

Wide Netters!

Fisheries in Senegal
and Mauritania





TRADE MATTERS!

Fisheries in Senegal and Mauritania

Introduction:
page 1 - 2

1 EU fishery policies:
page 3 - 5

2 Ecological impacts:
page 6 - 9

3 Socio-economic impacts:
page 10 - 13

Recommendations and conclusion:
page 14 - 15

Introduction



Trade Matters!

Trade and foreign direct investment are important instruments in the fight against poverty and ecological degradation. It is an undisputed fact that trade and investment flows can play a positive role in reducing poverty and in halting biodiversity-loss. What is disputed, however, is how these flows should be regulated and organised. Finding ways to maximise the positive contribution of trade and investment flows for sustainable development is certainly one of the greatest challenges of this decade.

The following case study is part of a series produced by IUCN-National Committee of the Netherlands (IUCN NL) and Both ENDS to provide more insight into the relationships that exist between economic policy (such as trade and investment policies), the achievement of sustainable livelihoods in poor countries, and halting the loss of biodiversity. Each case describes a specific example, and offers

recommendations on how to move forward. The cases are intended to support the current discussions worldwide on how globalisation can benefit all life on earth.

The European Union and Fisheries in Mauritania and Senegal

“Probably all the great sea fisheries are inexhaustible; that is to say, that nothing we do seriously affects the number of fish”.

Thomas Huxley, 1883.

This optimistic quote by Thomas Huxley still rung true as late as the 1970s, for the fishing grounds off the coast of Western Africa. Fish abounded, and European fishing fleets were welcome to fish there. These European vessels had been forced out of their own regions, after decades of over-fishing had significantly decreased the quantity and quality of the fish-stocks there, while the demand was still growing.

Therefore, European fleets expanded their hunting grounds to the Canary Current off the Coasts of Morocco, Mauritania, Senegal, and the Gambia. This expansion was supported by agreements made between the host-countries and the European Commission. In fact, Europe pays these countries compensation for the right of their fishing fleets to fish in their Exclusive Economic Zones (EEZ). This case will focus on two such countries: Mauritania and Senegal. The Senegalese and Mauritanian fishing grounds are now suffering the same fate as the European fishing grounds, overexploitation, a mere thirty years later, and suddenly there is no place for Huxlean optimism, even here. Fisheries *are* exhaustible.

This case study will attempt to describe the dilemma presented by the need for cash flow for Mauritania and Senegal's state treasuries, the limits offered by the marine ecosystems off their coasts, and the developmental needs of their fishing communities. It connects the loss of fish stocks directly to the impoverished people whose livelihoods depend on the ability to catch, eat, and sell fish. It shows where fishery agreements and trade and investment agreements have been inadequate in ensuring sustainable livelihoods for the fishing communities of these two countries

so far, while simultaneously maintaining a healthy marine ecosystem. Europe plays a role in this story – it is not the main culprit of over-fishing, but it certainly contributes. By utilising its economic might and its aid relationships, Europe can help the West African economies to sustainably manage fish resources, and in doing so, provide equitable access to marine resources for current and future generations. A perfect opportunity will arise with the renegotiation of the fishery agreements into partnership agreements, in 2006.



1 EU fishery policies



To support fishing fleets that venture into non-European waters, the EU enters into Fishery Access Agreements with countries with rich fishing grounds inside their 200-mile Exclusive Economic Zones (EEZ). The EU pays the host-governments a set annual fee as part of the terms of these agreements, in return for access by a specified number of fishing-boats to stocks found in the EEZ (see table 1 for some of the details of the agreements with Mauritania and Senegal).

As time passed and more information about the ecological impact of fishing practices in West Africa became available, certain sustainability and social justice measures were added to the agreements. As such, pelagic species that are predominantly fished by local fishermen cannot be licensed in Senegal (in Mauritania these species can be fished), and EU vessels are not allowed to fish within 6 to 12 miles of the coast of Senegal. Catch allowances for fully- or over-exploited stocks have been limited. Fishing zones have also been reduced in size, allowing only small vessels to come close to the coast. In addition, two-month 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.

Table 1:
Economic fisheries transfers, as agreed upon between the EU, Senegal and Mauritania

| | Senegal | | Mauritania | |
|-----------------------------|-----------|-----------|------------|-----------|
| | 1997-2001 | 2002-2006 | 1996-2001 | 2001-2006 |
| Current agreement | | | | |
| Total Cost EU (mill) | 48 | 64 | 267 | 430 |
| Vessels | 148 | 125 | 248 | 248 |
| Cost per Vessel (thousand) | 81 | 128 | 215 | 347 |

Source: Sporrang N. et al., 2002 / Fisheries agreements with third countries - Is the EU moving towards sustainable development? / Institute for European Environmental Policy, London

The negotiation process

When analysing the negotiation process it becomes clear that neither Senegal nor Mauritania are in strong positions to set the terms of the agreements. The European Union is a powerful negotiator. Its economic size and its legal and scientific capacity make the negotiation relationship highly unequal. This puts a great deal of responsibility on the shoulders of the European Union to ensure that these agreements do contribute to the economic development and the ecological sustainability of these nations.

Other factors that influence the negotiation relationship between the EU and Mauritania and Senegal include:

- 1 Several commercially interesting fish stocks migrate along the coasts. If one nation wants to hold out for a better deal, the second nation may give access any way. Regional co-operation could solve this, but the EU negotiates these agreements bilaterally.
- 2 Access to the fishing grounds is determined in Gross Registered Tonnes

(GRT) of fishing vessels. Potential growth of the efficiency of the EU fleet is not included in these access agreements. As such, negotiators may be systematically underestimating the potential catch of the EU fleet.

- 3 The agreements provide access to the European market. This market is important for Senegal and Mauritania as a large part of their foreign currencies can be earned through trade with that market.

Fisheries agreements are part of a broader set of (aid) relationships that exist between the EU and its former colonies. The negotiations for 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. Mauritania and Senegal are not currently in a position to develop the market being fished by foreign vessels. A further domestic exploitation of the EEZ requires more investment in capacity to fish in distance waters for these countries. However, it has been found that the domestic private capital sector in Senegal has been particularly cautious of investing in fishing fleets. Foreign fleets, through the payment of their licenses, at least provide these developing countries with some form of economic return on the rich fish stocks found off their coasts.

Currently, the aforementioned Fishery Agreements are running to a close, and as such, the EU has embarked on negotiations with Mauritania and Senegal to re-establish the rights of European fishing fleets to exploit the waters found within their EEZ's. This time, the agreements are called Fishery Partnership Agreements, reflecting the Type II partnerships¹, as established by the 2002

Johannesburg World Summit on Sustainable Development. Yet since they are being negotiated under EU trade rules, they are more likely to resemble hard trade agreements than sustainable development agreements.



¹ These Type II partnerships are part of a package of instruments and policy measures introduced by the 2002 WSSD to overcome identified obstacles for reaching sustainable societies worldwide.

They usually involve partnerships between governments on certain development priorities. In most cases, the private sector, including business and NGOs are included.

Box 1: The European Common Fishery Policy

The European Union has several policies in place to maintain the biological survivability of the fish-stocks found off its own coasts. The Community Fisheries Policy (CFP) provides measures that control the quality of the food emanating from its marine resources for consumers, but also provides measures to protect and conserve the marine-ecosystem, and to ensure the economic viability of the fishing sector. The CFP has been augmented with other measures that introduce closed seasons, fishing days, mesh-size restrictions, and Total Allowable Catches (TAC's). Even with all these measures in place, the European waters are suffering from overexploitation, causing European fishing fleets to seek their riches elsewhere.

Source: Council Regulation (EC) no. 104/2000 of 17 December 1999 on the common organisation of the markets in fishery and aquaculture products, Brussels 1999

2 Ecological impacts of fishery Practices

6 Ecological impacts



The Millennium Ecosystem Assessment that was released on 31 March 2005 by the United Nations² shows that the world's marine ecosystems are under severe stress. The Atlantic Ocean is most severely strained, worse than the Pacific and the Indian Ocean. The Food and Agriculture Organisation (FAO) reported in 2004 that 75% of the Central East Atlantic is fully exploited (at or near its maximum sustainable yield) and that 21% is overexploited³. Hence, there is no scope for increased catches, and in some cases, the catch needs to be reduced. Increased pressure from fisheries is cited as the main cause.

Data about the fisheries industry is surrounded by uncertainty. Very little monitoring of fishing practices takes place, including accurate counts of stocks caught and sold, as well as unwanted by-catches thrown overboard. The destruction that

certain fishing practises cause to habitats is also difficult to measure. The lack of trustworthy data coming from fisheries in a region may also be attributed to corruption. Despite the difficulty in gaining exact figures about the state of marine ecosystems, official institutions and scientists warn that the limits have been reached. In fact, fishermen along the coasts report that their ability to secure adequate catches has decreased. In Senegal's case, its own local fishing fleets mostly causes this fish stock depletion, and as such, measures need to be taken to make local fisheries more sustainable. Foreign fleets, on the other hand, catch most of the fish in Mauritania.

The role of the European Union

Developed countries import 80% of the total value of globally traded fish. The European Union increased its dependence on fish imports by up to 35% in 2002. Senegal and Mauritania rank as the third, and respectively sixth biggest exporters of the 20 largest fish exporters⁴. It should be noted that Mauritania also exports fish products that are not suitable for the European market to other West African Countries. This flow accounts for 90% of their total fish-exports⁵. The Fishing Agreements provide space for fishing by the EU fleets in the region itself.

The figures between Mauritania and Senegal differ significantly. The measured activity of European vessels along the Mauritanian coast is significantly larger than the activity along the Senegalese coast. EU fleets focus mostly on economically viable species. The table below shows the percentage of the total catch in the region by EU fishing vessels over the period ranging from 1996 to 2000 (more recent figures are not available)⁶ and their current status of exploitation as defined by the FAO. More states have an interest in fishing rights in this region, and the EU actually plays a comparatively limited role in the region as a whole.

Table 2:
Percentage of the European catches in national EEZ's

| Country | Coastal pelagic | Tunas | Demersal fish | Cephalopods | Shrimps |
|-----------------------|-----------------|-----------------|----------------------|-------------------------|-----------------|
| Morocco | 15 | 20 | 30 | 50 | 25 |
| Mauritania | 25* | 30 | 30 | 40 | 30 |
| Senegal | Neg | 50 | 5 | 10 | 10 |
| Seychelles | - | 50 | - | - | - |
| Ghana | 0 | 0 | 0 | 0 | 0 |
| Exploitation Status** | Fully exploited | Fully exploited | Moderately exploited | Fully to over-exploited | Fully exploited |

² Millennium Ecosystem Assessment, 2005. / Ecosystems and Human well-being: Biodiversity Synthesis. / World Resources Institute, Washington, DC. P.5 / See www.millenniumassessment.org for further information on all the reports.

³ FAO, 2004 / The state of world fisheries and aquaculture (SOFIA)

⁴ Fish trade issues in WTO and ACP / EU negotiation. (www.Globefish.org, visited June 2005)

⁵ Based on an interview with Ad Corten, Netherlands Institute for Fisheries Research.

⁶ These statistics show only EU fisheries. Other third countries also fish in the region. Their contribution to overfishing is also significant.

* Average 1996-2000, European vessels started to fish in 1996 / Source: Failler and Lecrivain, 2003 / Session 13, fisheries management: profitability and development / CEMARE, University of Portsmouth, U.K.
** Source: FAO Fishery Committee for the Eastern Central Atlantic Scientific Subcommittee, 2004. / Database IICAT.

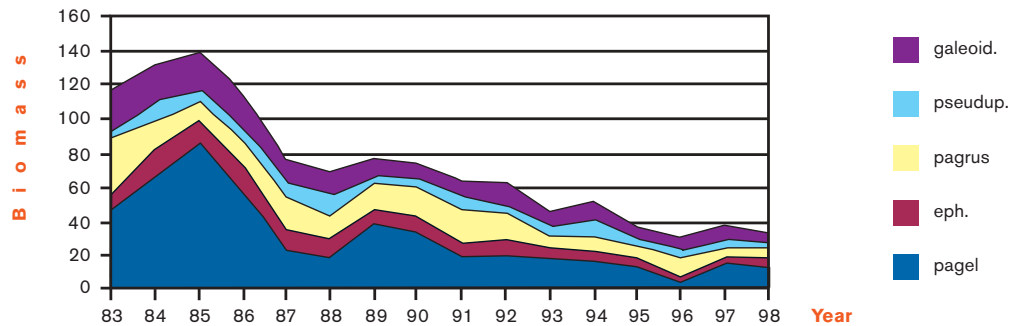
The table below shows the shares of the catch for local and EU fishing fleets per species. A large part of some commercially interesting species are caught by EU vessels. Even so, in most cases local fishing vessels or other foreign fleets catch the bulk of the catch.

Table 3:
Percentage of the European catches in national EEZ's

| Country | % Total EEZ catch EU-25 | % Total EEZ catch own country | % Total EEZ catch other | Total EEZ catch in 2002 (tonnes) |
|---------------|-------------------------|-------------------------------|-------------------------|----------------------------------|
| Mauritania | 57 | 33 | 10 | 651.891 |
| Senegal | 14 | 5 | 81 | 350.000 |
| The Gambia | 1 | 57 | 42 | 101.586 |
| Guinea-Bissau | 5 | 91 | 4 | 108.145 |
| Morocco | <1 | <1 | 99 | 807.584 |

Sources: Figures calculated based on data found on www.seararoundus.org in 2005 / FAO Fishery Committee for the Eastern Central Atlantic / Scientific Subcommittee, 2004 / Database CEMARE / FAO Fishery Committee for the Eastern Central Atlantic / Scientific Subcommittee, 2004 / Database ICCAT

Figure 1:
Evolution of biomass estimates in Senegal for several fish species



Source: D. Gascuel and M. Laurans, 2003 / Evaluation des stocks demersaux en Afrique du Nord-Ouest / FAO, Rome

Marine Ecosystem health

Describing and predicting ecosystem change is complex. Several factors influence the health of marine ecosystems. On the one hand, there are the biological relationships between predators and their prey. On the other hand, there are the relationships between fishing methodologies and the interactions between them, such as the timing of fishing, the quantities being fished, and the age and fertility rates of fished species.

It is known that fishing fleets in the North Sea are removing about 25% of the total biomass in that ecosystem, with significant implications for the whole North Sea ecosystem⁷. Data for the Central East Atlantic is not available or ambiguous (see figure 1 for some estimates). Nevertheless, there are plenty of signals that tell us that biomass harvesting in this region is not happening at a sustainable rate.

Ecological theory states that changes in some populations affect other species in the ecosystem. It is inevitable that the populations of non-target species, the physical environment (plant life, corals, sediments) and predatory pressures are affected and altered. The overexploitation of tuna (at the top of the chain) and sardines, squid and shrimp (near the bottom) are expected to affect the entire ecosystem negatively.

Coastal Ecosystem health

There are other ecological impacts of over-fishing, some even quite unexpected. One study by U.S and African researchers investigated the relationship between declines in fish supply along the West African coast and declines in animal-populations in several wildlife reserves in Ghana⁸. The data shows that in years with a lower than average supply of fish there is a higher than average decline in mammal wildlife.

These stock fluctuations do not correlate with other factors such as weather, political cycles, and oil prices. Despite the fact that this study refers to correlations and is unable to prove causal effects, it implies that due to decreased quantities of quality fish, and related increased fish prices, people search for alternative food supplies elsewhere, with the ensuing negative impact on biodiversity.

Impacts on bushmeat are expected to be less in Senegal and Mauritania, as bushmeat is simply not found in their coastal areas, and fishermen are unlikely to travel far for their protein. Nevertheless, a transfer to land-based protein production or aquaculture is likely to take place, and one can assume ecological impacts there.

⁷ Frid et al, 2005 / Ecosystem based fisheries management; progress in the North East Atlantic, in Marine policy / Elsevier / University of Newcastle upon Tyne, U.K.

⁸ Brashares et al, 2004 / Bushmeat hunting, wildlife declines and fish supply in West Africa, in Science Vol. 306 / American Association for the Advancement of Science / Stanford University Highwire Press, Washington DC, USA

3 Socio-economic impacts

Socio-economic impacts
10



⁹ http://europa.eu.int/comm/fisheries/news_corner/discours/speech63_en.htm

¹⁰ <http://www.fao.org/DOCREP/003/U1990E/U1990E00.HTM>

¹¹ http://www.unep.ch/etu/etp/events/Fisheries/Fisheries_Mauritania.PDF

¹² http://www.unep.ch/etu/etp/events/Fisheries/Fisheries_Mauritania.PDF

¹³ The commercial value of tuna ranges from EUR 500- to 1,500- per tonne, depending on the species.

Table 4:
The economies of the EU, Senegalese, and Mauritanian (fishing) industries

| | EU | Senegal | Mauritania |
|---|------------------|-------------------|----------------------|
| Total GDP (in billion \$) | 10.000 | 17 | 5.2 |
| Total labour force (in million persons) | 150 | 4.2 | 0.8 |
| Agricultural labour force (in %) | 5 | 70 | 50 |
| GNP from marine based industry (in %) | 3-5 ⁹ | 2.5 ¹⁰ | 7 ¹¹ |
| Employment in fisheries sector (in persons) | 500.000 | 600.000 | 27.000 ¹² |
| Average intake per head per annum (in kg) | 25 | 26 | 5-9 |

Next to the direct income that state-treasuries receive through the fishery agreements, fishing vessel owners also have to pay a license fee to the state. These differ by type of vessel and fishing-

method. Fees charged to vessel owners catching tuna in Senegal, for example, cover approximately 2.5% to 4% of the average commercial value of their catch¹³. These contributions are substantial and

important to the state budgets, especially considering the size of these economies, and the underdeveloped local capacity to fish for the same resources.

Table 5:
Costs and benefits of fisheries access agreement 1993-1997 (million EUR)

| | Senegal | | Mauritania | |
|-------------------------------|---------|-------------------|------------|-----|
| Total value EU catch per year | 24 | (average '93-'97) | 109 | '96 |
| | | | 150 | '97 |
| Cost per year for EU | 12 | (average '93-'97) | 62 | '96 |
| | | | 54 | '97 |

Table 5 shows that the commercial value of fish caught by the EU in the EEZ zones of Senegal and Mauritania is double or triple the costs of gaining access. These figures beg the question whether Senegal

and Mauritania would not profit more if they would catch the fish themselves and sell it directly to the EU market. Currently, however, the local fishing fleets do not have sufficient capacity to fish for all spe-

Source: Johnstone N., The Economics of Fisheries Access Agreements: Perspectives on the EU-Senegal Case / International Institute for Environment and Development, 1996.

cies within the 200 mile zone. As such, the compensation through paid licenses provides at least some economical return for the commercially viable fish stocks that swim in these zones.

Food security and competition

The FAO¹⁴ has identified several areas of tension between foreign fishing interests and home country interests. These tensions have significant developmental impacts on local fishing communities. The national fishing industry in Senegal has grown significantly, which has intensified the competition with foreign fishing vessels. Despite the fact that each fishing fleet has specific rights, the nature of the game means that they do get in each other's way. As one of the anecdotes in the box shows, things can get violent. The local fishing zones off the coast are formally off-limits to EU vessels. Nevertheless, EU trawlers sometimes venture into these forbidden zones, and vice versa, local fishing vessels sometimes venture outside their "safe" zones. Competition between national and foreign industrial fleets exists on coastal demersal species, crustacea, and cephalopods. Competition between local fishermen and foreign fleets is mainly centred on the coastal demersal species. The EU has no access to coastal (small) pelagic species in Senegal, but does have it in Mauritania (therefore still contributing to overexploitation as the fish migrate across the economic zones).

¹⁴ International Fish Trade and Food Security-case of Senegal / Ousmane Ndiaye, Direction des Pêches, Senegal

Box 2: Real life stories about over-fishing

"I have to repair my broken nets every day after fishing," complains Ousseynou Niang, captain of a pirogue, the canoe-like boat used by most local fishermen here. *"Sometimes they are damaged by stones or crabs, but most of the time they are cut by big vessels."*

Thiogo Diene Seck is married to a fisherman. She actively participates in her husband's activities, selling fish to local processing centres, in order to buy fishing gear for the pirogue her family depends on. She is both terrified of and angered by the European vessels, which too often trespass into the exclusive fishing zone (6 miles off the coast) of the local fishermen at night. *"Not only do they steal our resources, but they might kill our men,"* she says, referring to the occasional, but dramatic, collisions between small pirogues and big trawlers.

"Before, we used to catch barracudas and red carp, and fishermen did not catch kobo," says a villager. *"Now we have to eat these kobo, because most of the time there is nothing else."*

Source: www.scienceinafrica.co.za



Impacts on livelihood

Over-fishing has made it more difficult for local fishermen to secure an economically viable daily catch. The quantity and quality of fish is decreasing, while the demand is not. The decreased quality of fish is further augmented by the fact that “good” fish is marked for export and not for local consumption - especially species such as cuttlefish, octopus, lobster, and shrimp are shifting from the local markets to the international market. The fact that fish are getting smaller has also diminished the quality of the food supply, and the difficulty in meeting demand has negatively affected fishermen’s income levels. Fishermen are now spending more time at sea trying to secure a catch, usually in small open boats, which means that they face the dangers of the sea itself, especially out on the Atlantic, but also fierce competition with fishermen from other communities (which sometimes turns violent) and competition with foreign fleets. The increased pressure on the fish stocks means that violent encounters are becoming increasingly frequent, and sometimes even lead to deaths, while the loss of income makes it difficult to purchase other food supplies and other necessities, which make the fishermen even more reliant on fishing. The fishing community in Mauritania is

small, which limits the total impact on the nation. In Senegal, however, the total number of people working in the fishing sector is large – 600,000 people depend on the fishing industry, either directly or indirectly, to support or feed around 3 million dependents. Ongoing droughts have eliminated

livestock, once the primary source of protein in the region, so that fish now constitutes about 75% of the total consumption of animal proteins in Senegal. This leaves a nutritional gap caused by the diminishing fish stocks.

Box 3: The Kayar example

Local fishermen cause the bulk of the over-fishing in Senegal. These fishermen live in coastal towns and villages. The town of Kayar is one such coastal community, with between 15,000 to 30,000 inhabitants, and is Senegal’s third largest fishing centre. Due to dropping fish prices, the local fishermen established a few mechanisms to ensure their own livelihood. This fishing community is the most advanced in the country in terms of structure. Long liners, purse seiners, and traders are organised in associations, and therefore more capable of defending their interests. They have established a set of rules to manage the local fish-stocks. These include not catching juveniles, allowing purse seiners only one fishing session per day, and a maximum catch of 45kg of fish per day. Violations are met with substantial punitive taxes, the profits of which are used to help the poorest fishermen of the community. The role of NGOs in the region is also strengthened. They give technical advice, support the fishers through micro credit programs, and provide training and capacity building especially with respect to fishing laws. The objective is to encourage local fishermen to use more sustainable fishing practices and methods.

Source: This text is written from information gathered from the following webpage:
www.panda.org/about_wwf/where_wework/where/western_africa/ecoregion/wamer/area/kayar.cfm

Recommendations and conclusion



The Canary current's ecosystem provides one of the world's richest fishing grounds. As such, they have been discovered by European- and other fishing nations as a welcome area to fish, especially since these nations' own fishing zones are suffering from over-exploitation. The European Union has obtained access to these fishing grounds through fishery agreements, allowing European fishing fleets to fish there for commercially interesting species. However, in the region, local fisheries have grown and taken a larger role in the total catch. In addition, fishing techniques have become more efficient. This means that the West-African marine eco-region is now also suffering from overexploitation.

The Senegalese fishery sector is especially hard-hit by this overexploitation. Local fishermen are struggling to make a living by fishing. Mauritania also faces an uncer-

tain future if the sea-life further depletes, as it will not be able to secure an income for the state-treasury through fishing permits. While the EU plays a limited role in fishing off that coast, the presence of this foreign fleet contributes to the loss of these fish-stocks. The loss of a viable fishing sector will make it even more difficult to sustain a nutritionally adequate food supply in both countries.

The impending renegotiation of the Fishery Agreements offers the European Union a great opportunity to change the pattern of biodiversity loss and the subsequent loss of sustainable livelihoods in the region, by making agreements based on sustainability. It must offer such changes itself, as neither Mauritania nor Senegal are in a powerful enough position to do so themselves.

If the EU is serious about sustainable development, it must:

- 1 Negotiate one regional Fishery Partnership Agreement with all nations in the Canary Current in a transparent and participatory manner (involving representatives from coastal fishing communities, marine-ecosystem experts, and non-governmental development- and nature conservation organisations).
- 2 Investigate the sustainability impacts of several scenarios for fishing and fish trading, in cooperation with the region. The most optimal scenario to contribute to the development of these countries must be found, while halting the loss of biodiversity, all the while recognising the right of these countries to exploit their own EEZ's.
- 3 Find best-practice models that work in their local conditions and try to aim development policies to make these success stories the norm. These best-practice models should focus on strengthening communities so that they can manage fish-resources in a sustainable manner themselves, with support from well-developed national authorities, scientists, and NGOs.

Table 6:
Commercial interesting species in West Africa.

| Coastal demersal | High seas demersal | Coastal pelagic | High seas pelagic |
|------------------|-------------------------|-----------------|-------------------|
| Crustaceans* | Shrimp (e.g. gamba's) | Sardines | Tuna |
| | Flat fish (e.g. turbot) | Pilchards | Mackerel |
| Cephalopods** | | Anchovies | Swordfish |
| | | Herring | |

* Crustacean species include lobster, crab and prawns
 ** Cephalopods include squid, octopus and cuttlefish

Source: Based on FAO Fisheries Report no. 750 / Fishery Committee for the Eastern Central Atlantic, 2004 / Accra



Credits



Credits

16

This case was written by **Pieter van der Gaag**, **Reanne Creighton**, **Julien Sunyé** (IUCN-National Committee of the Netherlands), **Stefan Verwer** and **Casper van Nassau** (Both ENDS). It depended greatly on the expertise of **Paul Scholte**, **Carl Königel** and **Henk Hartogh** (IUCN-National Committee of the Netherlands), **Burghard Ilge** (Both ENDS), **Ad Corten** (Rijksinstituut voor Visserij Onderzoek), **Kees Lankester** (Scomber), **Papa Samba Diouf** (WWF-WAMER), **Lotje de Vries** (ENDA-BIOPOL) and on the input of fishermen interviewed in the region itself (Fishery Community of Joul-Fadouh, Senegal). We thank the FAO (www.fao.org) and the Sea Around Us project (www.seaaroundus.org) for providing such clear data on their websites.

Editing **Karin Engelbrecht** (Amsterdam) / Design and images **Margo Vlamings** (Arnhem) /
Printing **Drukkerij Advadi** (Arnhem).

© june 2005

This document has been produced with the financial assistance of the Dutch Ministry of Housing, Spatial Planning and the Environment (VROM) plus the European Commission. The views expressed herein are those of Both ENDS and IUCN-National Committee of the Netherlands and can therefore in no way be taken to reflect the official opinion of VROM and the European Commission.