **Scoring the fishery** – the assessment team uses an analytical model designed to allow quantitative and qualitative evaluation of the fishery
- **Interpreting the scores** – the fishery needs to obtain a score of 60 or more for each Performance Indicator and Criterion in order to be certified. If a fishery achieves a score of less than 60 on any Performance Indicator and Criterion certification will not be awarded. The fishery must have an aggregate score of 80 or more for each of the three Principles in order to be certified. Any passing scores for individual Performance Indicators less than 80 mean that conditions will be set
- **Conditions** – the certification body is likely to have identified some areas for improvement within the fishery. The certification body will specify an appropriate timescale for addressing each condition and should specify the outcomes that will meet the standard. The certification body cannot tell the client what to do to address a particular problem, only the desired outcome, leaving the decision to the client on how this is to be achieved.
- **Consultation with the client, MSC and stakeholders about proposed peer reviewers**
- **Preliminary draft report produced – review by client**
- **Peer review draft report produced – reviewed by chosen experts**
- **Public Comment draft report produced – stakeholders’ review and comment period**
- **Final Report produced – once published on the website, anyone who has participated in the assessment process has 21 days in which to lodge a statement of intent to submit an objection. If no objections are lodged during this period the Determination in the Final Report becomes the certification decision**
- **Objections procedure (if required)** – objection goes first to certification body then, if response not considered adequate, an objection can be directed to the MSC. If an objection is heard, additional process steps follow
- **Action plan (if appropriate)** – a plan developed by you as the client outlining activities aimed at meeting conditions of certification and time frames, submitted to certification body for approval
- **Certificate issued (if appropriate) and Public Certification Report – produced by the certification body for the client and publication on the MSC website**
2.2.8 Importance of Stakeholder Involvement

For a successful MSC-certification of a given fishery, the support of all stakeholders involved in the fishery including industry (fishermen and processors), management agencies (scientific and regulatory) and stakeholder organisations (e.g. environmental or community-based groups) is vital. Their support will help ensure the certification process runs smoothly, may help minimise delays and potentially avoid objections to a certification result.

The MSC programme depends upon the input and involvement of all relevant stakeholder groups. A significant amount of time is devoted to ensure inclusiveness and transparency in the fishery assessment process.

Therefore the MSC has developed guidance for certification bodies about how to conduct stakeholder consultations in the MSC fishery assessment process and the MSC’s expectations about this process.

It is very important that the client provides the certification body with as much information as possible on relevant stakeholder groups, thus minimising costs and cutting down on time.

The MSC does suggest following stakeholder groups for involvement in the process of certification:

- Governmental Bodies: Fishery and conservation managers and government scientists have an obvious interest in actions taken in the fishery by the fishing industry. Government agencies commonly hold much of the information required by the certification body.
- Environmental / conservation organisations: These groups need to have a thorough understanding of the MSC process. Particularly the concept of continuous improvement as a mechanism to enable fisheries to make positive changes from an environmental perspective whilst enjoying the benefits of logo use. Sometimes these groups may have been lobbying or campaigning for change and relationships with the industry can be challenging or broken. It is far better to involve stakeholders from the conservation community from the beginning than risk alienating them in the process which could lead to challenges and delays later on during the assessment.
- Industry groups: While there are obvious competitive advantages associated with certification, there are also advantages (especially in the post harvest chain) to having as many groups as possible from the fishery under assessment join the certification project. These advantages can include spreading the cost and potentially securing markets.
- Other fishing sectors: The fish stock may be harvested by recreational, indigenous or subsistence fishers. Ensuring representatives of these groups have a good understanding of the process and that the fishery as a whole should benefit from any management improvements will help win their support.
- Commercial / post harvest sector: The use of the MSC-logo imposes some requirements on the post harvest sector of the industry in relation to establishing a verifiable chain of custody from the certified fishery. Chain of custody certification is required for each company that takes ownership of the product that will bear the label.

2.2.9 Time Frame for MSC Certification

The process of MSC certification is comprehensive and scientifically rigorous and thus takes time. The Fisheries Certification Methodology sets out the MSC’s mandatory requirements including the minimum length of time required for consultation with stakeholders at certain stages of the process.
The length of the process depends to some extent on the client's own time frames, as well as the nature and complexity of the fishery. The degree of commitment and willingness to engage by those who hold important information or data on the fishery is a crucial factor that influences the length of the process. Finally, the resources available to the certification body as well as the level of other work commitments of their assessment team members can significantly influence how long the certification process takes.

The MSC has observed that the main stages of the certification process can take:

- Pre-assessment – one month to nine months. Generally at the lower end of the scale.
- Full Assessment – in the absence of an objection full assessments are estimated to take between 5 and 24 months depending upon the complexity of the fishery.
3. MSC Certification of Fisheries: Developing Countries’ Experiences

3.1 MSC Developing World Programme (DWP)

The Marine Stewardship Council is generally open to all fisheries regardless of size, scale, location and intensity. In order to promote equal accessibility to its eco-labelling programme, the MSC has been working with stakeholders and fisheries from all over the world. By creating the MSC Development Programme (DWP) in 2004, the MSC has been seeking to better promote the participation of developing country fisheries in the certification process. The programme aims to increase developing country stakeholder awareness and involvement in the MSC and ensures continued relevance and application of the MSC standard and programme to developing country fisheries.

To facilitate grassroots involvement in the MSC initiative, the MSC has committed to a regionally structured outreach process. This is designed to increase participation in the regions and enable the MSC to more adequately cater for the interests of both developing and developed country stakeholders.

3.1.1 Scope and Activities of Programme

The MSC’s outreach programme for fisheries in the developing world focuses on awareness creation about fisheries eco-labelling through local meetings, workshops and the development of communication material. Also, the MSC DWP is providing training and capacity building programmes for local stakeholders to engage in fisheries certification.

Within its developing world programme, the MSC is specifically partnering with local NGO’s as an instrument allowing collaborative efforts to use certification to work towards sustainable fisheries management. Also, the MSC is providing funding and institutional support for developing country fisheries to participate in the MSC.

The specific MSC DWP objectives and goals can be summarized as follows:

- Revision of methodologies and interpretative guidance on the MSC-Principles and Criteria to assist certifiers to apply the MSC-Standard to developing country and data-deficient fisheries.
- Expand outreach and increase awareness of the MSC programme amongst governments, industry, fisher group associations, processors, exporters, research, academia and non-governmental organisations in developing countries.
- Improve access and capacity of developing country stakeholders to participate in the MSC-process.
- Establish partnerships with the international development sector and international agencies with specific remit for developing country fisheries and increase recognition of MSC certification as a tool to pursue sustainable fisheries in developing countries.
• Implement keystone projects\(^7\) to facilitate an increase in the number of developing country/small-scale fisheries assessed against the MSC standard.

• Increase the availability of certification bodies accredited to carry out MSC certification, including certifiers in developing countries.

• Ensure that stakeholders from developing countries continue to participate in the MSC at all levels including on MSC governing bodies, and thus ensure that issues of importance to them are duly considered by those bodies.

3.1.2 Guidance Tool for small-scale and Data-deficient Fisheries

Since its establishment, the MSC has been confronted with the issues of data deficient fisheries and on how the certifying bodies may assess a candidate fishery given the circumstances. Data deficiency is a general problem in fisheries – its not only related to small scale artisanal fisheries, but may also be found in large scale, industrial fisheries around the world.

In order to provide practical solutions for data deficient fisheries, the MSC has been developing a specific guidance tool for its certifying bodies (GASS/DD). The aim of the tool is to provide guidance for certification bodies to facilitate assessment of fisheries with insufficient data. It involves the evaluation of the risk the fishery poses to different ‘components’ of the ecosystem i.e. species (target, by-product, by-catch, ETP species), habitats and communities.

The approach is based on Ecological Risk Assessment and involves the incorporation of a risk-based assessment for those elements where there is limited data and information available. The proposed methodology allows for an initial qualitative assessment of risk based on scale, intensity and consequence of fishing activity, through to a semi-quantitative assessment based on relationship between productivity of species and susceptibility to fishing activity. The risk-based approach involves the utilisation of fisher and stakeholder knowledge in the identification and evaluation of risks in the fishery, among other sources of information.

Following a period of development in 2006 and 2007, field trials to test the methodology of the GASS/DD will be conducted later in 2007.

3.1.3 Experiences and Lessons learned

Since its establishment in 2004, the Marine Stewardship Council’s Development Programme has been promoting more sustainable and better fisheries management practices by participating in the MSC-initiative all over the world. In regard of developing countries small-scale fisheries, the MSC has learned a number of important lessons that should be taken into account when considering eco-labelling for the Senegalese artisanal fishery sector. These experiences can be summarized as following:

General Conclusions:

• In order to encourage participation in the MSC-initiative within fisheries’ stakeholders it is important to demonstrate potential links between those fisheries and international markets.

• Importance of identifying “leadership” persons and/or organisations that can lead the process of engaging with the MSC and work in partnership with the MSC towards the achievement of more sustainable fisheries.

\(^7\) These projects have been termed ‘keystone’ projects and would complement the more traditional outreach efforts. The projects will demonstrate links between MSC certification and community capacity building, market development and management in cooperation with governments, communities, NGOs and funding partners. MSC’s role would be to provide guidance and mentoring.
• Importance of involvement and support from local government and governmental institutions.

Most important Aspects to be considered if Certification is to become more feasible
• In many fisheries there is need for capacity building and helping fisheries to improve management and become more sustainable before entering into process of assessment and certification.
• There is a need to help identify and bridge gaps, which may prevent fisheries from meeting standard for certification.
• Probable need to develop specific (long term) action plans for fisheries with deficiencies in fishery management.

Major constraints for MSC-certification
• Absence of information of status of fisheries to determining whether a fishery is sustainable. It is expected the GASS/DD approach will help address some of the problems around this issue.
• Lack of awareness about the MSC and how it specifically works in some quarters.
• Poor organisational capacity amongst stakeholder groups.
• Costs (both for actual assessments and for improving fishery to meet assessment standard).
• Fishery may not be well managed or may be over-fished and there will therefore be a need for external support to help the fishery meet the MSC standard.

Level of Awareness, Interest and Know-How in regard of MSC-Certification
• Generally there is a high level of interest, due to awareness that certification can help to improve marketing opportunities and value as a tool to help improve conservation of fisheries resources.
• Awareness is growing especially in the last couple of years with the MSC’s increased work to increase engagement of developing country fisheries in its certification programme.
• Many stakeholders have a general understanding of the MSC and that a fishery needs to be operating sustainably in order to become certified.
• While a broad understanding of the MSC programme is adequate for the majority of stakeholders, it is necessary to provide some specific groups of stakeholders e.g. fisheries scientists to a higher level of detail about the certification process.

3.1.4 Actual Status and Outlook

The MSC DWP is working on various levels and fields of activities to further promote and support fisheries in their efforts towards more sustainable management and to achieve MSC certification. Following section shortly introduces and describes the main planned activities in the near future to come:

GASS/DD Project
The MSC DWP is actually undertaking various field trials in 2007 in which the practical suitability of the GASS/DD tool will be tested by the MSC-certification bodies. These practical experiences will serve as the basis for the future outreach of the MSC programme towards data-deficient fisheries.
Awareness and Capacity Building
- Identifying key stakeholders and potential clients
- Training and capacity building on the MSC-Programme
- Dispelling misconceptions about the MSC
- Identification of potential fisheries
- Developing partnerships and follow-up plans around candidate fisheries

Tools
- Consultation with individual stakeholder groups
- Workshops
- Communication and promotion material

Recent and planned activities in 2007 / 2008
- East Africa (Tanzania, Kenya)
- West Africa (Ghana, Gambia, Mauritania, Senegal)
- Latin America (Venezuela, Ecuador)
- Asia (India, Vietnam, Sri Lanka)

Participation of Stakeholders in the MSC
- Membership of Stakeholder council, Technical Advisory Board and Board of Trustees
- Creation of “Developing World Advisory Group”

Partnerships with other Groups
- NGO’s
- Government
- Development Agencies
3.2 WWF’s Community Based Fishery Programme

Since helping establish the Marine Stewardship Council, WWF has taken a special interest in advancing certification as a conservation tool to benefit small-scale fisheries and coastal communities. For WWF it is of critical importance that certification and eco-labelling can work in small-scale fisheries, especially those of the developing world.

WWF’s Community Based Certification Program (CBC) has been established in 1999 and has since then grown to include 15 projects worldwide. The CBC programme is mainly a methodology and guiding framework to help introduce the MSC standards to local fishers and communities that depend on fishing for their livelihoods. The programme has also established a small grants fund to help community fisheries with MSC certification.

With WWF’s global network of organizations and its partnerships with local NGOs, the CBC program is well equipped to promote and facilitate MSC certification of community-based fisheries in both developing and developed countries.

3.2.1 CBC’s Model of Pre-Analysis

Through the work of the Community Based Certification Program, WWF and its partner organizations have learned a number of important lessons about applying MSC certification to small-scale fisheries and continue to develop ways of working with community fisheries. One of these processes is a pre-analysis model designed by Comunidad y Biodiversidad, A.C. (COBI) a non-profit organization from Mexico in partnership with WWF.

The model evaluates fisheries by using a statistical multi-criteria analysis program. Conducting a pre-analysis is a way to effectively and efficiently execute the Community Based Certification (CBC) methodology over a large area and determine the most promising candidates for certification.

By doing a pre-analysis to gather basic fisheries data about the fisheries in a given area, field staff interested in MSC certification can make informed choices about which fisheries will fit best into their project scheme and can avoid investing in projects where the desired result is a long ways off or unattainable.

Conducting a pre-analysis can have other applications in addition to identifying the fisheries most immediately suited to MSC certification. A pre-analysis can offer also means to create a regional plan for fisheries certification or can be used as a piece of a more broad conservation strategy where MSC certification is used as one tool amongst many.

To date WWF’s Community Fishery Programme has concluded several pre-analysis of fisheries in Russia and India, where some fisheries are today in the process of pre-assessment of MSC. Other pre-analysis processes are actually being undertaken in Eastern Africa (Tanzania and Kenya), Vietnam and Japan.

3.2.2 Experiences and Lessons learned

Through its active involvement, promotion and facilitation of numerous local community initiatives for eco-labelling throughout the world, the WWF’s community fishery programme has gained extensive knowledge and experience on this issue.

In regard of eco-labelling process for achieving certification by the MSC-standard, following general conclusions can be drawn:8

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8 Information based on personal communication with Meredith Lupouch, WWF Community Fishery Programme
Incentives for Eco-Labelling:

Interest of fishery communities to participate in an eco-labelling process is often not primarily focused and motivated by market-related issues such as market access, sales revenues and potentially higher returns, but more based on the overall resulting positive “side-effects” of the eco-labelling process.

The multi-stakeholder and participative approach of eco-labelling within a fishery community can be a transformative and beneficial process in creating raised awareness for natural resources, gaining knowledge on the marine environment and improve practises for sustainable exploitation as well as develop efficient and locally adopted fishery management.

Additionally, through WWF’s wide network and access to both national and international scientific and research institutions, participating local fishery communities gain access to these knowledge bodies.

Constraints for Eco-Labelling:

In regard of constraints of eco-labelling for community fisheries, WWF has learned that costs involved in the process of eco-labelling as well as the problems being encountered with fisheries data deficiency are indeed an issue and a challenge when undergoing process of fishery assessment and certification. However - according to WWF’s experience - financial problems can be tackled and mostly be overcome with by appropriate involvement of national as well as international funding partners from the private and public sector.

Past experiences have shown that data deficiency as such is not a specific problem being predominant in fisheries of developing countries, nor restricted to small-scale operations. Data deficiency is experienced in large and small fisheries around the globe.

The organisational level of a fishery and its geographic operating range has proven to be one crucial factor concerning the level of data-deficiency and overall feasibility of eco-labelling with fisheries.

Well organised fisheries tend to have implemented good means of communications within the individual participating actors as well as some system of data monitoring and recording of catches. In this regard far dispersed fisheries with low level of communication and exchange of data and low organisational status are more difficult to deal with.

Overall Conclusions:

WWF’s Community Fishery Programme does regard the process of undertaking MSC-assessment and certification of a fishery as a valuable guiding tool within a framework of different approaches and concepts to lead a fishery and its associated social and environmental communities into a sustainable future.

The final result of the MSC-process itself – a certified fishery labelled with the blue logo – is often not perceived as the main and most important achievement- it is the participative and demanding process of certification that creates a beneficial and fertile framework for achieving long term awareness for sustainability in the fishery amongst all stakeholders.
4. Fishery Sector of Senegal

4.1 Socio-economic Importance of Fishery

With the crisis of the nation’s agriculture sector due to increasing draughts and unfavourable climatic changes in the main agriculture production areas, the Fishery has shifted to become the most important economic sector of Senegal. The Senegalese fishery sector has artisanally been a very essential part of rural development and its multifunctional activities are well and deeply integrated in the national economy and the Senegalese society. Today’s fishery sector plays a key strategic role for the sustainable development of Senegal’s economy by significantly contributing to national export revenues, job opportunities, local income sources as well as protein supply for the people.

Fish stands out as an important source of food protein in Senegal and significantly contributes to the nation’s food security. Since the breakdown of agriculture and animal husbandry - the artisanal sources for animal and vegetable protein - fish and fishery products have increasingly become more important and today contribute more than 75% to the human consumption of animal protein. Fish is relatively cheap – and in comparison to other sources of animal protein – it is also affordable for poorer people where fish often is the only source of valuable animal protein in Senegal.

The fishery sector has been playing a key role in Senegal’s politics for the creation of employment. Today the sector is generating more than 100’000 direct jobs (fishermen), the majority being provided by the artisanal fishery. Some other 600’000 jobs are directly linked to the fishery sector, therefore providing employment and income for more than 15% of Senegal’s active working force.

The immanent importance of the fishery sector to Senegal’s national economy is further underlined by the fact that since 1986, export revenues from fish and fishery products are by far the most important source of foreign exchange in regard of the countries chronicle trade deficit. The sector contributes closely to 30% of the total value of exported goods – generating more revenues than the two next important commodities - peanuts and phosphate fertilizers – combined.

With an annual turn-over estimated at 278 Billion FCFA, the fishery sector generates an added-value of roughly 80 Billion FCFA, from which the capture fisheries generate 60% and the processing and transformation sector 40%. The fishery's sector production represents 11% of the primary GDP and 2.3% of the total GDP.

The fishery sector does also contribute to the direct income of state treasuries through various fishery agreements with foreign nations. These countries do pay annual fees in return for access by a specified number of their fishing vessels to stocks in Senegal’s Exclusive Economic Zone (EEZ).

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9 Participation in Artisanal Fisheries Management for Improved Livelihoods in West Africa, FAO 2002
4.2 Description of Fishery Sector

In Senegal, the fishery is based on its two main sub-sectors, the industrial fishery and the artisanal fishery. It is important to note, that since its beginning in colonial times, the industrial fishery has been focused mainly on exportation and the provisioning of processing facilities with raw material, whereas the artisanal fishery has been primarily supplying the needs of the local markets.

This pattern has been drastically shifting in recent years, and today, the artisanal fishery sector is supplying the exportation industry with more than 60% of its raw material for processing. Thus Senegal's fishery sector is strongly dominated by its small-scale artisanal fishery which in 2006 contributed 90% of total landings of fish and seafood products along the nation’s coast.

4.2.1 Fishing Capacity

Senegal’s fishing capacity has been increasing constantly during the recent years. Whereas the figures in relation to the number of registered fishing vessels show a slight decrease for the industrial fishery, the number of boats and fishermen in the artisanal fishery sector has been steadily increasing during the last 25 years by more than 65% (Table 1).

<table>
<thead>
<tr>
<th>Year</th>
<th>Industrial Fishery</th>
<th>Artisanal Fishery</th>
</tr>
</thead>
<tbody>
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<td>Foreign Fleet</td>
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<td>2004</td>
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<td>2005</td>
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<td>53</td>
</tr>
<tr>
<td>2006</td>
<td>119</td>
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</table>
4.2.2 Production Volumes

Total production volumes from Senegalese marine capture fisheries have been remaining on the same level over the past 10 years. After an increase between 1999 and 2005, total capture volumes in 2006 decreased by 20%. Whereas capture volumes for molluscs seem to remain on a constant level, landings of crustacean show a decrease within the same period (Table 2).

**Table 2:** Development of Senegalese production volumes of fish, molluscs and crustacean from marine capture fisheries 1999 – 2006 [in 10^3 Metric Tons]. Source: Senegalese Department of Fisheries (DPM).

<table>
<thead>
<tr>
<th>Species</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
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</tr>
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<td>40,1</td>
<td>35,8</td>
<td>31,5</td>
<td>32</td>
<td>26</td>
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<tr>
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<td>5,3</td>
<td>4,8</td>
<td>4,6</td>
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<td>4</td>
<td>5</td>
<td>7</td>
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<tr>
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<td>3,1</td>
<td>6,2</td>
<td>5,2</td>
<td>5</td>
<td>4,5</td>
<td>3,7</td>
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<tr>
<td>TOTAL</td>
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<td>52</td>
<td>48</td>
<td>46,6</td>
<td>41,8</td>
<td>42</td>
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<td><strong>Artisanal Fishery</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>288,3</td>
<td>322,2</td>
<td>318,2</td>
<td>292,8</td>
<td>368,2</td>
<td>375,7</td>
<td>385</td>
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<tr>
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<td>15,8</td>
<td>17,2</td>
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<tr>
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<td>3,1</td>
<td>2,5</td>
<td>1,2</td>
</tr>
<tr>
<td>TOTAL</td>
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<td>338,1</td>
<td>332,4</td>
<td>311,5</td>
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<td>396</td>
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<td><strong>Total Capture</strong></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Fish</td>
<td>338,1</td>
<td>364,4</td>
<td>358,3</td>
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<td>401,7</td>
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<td>Molluscs</td>
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<td>21,5</td>
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<td>21,2</td>
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</tr>
<tr>
<td>Crustacean</td>
<td>29,8</td>
<td>6,6</td>
<td>5,6</td>
<td>8</td>
<td>7,1</td>
<td>8,1</td>
<td>7</td>
<td>4,9</td>
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<tr>
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<td>358</td>
<td>427,5</td>
<td>438</td>
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<td>347,9</td>
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</table>
The relative contribution of artisanal fisheries to total landing volumes has been increasing for fish and crustaceans during the past years. The artisanal fishery today supplies the vast majority of total volumes of fish (94%), two third of Molluscs (63%) and roughly one quarter of total landings of crustaceans (25%) (Table 3).

**Table 3:** Relative contribution of industrial and artisanal fisheries to the total capture volume of Senegalese production of marine fish, molluscs and crustaceans 1999 – 2006. Source: Senegalese Department of Fisheries (DPM).

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
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<tbody>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
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<td>11</td>
<td>11</td>
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<td>7</td>
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<tr>
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<td>89</td>
<td>93</td>
<td>93</td>
<td>93</td>
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<tr>
<td>Molluscs</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Industrial</td>
<td>15</td>
<td>30</td>
<td>30</td>
<td>21</td>
<td>24</td>
<td>20</td>
<td>22</td>
<td>37</td>
</tr>
<tr>
<td>Artisanal</td>
<td>85</td>
<td>70</td>
<td>70</td>
<td>79</td>
<td>76</td>
<td>80</td>
<td>78</td>
<td>63</td>
</tr>
<tr>
<td>Crustacean</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
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<td>56</td>
<td>55</td>
<td>77</td>
<td>73</td>
<td>62</td>
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<td>75</td>
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<tr>
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<td>23</td>
<td>27</td>
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</tr>
<tr>
<td>Artisanal</td>
<td>80</td>
<td>87</td>
<td>88</td>
<td>87</td>
<td>90</td>
<td>90</td>
<td>92</td>
<td>91</td>
</tr>
</tbody>
</table>
4.2.3 Value of Fishery Production

Total annual turnover of the Senegalese fishery sector is estimated at 278 Billion FCFA, from which the primary production sector (the fishery) contributes up to 40%. Two thirds of the total value is generated by fish (65%), 20% by molluscs and 15% by crustaceans (Table 4).

<table>
<thead>
<tr>
<th>Species</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
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</thead>
<tbody>
<tr>
<td>Fish</td>
<td>17 789</td>
<td>15 583</td>
<td>13 955</td>
<td>13 066</td>
<td>15 322</td>
<td>11 014</td>
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<td>3 279</td>
<td>11 361</td>
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<td>52 13</td>
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<td>13 550</td>
<td>10 883</td>
<td>6 447</td>
<td>11 470</td>
<td>10 322</td>
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<tr>
<td>Fish</td>
<td>39 197</td>
<td>44 218</td>
<td>50 657</td>
<td>52 489</td>
<td>58 811</td>
<td>55 251</td>
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<td>5 035</td>
<td>19 328</td>
<td>21 167</td>
<td>16 165</td>
</tr>
<tr>
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<td>3 904</td>
<td>3 764</td>
<td>2 306</td>
<td>2 483</td>
<td>3 087</td>
</tr>
<tr>
<td>Fish</td>
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<td>59 801</td>
<td>64 612</td>
<td>65 555</td>
<td>74 133</td>
<td>66 265</td>
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<tr>
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<td>9 951</td>
<td>8 314</td>
<td>30 689</td>
<td>26 381</td>
<td>21 378</td>
</tr>
<tr>
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<td>17 454</td>
<td>14 647</td>
<td>8 753</td>
<td>13 953</td>
<td>13 409</td>
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<td>87'206</td>
<td>87'573</td>
<td>104'997</td>
<td>114'467</td>
<td>101'052</td>
</tr>
</tbody>
</table>

4.2.4 Enforcement and Application of national Fishery Regulations

It is undeniable that the regulation of the fishery sector in Senegal today presents some serious gaps – the general assessment is that regulation of the fishing sector is not only badly applied but also insufficiently and ill adapted to the reality in the field. Furthermore, the conflicts relative to the types of fishing or the demarcation of the fishing zones are increasing amongst the different categories of actors working in the sector. 11

In regard of regulation of the fishery sector, Senegal has adopted the FAO Code of Conduct for responsible Fisheries which has been embedded in national law in 1998. However, Senegal has been experiencing multiple difficulties and constraints in application and enforcement procedures of the code of conduct and the resulting national fishery law and regulations since then.

The non-application of the fishing regulation comes from the inefficiency of the system use of control and surveillance. The reality in the field reveals other negative points such as the lack of human, financial and logistical resources as well as the absence of procedures to pronounce immediate sanctions.

11 Policy Implementation and Fishery Resource Management: Lessons learned from Senegal, UNEP 2004
Especially the artisanal fishery sector has been excluded from any regulatory means: Whereas the industrial fishery sector has been subject to an officially enforced licensing, registration and fishing ground access process, the artisanal fishing fleets were granted free access to the fishing grounds along the Senegalese coast.

Only since 2005, the pirogues must pay an annual fee for access to the fishing grounds, which depends on the length of the fishing vessel and varies between 10 000 and 25 000 FCFA. With today’s increasing problems of over-fishing, Senegalese officials are seeking to further improve enforcement procedures in the artisanal fishery sector by means of individual registration of fishing vessels as well as through locally based fishery committees that shall regulate and enforce fishery quotas, gear, surveillance efforts as well as food-safety procedures in the various landing sites.

4.2.5 Fisheries Agreements with the European Union

Fisheries agreements are part of a broader set of relationships that exist between the EU and its former colonies. The negotiations of access rights are part of the Lomé Accords, in which the commitment of the EU to encourage the development of domestic fleets and fishery management support is combined with the access of EU fleets to the waters.

The reasoning for developing countries entering into fishery agreements with the EU is often based on the fact that the local existent fishery sector does not have the technical and financial means for exploiting the vast marine resources off the coast within the Exclusive Economic Zone (EEZ) of the country – therefore foreign fleets at least do provide some form of economic returns for these countries through payment of licences for fishing on stocks found off their coasts.

Since 1979 Senegal has entered into more than nine consecutive fisheries agreement with the European Union. The agreements allow EU vessels to enter and exploit Senegal’s Exclusive Economic Zones (EEZ) in exchange of annual fees and within an agreement framework of additional measures being negotiated on a two years basis until 1996 and on a four years basis from 1997 until 2006.

As time passed and more information about the ecological impact of fishing practices in Western Africa became available, certain sustainability and social justice measures have been added to the agreements. As such, pelagic species that are predominantly fished by local artisanal fishermen cannot be licensed in Senegal, and EU vessels are not allowed to fish within 6 to 12 miles off the coast of Senegal. This zone is exclusively defined and open for access to artisanal local fishermen.

In addition to that, catch allowance for fully- or over-exploited fish stocks have been limited and included in the agreements, as well as vulnerable fishing zones have been reduced in size, allowing only small EU-vessels to come close to the coast. In addition, two-months biological rest periods have been included, and by-catch limits have been established, while some areas have been designated as no-fishing zones throughout the year.¹²

Other than the financial compensation and the above mentioned fishery management development, the agreements with the EU offered some additional innovations and improvements for the Senegalese fishery sector, mainly related to fishery surveillance, scientific research as well as the capacity building of local institutions and organisations within the national fishery sector.

Beside these beneficial and positive contributions to the development of the Senegalese fishery sector, there have also been increasing critics in regard of the EU fishery agreements. The fact that some major fish stocks off the coast of Senegal - especially demersial fish species - are depleted or over-fished, does question the legitimacy of

¹² Information on EU Fisheries Agreement in Senegal in Report Trade Matters 2005
Fishery agreements being negotiated under the assumptions and conditions that there is a surplus of fishing potential that can not be explored by a nation’s own fleet.

Other critics concern the general fact that the position of developing countries in the negotiation process with powerful partners such as the EU is rather limited and often not equal. In addition to that, the overall financial benefits of the agreements for the local fishery sector are rather limited, since the revenues to also contribute to other sectors of the economy and the public sector.

To date, the EU fisheries agreements have come to a close, and the EU has been embarking on new negotiations with Senegal to re-establish fishing rights for EU vessels in Senegal’s EEZ. This time, the agreements are called Fishery Partnership Agreements. Until today, the negotiation did not yield concrete results and therefore for the time being, EU vessels are not allowed to fish in Senegalese waters anymore.

4.2.6 Fisheries Agreements with other Nations

Beside the fisheries agreement with the EU, there have been additional fishery agreements with other nations still being in place today. These do concern mainly the Senegalese fishery agreement with Japan, dealing with Japanese rights to fish for tuna off the coast of Senegal and various South-South agreements with neighbouring countries such as the Ivory Coast, Nigeria, Guinea Bissau and Mauritania.
4.3 Description of Senegalese Artisanal Fishery Sector

4.3.1 Fishing Vessels

Artisanal coastal fisheries in Senegal are based on handcrafted wooden boats called *Pirogues*. During the past years, the artisanal fishery sector has been experiencing a development into more diverse and versatile fishing practices and gears applied, a process which is today also reflected by the variety of vessels and pirogues being used for specific purposes.

Today almost all vessels are equipped with outboard engines, differing in size and performance depending on the size and purpose of the vessel. Artisanal vessels can not only be described by their sizes, but also by their specific purpose, as following overview indicates:

<table>
<thead>
<tr>
<th>Size</th>
<th>Purpose</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Daily Catch</td>
<td>Pirogues going out only for one day, usually in the early morning and returning in the afternoon. Often small pirogues limited in their range of action. Fish is stored in isolated Styrofoam boxes filled with ice and brought ashore within 8 hours of catch.</td>
</tr>
<tr>
<td>Medium</td>
<td>Ice Vessel</td>
<td>Special pirogues for the purpose of storage and transportation of ice onto the sea. Ice is being transferred to other pirogues on the sea. Usually medium sized.</td>
</tr>
<tr>
<td>Large</td>
<td>Storage Vessel</td>
<td>Special vessels referred to as <em>Pirogues Glacier</em> for on-sea storage and transportation of fish. Some vessels have an ice storage capacity of more than 15 tonnes. They can stay on sea for more than 14 days, often fishing in distant water off the Western African coast (Guinea, Sierra Leone, Ivory Coast). Fish is stored on ice for up to 12 days before it is being landed ashore.</td>
</tr>
<tr>
<td></td>
<td>Seine Vessel</td>
<td>Pirogues for seine fishing activities</td>
</tr>
<tr>
<td></td>
<td>Angling Vessel</td>
<td>Pirogues for line fishing activities</td>
</tr>
</tbody>
</table>

4.3.2 Authorized Fishing Devices

Under the Senegalese jurisdiction, a variety of small-scale fishing devices are officially authorized for use in Senegalese waters. These devices are pre-dominantly used by the artisanal fishery sector. With most of the devices there are problems in regard of regulation of mesh sizes, length and drop as well as the spatial and time-wise use of the devices in waters off the Senegalese coast.

Following overview lists the main officially authorized devices being used by the artisanal fishery sector today and shortly describes main use and potential problems in regard of sustainable harvesting practises.

Passive Gear: Bottom Gill Nets  Length, drop and dimensions of the meshes are based on the targeted species. Dormant bottom gill nets are being used for fish such as *Sardinella mullet*, sea snails such as *Cymbium spp.* and different species of lobsters.
**Passive Gear:**

<table>
<thead>
<tr>
<th>Device</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Gill Nets</td>
<td>This device has been experiencing significant changes lately such as increasing the length (from 300 to more than 1000 m) as well as in the nets’ drop, allowing for fishing in deeper zones. Today it is a very versatile device, allowing for fishing at surface as well as at the bottom, threatening fishery sustainability.</td>
</tr>
<tr>
<td>Shrimp Nets</td>
<td>Shrimp nets are most actively used in estuaries, where fishing is subject to authorized opening and closing of capture seasons. Most problems related to shrimp nets is decreasing mesh size.</td>
</tr>
</tbody>
</table>

**Active Gear:**

<table>
<thead>
<tr>
<th>Device</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beach Seines</td>
<td>This device is important for coastal communities and is being practiced on the coastal front and continental zone. Nets’ length varies between 500 – 2000 m. The use of very small mesh sizes has a detrimental impact on coastal habitats and the reproduction capacity of fish populations.</td>
</tr>
<tr>
<td>Purse Seines</td>
<td>Most purse seines have a length of 400 m and a drop of up to 50 m. They are the most common gear used for small coastal pelagics such as Sardinellas and Mackerels. They are used by larger pirogues (20 m). The heavy pressure on fish resources exerted by this type of gear has been causing local over-fishing lately.</td>
</tr>
<tr>
<td>Surrounding Gill Nets</td>
<td>This type of seine measures 300 – 450 m in length and 7 - 12 m in drop with mesh sizes between 60 mm and 80 mm. They are used by medium sized pirogues (10 – 15 m) and mainly targeting Sardinellas.</td>
</tr>
<tr>
<td>Cast Nets</td>
<td>This is a device used in all coastal zones alone or in combination with other devices. Cast net fishing is considered as subsistence activity mainly. Heavy pollution along the coast has been limiting the development of this type of artisanal fishing.</td>
</tr>
<tr>
<td>Single-Lines</td>
<td>Single lines are predominantly used by small pirogues (5 – 8 m). They are of less detrimental effect and very selective.</td>
</tr>
<tr>
<td>Multi-/ Long-Lines</td>
<td>Multi and long-lines are used by smaller and medium sized pirogues throughout the coast of Senegal.</td>
</tr>
</tbody>
</table>

4.3.3 Banned small-scale Fishing Devices and Practices

Fishing techniques and devices that are officially banned by Senegalese authorities include fishing by using **Explosives** or **Poison** and the use of **Monofilament** or **Multifilament Nylon Nets**.

These methods are still being used by the small-scale fishery sector due to non sufficient enforcement and sanction procedures by the local authorities. Illegal fishing practices are today partially responsible for the destruction of marine fauna and flora (also see section 4.2.4 on Senegalese fishery regulation and enforcement).

4.3.4 Artisanal Fishery Activity

The Senegalese artisanal fishery activity can be best described as being very versatile, highly diverse and disperse, both on a spatial and species specific scale. The majority of pirogues do not have a fixed location – that is a fishing base and its corresponding capture grounds – rather most fishermen are migrating with their pirogues along the coast, following the patterns of distribution and abundance of the species being caught. Catches are landed at the most suitable landing sites, often far away from the original home of the pirogues.
Senegalese artisanal fishing boats are frequently venturing into distant waters off the coast of other Western African countries – some larger pirogues go down as far as Nigeria, fishing within the coastal zone of other countries, and landing the fish either in foreign ports or shipping it back to Senegalese landing sites.

4.3.5 Landing Sites approved for Export to EU

From the total of 200 landing sites for artisanal fisheries in Senegal there are actually 8 mayor landing sites approved and licensed for export to EU. These sites should meet specific requirements regarding infrastructure and management of proper food-safety and hygiene measures. They have been set-up at the most important landing sites along the coast regarding volumes and types of species being landed. Landed fish is transferred from these sites to further processing into the Dakar area, from where the bulk of finished products are exported.

4.3.6 Infrastructure and Food-Safety Conditions

On-site visits of landing sites in February 2007 and discussion with various stakeholders from the fishery industry and governmental bodies revealed a critical picture in regard of infrastructure and food-safety conditions being implemented on-site.

In regard of food safety and product hygiene measures the most critical points do concern the process of handling of the fish landed at the various landing sites along the coast until the fish is transported to the processing facilities in the Dakar area. Once the fish is received by the processing facilities, there are no mayor food safety issues at stake, since most companies have invested in appropriate processing infrastructure and proper hygiene measurements.

Traditionally, fish is being sold by artisanal fishermen to intermediaries or directly to the agents of the processing facilities. The fish landed is transferred from the vessels to the loading docks by dedicated carriers, which do carry the fish by various means and often deposit the fish on ground, giving way to multiple risks of microbial contamination.

Also, the hygiene level and the cleanliness of the fish transporting boxes must be regarded as insufficient and the cooling chain from the vessels to the processing facilities offers significant room for improvements.

In regard of product freshness, the artisanal daily fishery with small pirogues offers significant advantages over the fishery with larger vessels that are normally fishing for several days up to two weeks on the sea. Due to diminishing returns and captures off the Senegalese coast, more and more larger Senegalese artisanal fishing vessels are venturing into distant waters off the coast of Gambia, Guinea, Sierra Leone and Ivory Coast, where they fish the coastal waters and return to the landing sites in Senegal, often landing fish that has been caught for several days and stored on ice in Styrofoam boxes, without the possibility of active cooling.

4.3.7 Status of Fishery Management

It is today widely acknowledged that the Senegalese artisanal fishery sector does have some serious deficits in regard of fishery management efforts and procedures. Basically, as already mentioned in section 4.2.4, the sector has been granted free access to basically all marine resources along the coast with no enforced regulations.

With thousands of pirogues migrating along the coast, fishing on diverse species with multiple gears and devices and finally landing their catches in different landing sites along the coast, is basically impossible to introduce even a basic fishery management. Senegalese officials therefore do not know which artisanal boats do fish on which grounds, what they actually land and how much they fish.

The sector will face several challenges ahead in the realm of introduction of more sustainable fishing practices and basic fishery management which also tackles the
artisanal fishing fleet, which is exerting by far the larger pressure on local marine
resources than the industrial fishery.

4.3.8 EU-Approval for Export

The EU Food and Veterinary Office of DG SANCO is regularly inspecting fish exporting
countries with regard to meeting the conditions for supply of fishery products to the EU
market. The requirements do encompass food-safety and hygiene measures as well as
the process of product traceability and labelling of origin.

In order to be able to export to the EU, local authorities must guarantee that fishery
products are only landed at landing sites which are meeting the required hygiene
conditions and are specifically approved for export to the EU. The system of compliance
involves regular inspections and control of the landing and storage conditions at the
landing sites, including hygiene checks on fishing vessels and along the product chain
involving all product handlers in between.

Until today, Senegal has been granted access to EU markets for compliance with EU
food-safety requirements - however this approval has been subject to various official
reconsiderations and in depth compliance inspections by the EU food and veterinary
office.

The actual EU compliance deficiency in Senegal is mainly related to the artisanal fishery
sector. Insufficient food safety and hygiene measures at landing sites as well as the non-
existence of a traceability system for fish products from artisanal fisheries are actually
threatening the export approval to the EU for the entire national fishery sector, including
the industrial fishery.
4.4 Status of Stocks

The Canary current with its up-welling of nutrient rich waters along the Western African coast has since long time been providing one of the world’s richest fishing grounds. As such, they have been discovered by local and international fishing fleets which have been exploiting the marine resources with increasing efficiency. Today, the once rich and abundant fish populations have been drastically decreased and the Western African marine region is suffering from overexploitation.

The Senegalese fishery sector is especially hard hit. Through the steady increase in local fishing capacity and improvements in fishing techniques, the role of local fisheries – dominated by the artisanal fishing fleets - contributing to the overall catch volumes has been increasing in recent years. Combined with the pressure on stocks applied by the industrial fishery sector as well as by foreign fishing fleets, this development has led to the actual fishery crisis with diminishing returns and clear signs of exhaustion of the carrying capacity of local fishing grounds off the coast of Senegal.

Up-date expert consultations and recent information from the FAO fishery subcommittee for the Eastern Central Atlantic indicate that the majority of fish and other commercial stocks off the Senegalese coast must be rated as fully to over-exploited (Table 5). For some of the stocks such as the Thiof (Epinephelus aeneus), the Octopus (Octopus vulgaris) and the Cuttlefish (Sepia spp.) the situation has been rated as being very serious critical.14

Table 5: Overview of actual estimation of the status of fish stocks off the Senegalese coast and other marine regions in the Eastern Central Atlantic Zone. Source: FAO Fishery Subcommittee for the Eastern Central Atlantic.

<table>
<thead>
<tr>
<th>Species Group Assessed</th>
<th>Exploitation Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal Pelagic</td>
<td>- fully exploited</td>
</tr>
<tr>
<td></td>
<td>- some species over-exploited</td>
</tr>
<tr>
<td>Tunas</td>
<td>- fully exploited</td>
</tr>
<tr>
<td>Demersal Fish</td>
<td>- moderately to fully exploited</td>
</tr>
<tr>
<td></td>
<td>- some species over-exploited</td>
</tr>
<tr>
<td>Cephalopods and other Molluscs</td>
<td>- fully to over-exploited</td>
</tr>
<tr>
<td>Shrimps and other Crustacean</td>
<td>- fully exploited</td>
</tr>
<tr>
<td></td>
<td>- some species over-exploited</td>
</tr>
</tbody>
</table>

For some stocks the state can not be given because of uncertainties in the basic data making the assessments unreliable or due to inconclusive results using different data series. The FAO Sub-Committee noted the conclusion that the majority of the demersal stocks assessed were heavily exploited, and that for some of them, fishing effort need to be considerably reduced.

13 FAO Fishery Subcommittee for the Eastern Central Atlantic: Reports from the 17th session in Dakar, Senegal 2004 & 4th session of the scientific sub-committee in Accra, Ghana 2005
4.5 Export Markets

4.5.1 Development of Fish and Fishery Products Export

Export of fish and fishery products has been playing a major role in creation of foreign currency revenues for the Senegalese economy. In 2005, Senegal exported more than 80'000 tonnes of fish and fishery products at an estimated value of 154’573 FCFA (Table 6). In comparison to 2004, the export volume in 2005 decreased by 11% in volume and 6.5% in value.


<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Export Volume [in MT]</th>
<th>Estimated Export Value [in Mio FCFA]</th>
<th>Mean Value per unit [in Mio FCFA per MT]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>93 674</td>
<td>93 674</td>
<td>1.00</td>
</tr>
<tr>
<td>1995</td>
<td>103 465</td>
<td>108 697</td>
<td>1.05</td>
</tr>
<tr>
<td>1996</td>
<td>107 080</td>
<td>158 844</td>
<td>1.48</td>
</tr>
<tr>
<td>1997</td>
<td>112 157</td>
<td>166 647</td>
<td>1.49</td>
</tr>
<tr>
<td>1998</td>
<td>109 488</td>
<td>174 196</td>
<td>1.59</td>
</tr>
<tr>
<td>1999</td>
<td>124 338</td>
<td>185 435</td>
<td>1.49</td>
</tr>
<tr>
<td>2000</td>
<td>88 020</td>
<td>186 263</td>
<td>2.12</td>
</tr>
<tr>
<td>2001</td>
<td>87 032</td>
<td>181 142</td>
<td>2.08</td>
</tr>
<tr>
<td>2002</td>
<td>87 641</td>
<td>181 484</td>
<td>2.07</td>
</tr>
<tr>
<td>2003</td>
<td>95 965</td>
<td>164 017</td>
<td>1.71</td>
</tr>
<tr>
<td>2004</td>
<td>92 469</td>
<td>165 143</td>
<td>1.79</td>
</tr>
<tr>
<td>2005</td>
<td>83 104</td>
<td>154 573</td>
<td>1.86</td>
</tr>
</tbody>
</table>

During 1994 and 2004, the total volume of exported fish and fishery products experienced an increase in the years of 1994 – 1999 by 30 %, followed by a sharp decline in the consecutive years in the range of –30%. Due to an increase in the mean value of the export products, the total export value did follow another pattern of development.
4.5.2 Main Species for Export Markets

The Senegalese waters off the coast offer habitat to a rich marine wildlife which is also reflected in the wide range of different species being caught by the fishery sector.

For export markets outside the African continent, which is being considered in this study for market access of eco-labelled products from Senegalese fisheries, following species are considered as the main export commodities:

<table>
<thead>
<tr>
<th>Scientific</th>
<th>Local</th>
<th>French</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fish</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sardines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Sardinella aurita</em></td>
<td>Yaboi meureuk</td>
<td>Sardinelle ronde</td>
<td>Round Sardinella</td>
</tr>
<tr>
<td><em>Sardinella maderensis</em></td>
<td>Yaboi tass</td>
<td>Sardinelle plate</td>
<td>Madeiran Sardinella</td>
</tr>
<tr>
<td>Ethmalosa fimbriata</td>
<td>Obeu</td>
<td>Ethmalose</td>
<td>Ethmalosa</td>
</tr>
<tr>
<td>Mackerels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Trachurus trachurus</em></td>
<td>Diai bou gnoul</td>
<td>Chinchard Noir</td>
<td>Horse Mackerel</td>
</tr>
<tr>
<td><em>Trachurus trecae</em></td>
<td>Diai bou gnoul</td>
<td>Chinchard Noir</td>
<td>Horse Mackerel</td>
</tr>
<tr>
<td><em>Decapterus ronchus</em></td>
<td>Diai</td>
<td>Chinchard Jaune</td>
<td>False Scad</td>
</tr>
<tr>
<td>Groupers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Ephinephelus aeneus</em></td>
<td>Thiof</td>
<td>Mérou gris</td>
<td>Grey Grouper</td>
</tr>
<tr>
<td><em>Ephinephelus guaza</em></td>
<td>Kathieu</td>
<td>Mérou jaune</td>
<td>Yellow Grouper</td>
</tr>
<tr>
<td><em>Ephinephelus caninus</em></td>
<td>Rour</td>
<td>Mérou rouge</td>
<td>Red Grouper</td>
</tr>
<tr>
<td><em>Cephalopholis taeniops</em></td>
<td>Kelle</td>
<td>Mérou à points bleus</td>
<td>Blue Spotted Grouper</td>
</tr>
<tr>
<td><em>Serranus scriba</em></td>
<td>Kelle</td>
<td>Serran écriture</td>
<td>Painted Grouper</td>
</tr>
<tr>
<td><em>Mycteroperca rubra</em></td>
<td>Yatante</td>
<td>Badéche</td>
<td>Mottled Grouper</td>
</tr>
<tr>
<td><em>Pseudopeneus prayensis</em></td>
<td>Ngor sikim</td>
<td>Rouget</td>
<td>Mullet</td>
</tr>
<tr>
<td>Tongue Sole</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Cynoglossus spp.</em></td>
<td>Tapalé</td>
<td>Sole langue</td>
<td>Tongue Sole</td>
</tr>
<tr>
<td>Tunas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Thunnus albacares</em></td>
<td>Wakhandar</td>
<td>Albacore</td>
<td>Albacore</td>
</tr>
<tr>
<td><em>Thunnus obesus</em></td>
<td>Wakhandar</td>
<td>Patudo</td>
<td>Tunny</td>
</tr>
<tr>
<td><em>Katsuwonus pelamis</em></td>
<td>Wakhandar</td>
<td>Listao</td>
<td>Skip Jack</td>
</tr>
<tr>
<td>Sea Bream</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Sparus auriga</em></td>
<td>Yéneu</td>
<td>Pagre rayé</td>
<td>Red banded sea bream</td>
</tr>
<tr>
<td><em>Sparus caeruleostictus</em></td>
<td>Waragne</td>
<td>Pagre à points bleu</td>
<td>Blue spotted sea bream</td>
</tr>
<tr>
<td><em>Sparus pagrus africanus</em></td>
<td>Kibaro bou</td>
<td>Pagre tropiques</td>
<td>Southern sea bream</td>
</tr>
<tr>
<td>Dentex &amp; Hakes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Dentex spp.</em></td>
<td>Mbagne</td>
<td>Denté</td>
<td>Dentex</td>
</tr>
<tr>
<td><em>Merluccius spp.</em></td>
<td>Merlu</td>
<td>Hakes</td>
<td></td>
</tr>
<tr>
<td>Croakers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Pseudotolithus brachygn.</em></td>
<td>Ngoukeu</td>
<td>Otolithe gabo</td>
<td>Law Croaker</td>
</tr>
<tr>
<td><em>Pseudotolithus senegal.</em></td>
<td>Feuteu</td>
<td>Otolithe sénégalais</td>
<td>Cassava Croaker</td>
</tr>
</tbody>
</table>
4.5.3 Export Products

Most of Senegalese fish and seafood export products are frozen (75%) and 10% are exported fresh by air-freight, the remaining 15% consist of conserved fish and fishery products (Table 7).

Table 7: Relative share on total export volume of fresh, frozen and otherwise transformed fish and fishery products in 2004 - 2006. Source: Senegalese Department of Fisheries (DPM).

<table>
<thead>
<tr>
<th>Year</th>
<th>Fresh</th>
<th>Frozen</th>
<th>Canned / Dried</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>8,8%</td>
<td>77%</td>
<td>14,2%</td>
</tr>
<tr>
<td>2005</td>
<td>10,8%</td>
<td>75,7%</td>
<td>13,5%</td>
</tr>
<tr>
<td>2006</td>
<td>9,2%</td>
<td>79,2%</td>
<td>11,6%</td>
</tr>
</tbody>
</table>

4.5.4 Export Markets

Fish and Fishery products are exported within the African continent as well as outside Africa. Since colonial time Europe has been the artisanal export destiny for Senegalese fishery products and today still imports the majority of products (60%). Exports to Asia
and the Americas are of less significance, whereas one third of total export volume is traded within the African continent (Table 8).

**Table 8:** Main exportation destinies by volume for Senegalese fish and fishery products in 2004 - 2006. Source: Senegalese Department of Fisheries (DPM).

<table>
<thead>
<tr>
<th></th>
<th>Europe</th>
<th>Africa</th>
<th>Asia</th>
<th>Americas</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>53,9%</td>
<td>37,4%</td>
<td>7,8%</td>
<td>0,9%</td>
</tr>
<tr>
<td>2005</td>
<td>61,5%</td>
<td>30,9%</td>
<td>6,8%</td>
<td>0,8%</td>
</tr>
<tr>
<td>2006</td>
<td>49,%</td>
<td>41,8%</td>
<td>7,9%</td>
<td>1,2%</td>
</tr>
</tbody>
</table>

Within the European Union, Italy is importing the majority of frozen products, followed by Spain and France. Frozen products are mainly fish (80%), but also cephalopods (15%) and other molluscs (Table 9).

**Table 9:** Main European Importing Countries for Frozen Products by volume for Senegalese fish and fishery products in 2005. Source: Senegalese Department of Fisheries (DPM).

<table>
<thead>
<tr>
<th>Frozen Product Importers</th>
<th>Italy</th>
<th>Spain</th>
<th>France</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Tonnes</td>
<td>15'635</td>
<td>11'403</td>
<td>7'038</td>
</tr>
<tr>
<td>In % of Senegalese Exports</td>
<td>25%</td>
<td>18%</td>
<td>11%</td>
</tr>
</tbody>
</table>

In the fresh product sector the exportations do mainly consists of fish (91%). France is the leading European importer of fresh products (29% of total Senegalese exports) (Table 10).

**Table 10:** Main European Importing Countries for Fresh Products by volume for Senegalese fish and fishery products in 2005. Source: Senegalese Department of Fisheries (DPM).

<table>
<thead>
<tr>
<th>Frozen Product Importers</th>
<th>France</th>
<th>Greece</th>
<th>Spain</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Tonnes</td>
<td>2’638</td>
<td>1’789</td>
<td>1’592</td>
<td>1’514</td>
</tr>
<tr>
<td>In % of Senegalese Exports</td>
<td>29%</td>
<td>19%</td>
<td>17%</td>
<td>17%</td>
</tr>
</tbody>
</table>

In regard of export trade value, the European Union is by far the most important market partner of Senegal, contributing close to 80% of total trade value of exports in 2005.
PART TWO:

PRACTICAL FEASIBILITY OF MSC-CERTIFICATION IN SENEGAL
5. Evaluation of Candidate Fisheries

5.1 Selection Criteria for Candidates Fisheries

In the realm of this feasibility study potential candidates for MSC-certification programme in Senegal have been evaluated and selected for further in-depth analysis. The criteria that have been applied in the selection process are related to the MSC-certification procedures and prerequisites for assessment and compliance.

The following section describes the most relevant criteria being considered in the evaluation process of suitable fisheries. These criteria are not specifically related to the case of Senegal, but are rather considered to be general criteria that should met by fisheries seeking for MSC-certification.

5.1.1 Species / Type of Fishery / Unit of Certification

The definition of the unit of certification is an overall crucial element prior to start any pre-assessment procedures (see section 2.2.3). Single species / single gear fisheries are generally far less complex in the assessment process than multi species / multi gear fisheries. The species’ under consideration spatial distribution and migratory pattern need to be taken into account also. It’s very important to have a clear understanding of the definition of the unit of certification and its implications on the fishery assessment process. Therefore following issues and questions need to be tackled:

- Pattern of abundance of species
- Migratory pattern and behaviour of species
- Fishing activity on the species population (all fishing effort being exerted on the species under consideration)
- Type of fisheries (gears and practices)

5.1.2 Status of Fish Stocks and Sustainability of Fishery

Fish stocks under consideration for certification should ideally be not over-exploited and the fishery should already work on a sustainable basis. The considerations should include following issues:

- Actual status of fish stocks
- Fish stocks should not be threatened / over-fished
- No detrimental fishing practises being practised
- Banned illegal fishing practices applied
- Low level of by-catch / regulations in place
- No marine species endangered
- Potential negative side effects of fishery on marine environment are known

5.1.3 Organization and Management Status of Fishery

The actual organizational status of a given fishery is one crucial element in regard of feasibility of any certification and assessment process. The considerations should include following issues:

- Organisational level of fishery
- Communication means in between all participants and stakeholders
- Fishery management in place
• Effectiveness of fishery management for sustainability
• Compliance with national regulations
• Level of enforcement and control procedures implemented

5.1.4 Market based Considerations for Certification

Since MSC-certification primarily targets high-value export markets, any fishery seeking MSC-certification should exploit species that are suitable and well demanded by the targeted export markets.

In regard of species selection, following market oriented issues should be further considered in the pre-selection process:
• Potential volume of export
• Main export markets
• Value of product
• Potential revenues and net-margins
• Potential for value addition in Senegal

5.1.5 Status of Data & Monitoring Procedures

Availability and reliability of data on the fishery and fish stocks are the fundamental basis of fishery assessment procedures. In order to be able to decide on a fishery’s feasibility of achieving certification, following issues should be carefully considered:
• Level of actual data on fish stocks
• Reliability of data
• Level and reliability of knowledge regarding population dynamics
• Record and monitoring procedures of capture data
• Implementation of precautionary approach

5.1.6 Infrastructure, Food Safety & Traceability

Eco-labelled fishery products must comply with the most stringent standards on food-safety and traceability. This is due to the fact that most final consumer markets are displaying eco-labelled products as strategic premium products – which are subject to specific marketing and consumer communication efforts – and raised expectations not only in regard of sustainability, but also food quality.

This implicates that eco-labelled products are not an anonymously traded commodity and are differentiating against their conventional counterparts - and therefore must comply with all basic requirements such as hygiene and food safety standards.

Eco-labelled products not meeting international food-safety standards can not be marketed and risk of loosing market access and consumer acceptance. Therefore, prior to consider fisheries going into assessment procedures for MSC-certification, following issues in regard of food-safety and product quality should be taken into account:
• Infrastructure for compliance with Food-Safety requirements
• Food-Safety measures implemented on vessels, landing sites and shipment docks
• Hygiene measures being implemented (Best Hygiene Practices)
• Awareness on proper hygiene amongst all fishermen and products handlers
• Installations and procedures to allow for maximum product freshness
• Level of enforcement and constant compliance on site
5.1.7 Community Participation & Stakeholder Interest

Successful initiatives of eco-labelling as means of better managed fisheries are mostly based on local interest and awareness of all stakeholders for the subject of sustainability of fisheries. Thus the level of community interest and stakeholder awareness within a given fishery is one key element of feasibility of eco-labelling.

In this regard during pre-selection of candidate fisheries, following community-based issues should be considered:

- Awareness of local fishery organisation and stakeholders regarding sustainability of fishery and protection of marine resources
- Level of community participation on fishery
- Interest of stakeholders for sustainable fisheries management and eco-labelling
- Local importance of fishery (socio-economics)

5.1.8 Client of Certification

The client of the certification organisation will be the implementing body and responsible entity for all measurements and procedures related to the assessment and certification process. The client of the certification therefore needs the capacity and capability of tackling and managing all issues and processes in regard of the certification and the long term compliance with all imposed and defined regulatory and monitoring activities.

In order to define the client of the MSC-certification on a realistic basis, following issues should be considered and discussed amongst the key-stakeholders:

- Capacity of the organisation in managing the assessment and certification process
- Human capital, technical and financial means and resources available to the client
- Capability of the client organisation in tackling issues of fishery management, regulatory and local enforcement procedures
- Level of acceptance of the client within all stakeholders of the certification process
- Short term, medium term and long term availability and capacity of the client
- Knowledge and capabilities of the client in marketing and market access efforts
5.2 Local Expert Consultation and MSC-Workshop

The contracting parties ENDA/REPAO and Blueyou have conducted a seminar in February with various stakeholders from the Senegalese fishery sector in order to create awareness amongst some key-stakeholders and for discussion and consultation in regard of potential fishery candidates for MSC-piloting projects in Senegal.

Additionally, the MSC-Developing world programme has held a workshop in May 2007 in Senegal together with the local office of WWF, with participation of all relevant stakeholders within the Senegalese fishery sector.

Both workshops together encompassed more than 40 participants, including governmental institutions, fishery associations, research bodies, traders and intermediaries associations, processing and fishing industry companies as well as local NGO’s and international experts.

Both workshops have resulted in recommendations and suggestions from local stakeholders in regard of potential candidates for piloting programmes. Following section offers an overview of the suggested candidates for MSC-certification.

<table>
<thead>
<tr>
<th>Fishery Location</th>
<th>Species</th>
<th>Type of Fishery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cayar</td>
<td>Groupers</td>
<td>Ephinephelus spp.</td>
</tr>
<tr>
<td></td>
<td>Sea-Bream</td>
<td>Sparus spp.</td>
</tr>
<tr>
<td></td>
<td>Cuttlefish</td>
<td>Sepia officinalis</td>
</tr>
<tr>
<td></td>
<td>Octopus</td>
<td>Octopus vulgaris</td>
</tr>
<tr>
<td></td>
<td>Lobster</td>
<td>Panulirus regius</td>
</tr>
<tr>
<td>Nianing</td>
<td>Octopus</td>
<td>Octopus vulgaris</td>
</tr>
<tr>
<td></td>
<td>Cymbium</td>
<td>Cymbium</td>
</tr>
<tr>
<td>Ngaparou</td>
<td>Lobster</td>
<td>Panulirus regius</td>
</tr>
<tr>
<td>Foundiougne</td>
<td>Shrimp</td>
<td>Penaeus notialis</td>
</tr>
<tr>
<td>Dionewar</td>
<td>Shrimp</td>
<td>Penaeus notialis</td>
</tr>
<tr>
<td>Casamance</td>
<td>Shrimp</td>
<td>Penaeus notialis</td>
</tr>
<tr>
<td>Dakar</td>
<td>Thuna</td>
<td>Thunnus albacares</td>
</tr>
</tbody>
</table>

In the realm of the MSC-workshop, the scope and conclusions of this GTZ-Feasibility Study on eco-labelling in Senegal were presented and further discussed. The main constraints, but also the potential benefits for the various actors within the production chain were then further subject to discussions.

The workshop showed that there is a clear interest within the Senegalese fishery sector for eco-labelling activities in the realm of better market access, higher valorisation and better and more sustainable management of the fisheries.

However, as the discussions revealed, there is still lack of information and knowledge on the detailed requirements and the overall implications of MSC-process.

The proposed candidates from both conducted workshops will be discussed in regard of suitability for piloting programme in chapter 7.
5.3 Interest of Industry and Export Markets

Piloting programmes for eco-labelling of fisheries in developing countries are ideally embedded within a supporting framework of all participation stakeholders, not restricted on the local fishery itself, but also on the post-harvest processing, export and final consumer market sector.

Therefore, in the realm of this feasibility study, potential project partners within the local Senegalese fishery industry as well as potential partners on international markets have been contacted and evaluated in regard of their awareness for eco-labelling and interest in participating on a potential future piloting programme.

5.3.1 Local Fish Processing and Export Industry

Several meetings within the Senegalese fish processing industry and exporters of fish and fishery products have shown that there is generally a growing interest to participate in programmes of eco-labelling.

However for a programme of eco-labelling within the artisanal fishery sector, the client of certification will rather be a small-scale fishermen association than a processor or an exporter. This leads to the appraisal that the level of commitment and support from the local fish processing and exporting industry in the realm of a fishery certification programme will rather be limited during the process of the fishery assessment itself. The involvement of post-harvest sector at a later stage, when it will come to the process of chain of custody certification, will possibly further raise the interest and commitment to the initiative for eco-labelling.

Nevertheless, for specific higher value species and export products such as shrimp or cephalopods, there are good chances for integrating a local fish processing and export partner into a piloting programme.

5.3.2 International Market Partners

The actual high demand for fish and seafood produced by certified sustainable fisheries on international markets shows a substantial interest of seafood distribution chains and retail markets in the realm of certification programmes.

Especially for products that have not been subject to MSC-certification until now – e.g. Cephalopods and Shrimp – there is a strong and growing interest and demand from the markets which can support local initiatives – either by directly financially supporting the programmes, or by securing the market access for labelled products by letter of intents or final purchasing contracts.
6. Practical Constraints and Benefits

6.1 Constraints for MSC-Certification

Both the two conducted workshops in Senegal and the various discussions with local fishery stakeholders as well as with international experts showed various practical constraints for MSC-certification within the artisanal fishery sector of Senegal.

6.1.1 Level of Complexity: Type of Fishery & Type of Species

The versatile, multi-species and multi-gear nature of most of the Senegalese artisanal fishery sector does generally increase the level of complexity of fisheries management and eco-labelling.

The combination of the widespread species’ population distribution and migrating patterns of most of the fish targeted, with the multiple fishing efforts being exerted by local pirogues, external pirogues, industrial Senegalese vessels as well as foreign fleets, does make the introduction of a basic, but efficient fishery management – which will be prerequisite for any eco-labelling programme – extremely complex and very difficult to achieve.

The difficulties in introducing a basic fishery management are primarily due to missing regulation and enforcement procedures as well as the absent overall coordination and control on the multiple fishing efforts being exerted by various fleets. As long there is no registration and control of all vessels fishing along the coast, nor any regulation in regard of capture gear and quotas, the registration of capture landings - the essential basis for any fishery management - will be difficult to achieve.

The problem of complexity in the realm of a fishery certification programme can only be tackled at the actual state of the Senegalese Artisanal fishery sector by focusing piloting programmes on very specific, locally restricted fisheries (see Chapter 5.1.1).

6.1.2 Status and Data of Stocks

For most species and stocks that have been suggested as candidates the actual knowledge in regard of status of stocks is not sufficient and therefore can hardly be assessed based on available data. Although various official Senegalese governmental organisations claim to have up-to-date data available on stocks and population dynamics, the published figures do vary between different sources and thus for most species the actual situation remains unclear.

Generally there must be assumed that a majority of fish stocks off the Senegalese coast are over-fished and over-exploited. Also the distribution patterns, population dynamics and the migratory behaviour of some species suggested are not adequately known.

6.1.3 Fishery Regulatory and Enforcement Procedures

As it has been already mentioned in the introductory part of this study (Chapter 4.2.4), the Senegalese artisanal fishery sector has not been subject to any kind of regulation until recently. The actual status of missing regulation within the fishery sector as well as insufficient and inefficient enforcement procedures are a major drawback for any fisheries eco-labelling initiative along the Senegalese coast. However, as some individual local initiatives have shown (e.g. the Artisanal Fishery in Cayar), there are cases of locally induced and self-organised fishery regulation and enforcement initiatives in place, on which future pilot-programmes for eco-labelling can be build on.
6.1.4 Organizational Status

As it has been stated before (Chapter 5.1.3), the organizational status of a given candidate fishery is an essential pre-requisite for any eco-labelling programme. The discussions and evaluations of potential candidates for piloting programmes showed that there are several fisheries along the Senegalese coast that already have implemented a basic system of self-organization. Many artisanal fisheries are organized in local committees, which form the basis for communication and coordination as well as participatory and mutual agreements amongst all stakeholders of a local fishery.

In regard of eco-labelling and organisational status of given fisheries, the main problem will not primarily arise because of lacking organisational level within the local fishery, but rather due to the fact that in most cases, local fishing grounds are also exploited by non-residential fishermen which are not part of local fishery committees. Fishing activities and efforts of such external pirogues can therefore be not controlled nor coordinated accordingly.

Any local eco-labelling initiative must therefore consider and find a process of involvement of external fishermen not being residential to the area, or find methods and means to exclude such fishing activity in the area subject to the achieved sustainable fishery management.

6.1.5 Awareness and Perception of Process of Eco-Labelling

There is a strong awareness and interest of local stakeholders in initiatives for eco-labelling. Of course, this fact is not a constraint and can therefore be mentioned as one of the key-prerequisites for eco-labelling (see Chapter 5.1.7).

However it has been observed that some local stakeholders’ awareness and perception about eco-labelling and its implications on the multiple changes within the fishery sector that need to be addressed and facilitated during the process is rather result- than process-oriented.

Many fishermen and fishery stakeholders seem to partially deny the fact that there really is a problem with their fishery in regard of sustainability. This observation may impose a problem and may be a constraint for the process of eco-labelling: In order to successfully implement changes in the fishery sector, the awareness of all stakeholders that there really is a problem is the essential key and driving force through the process.

Eco-labelling must not be regarded as a simple way and mean for getting better market access and higher prices – it is a complex, time and resource consuming process, eventually ending with final certification, but it's the process and its practical results that is valuable in regard of the sustainability of fisheries.
6.2 Potential Benefits of MSC-Certification

In addition to the already mentioned generally described benefits of eco-labelling programmes of fisheries to local communities, economies and the marine environment (see Chapter 1), a programme for eco-labelling of exported fishery products in Senegal may result in the following specific benefits and potential synergies that act on different levels of local economies and environments.

6.2.1 Enhancement of Fishery Management, Regulation and Enforcement

Eco-labelling in the Senegalese fishery sector can be a practical, private industry initiated process of guiding fisheries on the way towards better and more sustainable management.

It is obvious that the Senegalese fishery sector has serious deficits in this regards – despite the various efforts being taken by the authorities during the past years. Eco-labelling can therefore be an alternative, more practical and straightforward way in achieving better fisheries management – driven by an initiative based on the commitment of all relevant stakeholders.

Since the implementation of an efficient fishery management for the artisanal fishery sector will be prerequisite for going into a programme of eco-labelling, the initiative, the commitment and the motivation in regard of direct potential economic benefits from eco-labelling could be fuelling the long-term process of implementation.

6.2.2 Development of new Markets and higher Product Valorisation

The majority of today's Senegalese exports of fish and fishery products are destined to the European market, where they are mainly sold in Mediterranean countries such as Spain, France and Italy. These countries however are not the main markets for eco-labelled products, since consumer awareness and consciousness tend to be lower there than in countries such as UK, Germany, Switzerland, Netherlands and Scandinavian countries.

With eco-labelled products from Senegal, new markets within Europe can be developed. Also, marketing efforts can be focused on higher product valorisation through direct selling to final retailers. The general tendency of low valorisation of Senegalese fishery products on international markets is partially due to lack of proper marketing and communication strategy on the markets – exporters are selling to high volume importers and until now, the price has been the only criteria in the negotiation process – beside the required food-safety and hygiene standards, which do not open room for possible surplus of value, since these are basic supplying conditions.

Eco-labelling could also offer substantial benefits in this regard. Certified products from sustainable managed fisheries of Senegal could indeed fetch a higher market price – if the products are offered to the appropriate clientele on the basis of a professional marketing strategy.

6.2.3 Synergies with other Fishery-related National Programmes

The conduction of a certification programme on eco-labelling of artisan fisheries in Senegal offers specific synergies in building-up local capacities and capabilities for the facilitation and implementation of fishery related programmes of national importance. Positive synergies can be gained mainly by direct involvement of key stakeholders and governmental bodies in the process of eco-labelling which itself requires the implementation of two main important issues that are also subject to programmes on a national level, notably the programmes for traceability and participatory surveillance of artisanal fisheries and the planned introduction of further marine protected areas.
7. Feasibility of Eco-Labelling in Senegal

7.1 Analysis of Candidate Fisheries for MSC-Certification

The analysis of the suggested suitable fisheries for piloting programmes (Chapter 5.2) show that there are major constraints to be taken into account for the majority of the recommended candidates.

Following overview lists the recommended candidates and evaluates the practical feasibility of MSC-certification according to the basic requirements and conditions being summarized in Chapter 5.1.

<table>
<thead>
<tr>
<th>Proposed Candidate Fishery</th>
<th>Species</th>
<th>Major Constraints for Eco-Labelling</th>
<th>Suitability Piloting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cayar</td>
<td>Groupers</td>
<td>widely dispersed population over-fished</td>
<td>low</td>
</tr>
<tr>
<td></td>
<td>Sea-Bream</td>
<td>widely dispersed population over-fished</td>
<td>low</td>
</tr>
<tr>
<td></td>
<td>Cuttlefish</td>
<td>over-fished / status unknown lack of knowledge on population dynamics</td>
<td>medium</td>
</tr>
<tr>
<td></td>
<td>Octopus</td>
<td>over-fished / status unknown lack of knowledge on population dynamics</td>
<td>medium</td>
</tr>
<tr>
<td>Lobster</td>
<td>Status unknown</td>
<td></td>
<td>medium</td>
</tr>
<tr>
<td>Nianing</td>
<td>Octopus</td>
<td>over-fished / status unknown lack of knowledge on population dynamics</td>
<td>medium</td>
</tr>
<tr>
<td>Ngaparou</td>
<td>Lobster</td>
<td>over-fished / status unknown lack of knowledge on population dynamics</td>
<td>medium</td>
</tr>
<tr>
<td>Foundiougne</td>
<td>Shrimp</td>
<td>Status unknown Organizational Level of Fishery low Impact on industrial Shrimp Fishery</td>
<td>Medium</td>
</tr>
<tr>
<td>Dionewar</td>
<td>Shrimp</td>
<td>Status unknown Organizational Level of Fishery low Impact on industrial Shrimp Fishery</td>
<td>Medium</td>
</tr>
<tr>
<td>Casamance</td>
<td>Shrimp</td>
<td>Status unknown Impact on industrial Shrimp Fishery</td>
<td>Medium</td>
</tr>
<tr>
<td>Dakar</td>
<td>Thuna</td>
<td>Highly migratory species</td>
<td>low</td>
</tr>
</tbody>
</table>

The analysis reveals the fact that in case of low level of fishery management and knowledge on status of stocks, in combination with fishery effort exerted by multiple parties, eco-labelling must be regarded as not feasible.
However the analysis also shows that eco-labelling can be feasible for distinct, geographically confined fisheries exploiting residential species rather than migrating ones. Following species / fisheries have been concluded to be promising candidates for eco-labelling in Senegal:

- Shrimp-Fishery in the Province of Casamance
- Octopus-Fisheries on various places along the Senegalese Coast
- Lobster-Fisheries on various places along the Senegalese Coast

Such smaller fisheries, with a well defined radius of action and effort could be ideal candidates for going into the process of eco-labelling – and therefore serve as valuable field of experience in regard of all local processes and activities that need to be tackled and conducted in order to achieve sustainable fisheries and eco-labelled products.

It has been suggested to the different Senegalese stakeholders to concentrate the efforts on first instance on fisheries with less complexity and thus higher feasibility in achieving eco-labelling. Other fisheries and initiatives may then be added to the Senegalese programme for eco-labelling when fisheries management and coordinated enforcement amongst all participating vessels and fishermen have already reached a higher level of efficiency - this will be of special importance if the higher value demersal fish species shall be subject to certification.

Also, from a marketing and products valorisation point of view, the suggested candidates for eco-labelling offer good chances for attractive market access: Shrimp and Cephalopods have not been MSC-certified so far and there is a strong demand for such products being MSC-certified – making the today prevailing buyers market a potential sellers market.

### 7.2 Eco-Labelling according to other Certification Schemes

As it was mentioned in the introductory part of this study (Chapter 2.1.7), the study's focus has been on feasibility of eco-labelling according to the MSC-standard. However in order to have a complete overview on feasibility of eco-labelling, following section shortly discusses the practical feasibility of fisheries certifications by other available standards (see also Chapter 2).

It's important to state at this point that the study does not cover the issue and question of compliance of other eco-labelling schemes with the FAO Guidelines for Eco-Labelling of Fisheries and Fisheries Products. In this context, the mentioned eco-labelling schemes will be generally regarded as being equally legitimated as the Marine Stewardship Council MSC.

How these other available certification schemes have been developed, how they are set-up and do function and to which extent they deal with the sustainability of a given candidate fishery as well as on how far they are accepted by the markets, can not be subject to this study and shall remain open in this context.

Finally it is the decision of a given fishery and the industry itself on which certification scheme its operation shall be certified for compliance with criteria of sustainable fishing practises.

#### 7.2.1 Friend of the Sea (FOS)

Certification according to the Friend of the Sea (FOS) labelling scheme is mainly based on available information on the actual stock that is selected / targeted for certification. If a certain stock / species is not subject to over-exploitation and if it is exploited with minimum impact in regard of by-catch and detrimental fishing practises, certification by FOS should be feasible.
In specific regard of the Senegalese fishery sector, the main constraints for certification by FOS will probably be the actual status of the majority of Senegalese fish species / stocks which is rated as being fully / or over-exploited and the general low / critical level of accurate data available.

In regard of market potential and valorisation of FOS certified products, the actual status of the FOS-programme and its international market / public acceptance should be studied prior to decision for FOS-application process.

7.2.2 Naturland

One mayor difference between the MSC- and the Naturland-certification scheme is the definition of the certification unit. Whereas with the MSC, the status and management of the entire species population need to be taken into account and assessed during the certification process of a candidate fishery, the Naturland certification has its scope on a fishery defined as a more locally restricted operational unit.

In this regard, certification by Naturland standard could eventually be more realistically achieved within the artisanal fishery sector of Senegal than certification by the MSC. Although it must be stated that also for Naturland certification, the actual status of the entire population will be taken into consideration during the assessment procedures.

Certification of a locally restricted fishery that is being managed and operated sustainable can be denied by Naturland if the fishery is targeting species that are exploited by other fisheries and which are subject to over-exploitation. In such a case, the given fishery must prove a positive impact on the overall species’ population by its locally restricted operational sustainable management. Under practical conditions such requirements must be regarded as difficult to achieve and comply with.

In this regard, the practical constraints for certification of coastal artisanal fisheries by Naturland will probably be in the same range and conditional framework as they have been discussed for certification by the MSC. In regard of market acceptance and potential for certified products, the actually limited market range of Naturland-certified products must be taken into account when deciding on Naturland certification process.

Since the Naturland standard – in comparison to the MSC - is covering basic social issues as well, the conduction of certification process may additionally lead to social benefits for the fisheries communities as well - a potential positive side-effect in regard of the complex socio-economic interactions within the artisanal Senegalese fishery sector.

To which extent the inclusion of social standards into a fisheries eco-labelling scheme does practically lead to benefits on the socio-economic community level, can not be estimated, since there is no information and experience available in this context.

7.2.3 Fair-Fish

The Swiss organisation Fair-Fish has been developing and implementing a small community based fishery pilot-project in the Saloum area. The programme is focusing not only on the sustainable fishery aspect, but also on animal welfare and social issues involved in the small scale fishery sector.

In regard of aspects to sustainable fisheries, Fair-Fish is only exploiting fish species that have been rated as being not-over exploited nor endangered, the actual rating and decision being based on recommendations by Friend of the Sea (FOS) and various national and local fisheries data.

Fair-Fish has been introducing regulations and enforcement procedures for fishing practises, quotas and overall capture efforts and Fair-Fish is actually only targeting fish species that are pre-dominantly restricted to the high-salinity aquatic environment of the Saloum area.
Although in the Fair-Fish project, the problem in regard of impact of a locally restricted certified fishery on the entire species population does remain and should be addressed in a similar way than with the MSC- or Naturland-initiative.

Since the Fair-Fish-Project began in 2003, it has been experiencing various difficulties and constraints in regard of infrastructure, logistics, appropriate volumes for providing the market as well as in the process of setting-up the organisational body of the programme on local grounds.

An actual study has been elaborated in 2007 to investigate on the further practical feasibility of the project’s objectives. The study shows that the Fair-Fish programme can be implemented and build-up to a weekly minimum volume of 1000 kg of filleted fish in order to allow for economical viability of the project itself. In order to do so, considerable financial means will be necessary to operationally run and install the programme on longer term and on local grounds. Main issues to be tackled in the future encompass the integration of social security standards and product traceability into the programme.

The Fair-Fish project in the Saloum area may serve as a practical learning ground for other programmes of eco-labelling in the artisanal fisheries of Senegal. For example, the programmes experiences in regard of implementation of sustainability measures within a small-scale fishery lead to a pragmatic solution: In the realm of non-existent and insufficient reliable data on actual landings and stocks of targeted species, Fair-Fish has chosen a rather simple approach: As long as there are no official quotas for annual landings of a given species, Fair-Fish will not procure fish of more than 20% of the total annual landing volume of the referring species being caught in the area.

The reasoning for such pragmatic regulation should be to prevent that pressure on stocks will be even increasing in the presence of better prices and market access through a programme like Fair-Fish – and therefore the programme self-limits its procurement volume within the area subjected to the certification. Of course, such short-term approaches will not solve the problem of over-fishing on a larger scale, since the project is then only attractive for a smaller part of the fishery community – and efforts should be made towards integration of all stakeholders fishing on a specific population into a programme of eco-labelling.

The need for such regulation directly stems from the fact that the unit of certification with Fair-Fish is not the entire fish stock, but rather a partially and locally restricted fishery exploiting this stock. The fishery activity impact of the Fair-Fish programme being exerted on the entire fish stocks therefore remain difficult to assess – a problem that will be imminent to any certification programme focusing on single and isolated fisheries rather than on entire fish stocks and entire fisheries exploiting them.

Although Fair-Fish may prove on a small-scale level that eco-labelling can be a practical way to introduce more sustainable fishing practises as well as enhance socio-economic conditions in small scale fishing communities in Senegal, the overall future and broader impact must be regarded critically since the programme’s operating market range has been very limited so far by being restricted to Switzerland. Fair-Fish has no market acceptance on international scale so far.

The cost for building-up markets and market acceptance for the Fair-Fish labelling scheme on a broader range within Europe will result in significant costs and requires considerable capacities and capabilities – and the question therefore remains if initiatives like Fair-Fish do not better focus and actively seek cooperation with already well established organisations such as the MSC.
7.2.4 MSC versus other Fisheries Certification Schemes

The observed and discussed constraints and basic practical aspects and challenges in undertaking certification for sustainable management of small scale artisanal fisheries are - on a very general scale - similar for all above mentioned fisheries certification schemes. The main constraints and challenging questions do remain the same: How to improve the operational management of a single candidate fishery within a entire sector that is very versatile in its nature, targeting multi-species with multi-gears, involving multiple stakeholders widely dispersed over a large geographical range and exerting reciprocal influence on fish stocks, additionally being regulated and enforced insufficiently on both national and regional level?

The answer is – no matter which certification scheme is being chosen: Eco-labelling in the Senegalese artisanal fishery sector is only feasible at this stage of the sector’s development status when focusing on locally restricted fisheries, targeting specific species that are not over-exploited, non migratory and where a minimum basis of reliable data is available as well where a basic organizational structure within a candidate fishery is already in place.

If a locally restricted fishery is being chosen as candidate to introduce eco-labelling and therefore more sustainable fishery practises within its specific activity range, the question will always arise to which extent the specific, more sustainable fishery management of the candidate fishery will influence the entire population dynamics of the species’ stocks – and, if the eco-labelled fishery is influencing the entire fish stock beneficially or not.

As long as programmes of eco-labelling are not focusing on entire stocks and taking into account all stakeholders exploiting these stocks, there always will be uncertainties in regard of the entire stocks’ status and development, which should then be dealt with by a well balanced and precautionary risk-based approach.

Based on experiences on small-scale level, the eco-labelling programmes can be extended and multiplied on a national as well as on a regional scale. For all certification schemes, the process of eco-labelling requires intensive efforts for building capacities and capabilities and raising awareness within the pilot fishery communities. Changes will not happen overnight.

The fact that most fisheries to date in Senegal are not in the status of a sound fishery management which could be the basis of a certification programme – and therefore will need considerable resources, capacities and capabilities in order to improve their management, organisational status and fishery practises before entering into a programme of eco-labelling – this fact does rise the general question of appropriate resource allocation in the realm of eco-labelling on a global scale.

If considerable efforts in local capacity building will be required on medium and long term in the producers’ countries, the question can be raised if it makes sense to same time develop and introduce several different eco-labels on the markets, each label requiring considerable resources for promotion and marketing activities on the targeted consumer markets to raise consumer interest and the label’s awareness. Any resources invested in marketing on international markets will not be available for the needed process of capacity building in the local producers’ countries.

Today, there is only one internationally acknowledged and well recognized standard for sustainable fisheries certification, the Marine Stewardship Council MSC. The MSC is a completely independent organisation with a very broad and constant stakeholder involvement process where everyone can participate.

The existence of only one major labelling scheme that is widely recognized could be one significant advantage for the fishery sector in comparison to other food producing sectors such as agriculture, where actually - for example - over 30 different standards for
organic farming do exist worldwide – often leading to constraints of non-conformity when targeting different markets and therefore to higher costs for multiple certifications, additionally creating confusion amongst both producers, the industry, market actors and final consumers.

In this regard, the authors of this study strongly suggest that consideration and efforts should be taken to jointly work into the direction of one single, internationally recognised eco-labelling scheme for fisheries certification. Already existent, - other certification schemes than the MSC -, should work towards integration and compliance with the MSC, both for the sake of the producers and the fishery industry, - being confronted with multiple, diverse and globalized markets -, as well as for the sake of market actors and consumers, to better facilitate marketing of eco-labelled products and allow for broad and wide consumer acceptance.
7.3 Next Steps towards Eco-Labelling in Senegal

7.3.1 Local Steering Committee for Eco-Labelling

The participants of the MSC-workshop decided on the formation of a local steering committee for eco-labelling initiatives in Senegal. The steering committee shall serve as coordinating and knowledge dissemination body for all initiatives for eco-labelling in Senegal.

It has been proposed to the participants and the steering committee to define 2-3 suitable pilot-projects, based on the recommendations and the discussion being held in the workshop. The individual local pilot projects (e.g. the shrimp fishery in the Casamance) should then be managed and implemented by the referring local bodies and organisations that are applying for MSC-certification.

The discussions being held in the two workshops in February and May 2007 revealed that there is still a lot of confusion and misunderstanding in regard of the practical implications of eco-labelling for a given fishery. Therefore part of the mission of the steering committee should be the further awareness creation and knowledge-building amongst all interested stakeholders within the Senegalese fishery sector.

By including governmental bodies into the steering committee there should be achievement of awareness for the overall importance of amelioration of national fishery regulation and enforcement procedures, also in the artisanal fishery sector. This process will be prerequisite for all future initiatives for eco-labelling in Senegal and therefore needs to properly addressed and implemented.

7.3.2 Pilot Programmes and Time Line 2007 – 2010

Potential piloting projects can be planned and based on the findings and conclusion of this study and therefore should be outlined and planned taken into consideration following recommendations:

- In regard of the actual status of the artisanal fishery sector, there is the need of further building-up of capacities and capabilities within the pilot project fisheries prior to go into pre-assessment process.
- A well organized and prepared candidate fishery will go through the process of pre-assessment more smoothly.
- Capacity building prior to pre-assessment should focus on the overall awareness of all stakeholders of the subjected fishery in regard of understanding of scope and process of eco-labelling and its implications on their daily routine, work and livelihoods.
- Also, the organizational capacity of the fishery stakeholder needs to be enforced, communication between all actors established.
- The fishery regulation and enforcement process needs to be improved and established, destructive fishing practices and gear banned and exchanged for more suitable ones.
- All relevant processes within the fishery should be subject to documentation and monitoring procedures.
- The pilot projects should be planned from the beginning considering potential future market partners for the certified products – this could allow to integrate a market partner from the beginning, eventually also by financial contributions for the set-up of the project. The same applies to local partners from the processing and exporting industry, which should also be taken aboard from the beginning of the process.
- It should be envisaged to include already existing programmes like the Fair-Fish project in the MSC eco-labelling initiatives; this would enhance market acceptance and marketability of the products.
Based on the above mentioned recommendations, the outlines of a pilot programme in Senegal can be summarized and time-wise estimated as following:

<table>
<thead>
<tr>
<th>Step of Process</th>
<th>Time</th>
<th>Time Line</th>
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<tbody>
<tr>
<td>Final Selection of Pilot Fisheries and Detailed Evaluation of Constraints</td>
<td>3 months</td>
<td>2007</td>
</tr>
<tr>
<td>Capacity Building and Awareness Creation</td>
<td>12 months</td>
<td>2007 - 2008</td>
</tr>
<tr>
<td>Tackling of main Constraints</td>
<td>12 months</td>
<td>2007 - 2008</td>
</tr>
<tr>
<td>Organizational Building &amp; Amelioration of Fishery Management</td>
<td>12 months</td>
<td>2007 - 2008</td>
</tr>
<tr>
<td>Documentation of all Processes and Data</td>
<td>12 months</td>
<td>2007 - 2008</td>
</tr>
<tr>
<td>MSC-Pre-Assessment</td>
<td>1 month</td>
<td>2008</td>
</tr>
<tr>
<td>Corrective Measures and Improvements</td>
<td>12 months</td>
<td>2008</td>
</tr>
<tr>
<td>MSC-Full Assessment</td>
<td>3 – 6 months</td>
<td>2009</td>
</tr>
<tr>
<td>Chain of Custody Certification</td>
<td>1 months</td>
<td>2009</td>
</tr>
<tr>
<td>Certification and Marketing of Products</td>
<td></td>
<td>2009 – 2010</td>
</tr>
</tbody>
</table>

7.3.3 Costs of Pilot Programmes

Based on the actual status of the proposed candidate fisheries for piloting, it is generally difficult to assess the cost of the process. External costs that may arise will strongly depend on the candidate fisheries’ internal capacity and capability of coping and tackling the issues of relevancy during the process of fishery certification.

The insufficient organisational set-up and status of capacities as well as the limited financial means of the artisanal fishery sector do strongly suggest that fisheries deciding for going into MSC-process will need additional financial support in order to provide means for capacity building and all related relevant aspects of eco-labelling.

The external cost that will arise from the MSC pre-assessment and full assessment process itself can be estimated at roughly 20 – 40’000 USD, a pre-assessment normally costing between 5’000 and 8’000 USD.

In most cases the fishery will need additional financial means in order to initially cover extra human capital cost for the process of implementation, coordination and set-up of the fishery management. These costs can be related either to directly assigned persons within the fishery or to external bodies like NGO’s or international experts specifically working on the capacity building part of the project.

Cost will therefore strongly depend on the type of fishery chosen as candidate as well as the external bodies that will support and guide the implementation of the programme.
7.3.4 Potential Funding Partners

Funding of a piloting programme ideally involves the participation of all relevant stakeholders within the local fishery industry as well as potential market actors from international export markets. Also, significant contributions can be sought from public bodies and governmental organisations.

For future piloting programmes within the Senegalese fishery sector, following institutions and organisations can be regarded as potential funding partners:

- Private Partners in Senegal: Fishery Associations, Traders, Processors, Exporters
- Private Partners International: Importers, Distributors, Wholesalers, Retailers
- Public Partners in Senegal: Governmental Institution and Organisations, NGO’s
- International Public Partners: Governmental Cooperation Agencies and NGO’s

Various discussions with stakeholders from the Senegalese fishery industry as well as evaluations with European seafood companies and retailers have shown that there generally is an interest in activities for eco-labelling as well as for marketing eco-labelled products. However, specific decisions on (co-) funding potential pilot programmes will strongly depend on the actual nature of the project, type of species and final products.

It is therefore recommended to seek and organise funding for the piloting programmes as soon as there is a final decision being made by the local candidate fisheries for going into the process of eco-labelling, focusing on seeking funds by Public Private Partnerships (PPP).

7.4 Final Conclusions

The study’s objectives have been to analyse today’s Senegalese artisanal fishery sector in regard of suitability and feasibility of eco-labelling for fisheries. The evaluation’s results have shown that eco-labelling is feasible and can be conducted, taking into account the various constraints and challenges ahead and implement specific piloting programmes accordingly.

Since most of the observed constraints - like low organizational level of fisheries, insufficient regulatory and enforcement procedures, limited availability of reliable data on actual fish stocks as well as insufficient monitoring of landings and capture volumes - , can be regarded as fundamental prerequisites for any sustainable fishery management, the constraints for eco-labelling are rather constraints for implementation of sustainable fisheries management.

Such an interpretation does reflect the fact that eco-labelling as a process is rather a mean of transparently showing and proving that a given candidate fisheries does indeed comply with the overall criteria of sustainable resource management. It is a result that has to be achieved during a long term process – not primarily for the sake of the resulting certified products, but rather for the sake of sustainable fisheries management.

In this regard an eco-labelling scheme does indeed present guidance framework and tool in order to enhance a candidate fishery’s management – thus leading the fishery towards better and more sustainable management for its aquatic resources it is exploiting.

For the Senegalese artisanal fishery sector, eco-labelling can therefore be a practical and pragmatic mean to enhance fishery management and secure long term returns from its precious marine resources. It’s a complex and challenging process and its result – a better managed and more sustainable fishery -, will be of essential importance to the nations economy and all coastal communities and livelihoods depending on fish and other marine resources.
7.5 Outlook: Fisheries Eco-Labelling in Developing Countries

In a more general approach, and by the various insights gained in the realm of this study in Senegal, there can be a number of recommendations and conclusions drawn for future fisheries eco-labelling initiatives in Developing Countries.

If eco-labelling is to become a reality also for Developing Countries’ fisheries and a successful guidance tool to convert existing fisheries into more sustainable operations, a number of considerations should be taken into account:

- **The actual Level of local Awareness, Interest and Knowledge**

  There is today an increasing interest and awareness for eco-labelling of fisheries. However, the level of actual knowledge on the practical implications of fishery certifications in regard of sustainability often is insufficient – therefore leaving open questions and ground for misconceptions and false assumptions amongst the fishery stakeholders. Even if there is a strong interest and participatory initiative for eco-labelling amongst local stakeholders - there probably is the need to further facilitate and support the process of knowledge building and awareness creation for Eco-Labelling and its practical implications on a given fishery by proper information campaigns and joint workshops.

- **The actual Level of local Fisheries’ Capacities and Capabilities**

  Prior of going into the process of eco-labelling, a fishery needs a minimum level of organisational status as well as internal capacities and capabilities for the implementation of a sound fishery management. Many fisheries around the world do whether have the capacity neither the capability to do so – therefore there is a strong need for specific capacity building in this regard. This will lay the basis for any successful fishery certification programme.

- **The actual Level of Fisheries Management and Sustainability**

  Many fisheries around the world are still badly managed and stocks are not exploited sustainably. In order to develop and gain local knowledge and experience for better management of fisheries by eco-labelling, the piloting process of eco-labelling in a specific country should focus on first instance on carefully selected suitable candidates for certification – offering the opportunity of realistically achieving certification – and same time being a guiding example for further fisheries to follow.

- **Marketing of Eco-Labelled Products**

  The basic concept of eco-labelling and its implications in regard of marketing should be very clear to all stakeholders of any eco-labelling initiative. It’s important to have a realistic understanding of potential markets and clients for certified products. By entering the market for labelled and certified products, producers are quitting the anonymous commodity markets. For the benefits of better and more attractive market access, there is also the need to take more responsibility and direct involvement towards the consumer markets – in this regard the process of eco-labelling could also be a process of emancipation of fisheries, from today’s simple providers of raw material for the industry towards responsible and equal partners within the global food distribution and value adding chain, providing safe and sustainable fish and seafood to the consumers.

- **Time Horizon to achieve Eco-Labelling**

  Since the achievement of eco-labelling does directly reflect a given fishery’s achievement in the realm of sustainable fishery management, the process of eco-labelling until final certification can be a long term process – depending on the actual status of a candidate fishery and its efficiency and efficacy to tackle issues of
sustainable fishery management in order to achieve the desired certification. It’s important that all partners of eco-labelling initiatives are aware of realistic time frames to achieve certification. This may help avoid misconceptions in the planning stage as well as disappointment in the process towards the certification.

- Cost of Certification Programme
  It has been stated that the cost factor is an essential constraint for eco-labelling initiatives around the globe. Experiences show however, that by proper stakeholder involvement from both the private and public sector, taken into account also potential market partners in the final consumer markets, financing and funding local initiatives for fisheries certification programme is not the key constraint towards eco-labelling.

- Involvement of Experienced Organisations and Bodies
  The process of eco-labelling requires considerable resources on both a material and immaterial scale. During the past 10 years, several organisations and institutions have gained practical experiences in the process of eco-labelling of fisheries within the reality of developing countries coastal fisheries. It will be essential and of benefit for all planned future initiatives to take into account the knowledge and the lessons learned from programmes like the WWF’s Community Based Fishery Programme (Chapter 3.2) and the MSC’s Developing World Programme (Chapter 3.1). Same time efforts should be made to further disseminate this knowledge and experience within the worlds’ fisheries in order to raise awareness on the practical implications of fisheries eco-labelling for small-scale community fisheries.

This study shows that eco-labelling – taken as a process, and not as a result - is both viable and important for Developing Countries’ fisheries targeting consumer markets in the Developed World. Both the market trends towards more responsible sourced food products as well as the imminent need for better and more sustainable management of the World’s fisheries strongly favour the facilitation and support of eco-labelling initiatives in Developed Countries.

In this regard, eco-labelling should be taken as an opportunity and promising challenge, not as a threat or just another short-term market trend. Since eco-labelling is dealing with the sustainability of fisheries, it won’t be of short-termed nature – and therefore the pragmatic and very practical approach of eco-labelling initiatives should be regarded as a real chance, not only for the industry itself, but also for all governmental and public bodies dealing with the fishery sector.

If eco-labelling is perceived as a process towards better and more sustainable fisheries management by all participants of a given initiative, its positive effects as a guidance tool will effectively work and support all stakeholders within the process, eventually and finally rewarding good practices with better and more attractive market access.
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