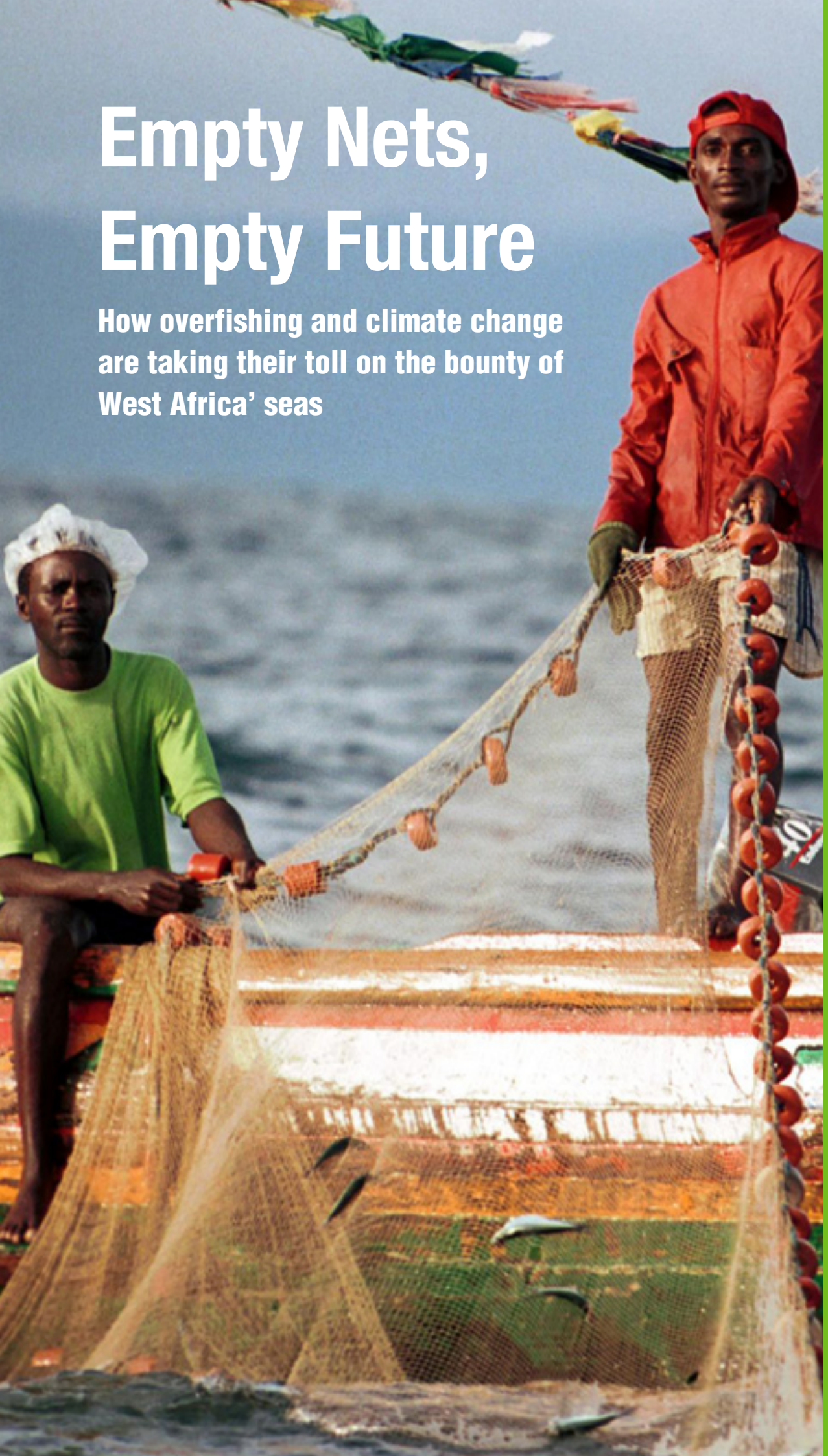

Empty Nets, Empty Future

How overfishing and climate change are taking their toll on the bounty of West Africa' seas

GREENPEACE

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Executive Summary

West Africa is rich in marine resources. This highly rated form of protein should feed its people, provide shelters for them and give them a future, but none of this is happening.

Instead the fishermen of West Africa have to take their lives in their own hands to sail ever further from shore to get to what was once their birthright. The traditional fishing economies are collapsing and with it the job security of hundreds of thousands of other people in the region. The plates on tables are empty of the once easily available and affordable fish. People are under-nourished.

This is not an overnight phenomenon but one that has grown in intensity over the last 30 years, fuelled by international greed and regional short sightedness.

Fleets from Europe and the Far East in ever bigger and more destructive trawlers are sucking dry the fishing grounds of West Africa, aided and abetted by some West African governments who have sold their countrymen's birthright - or just plundering the waters illegally and with no thought to the consequences.

There is no level playing field, the local fishermen cannot compete. The decline in stocks and catches has been disastrous forcing Guinea and Mauritania to ban exports of certain fish species to ensure there is enough fish to feed their people. Over and above this is the spectrum of climate change and its fundamental effects on fish migration at sea and population movement on land.

If we do nothing the entire West African region will be destabilized with dramatic knock on effects for the rest of Africa and indeed Europe as desperate refugees flee in search of a better life.

Greenpeace is demanding fewer foreign trawlers and factory ships at sea, sustainable fishing practices and the establishment of a network of marine reserves to let fish stocks recover and protect the ecosystem.

Overfishing is one of the greatest threats facing the world's oceans today - almost 80 percent of the world's fish stocks are fully or over exploited, depleted, or recovering. For predatory fish like sharks, tuna and swordfish, the rate is 90 percent across all oceans.

Oceans regulate our climate and feed millions of people around the world. By stripping fish from the sea, particularly large predators, we change the ecosystem and compromise the ocean's ability to buttress the consequences of climate change. We must set aside areas of oceans as fully protected marine reserves, off-limits to fishing and other extractive activities. Greenpeace is campaigning globally for a large-scale network of marine reserves covering 40% of the world's oceans, which will help lead to a more holistic and ecosystem-based approach to the management of our oceans.

Over and above this, Greenpeace is campaigning for an energy revolution away from cheap, dirty and dangerous nuclear and fossil fuels and calls for global emissions to peak by no later than 2015. We urge the international community to ensure zero deforestation of intact tropical forests by 2015 and for governments to set and commit to targets and timelines on energy efficiency for all carbon emitting activities including vehicles and appliances.

© Greenpeace / Christian Åslund. West African Pirogue Fishing Boat 2010.

1. Introduction

West Africa is a huge and diverse region bordered by the Sahara in the north and tropical rainforests in the south, ranging from the most populous country in Africa; Nigeria, to the desert nation of Mauritania.

Fishing plays a major role in the region, particularly to the 14 coastal countries under review: Mauritania, Senegal, Gambia, Cape Verde, Guinea, Guinea Bissau, Côte d'Ivoire, Benin, Togo, Ghana, Sierra Leone, Liberia, Cameroon and Nigeria.

The industry is under threat and with it the livelihoods of thousands of people, the welfare of tens of thousands more and the nutrition of hundreds of millions.

Off shore, the once rich fishing grounds have been compromised, some to the point of no return. This report will show just how critical it is to establish strong fisheries management in each country and across the region as a whole to ensure food security, sustain the local fishing industries and create total exclusion marine reserves to allow the shoals to breathe again and multiply.

© Greenpeace / Steve Morgan. Fish Market, Guinea 2006.

2. Biological significance of marine resources

The land might be poor, but the oceans offshore are not. The dry desert winds of the Sahara cause cold water, rich in nutrients, to rise from the depths. This is known as coastal upwelling, a phenomenon that creates the perfect conditions for phytoplankton, the microscopic plants that form the foundation stone of marine food webs and ecosystems.

The region is blessed with an array of marine habitats, many of them unique, from lagoons to bays, estuaries, mangrove forests, sea grass beds, deep-water coral habitats and reefs. The Niger Delta has the third largest mangrove system in the world, Mauritania's Banc d'Arguin National Park is a UNESCO World Heritage Site and a key overwintering site for rare and vulnerable migratory birds en route from Europe to Africa as well as the largest concentration of wintering waders in the world, including flamingos, ringed plover and bartailed godwit (UNESCO, 2010). Cape Verde, 500 kms offshore of West Africa is renowned for its unique marine biodiversity - home to fish and tropical corals found nowhere else on earth (Roberts et al, 2002).

West Africa's oceans are a treasure trove of fish and mammals, including many that are not just unique to the area, but also severely threatened. Six of the world's seven species of marine turtle live here, with the critically endangered leatherback and hawksbill turtles, endangered green and loggerhead turtles and vulnerable olive ridley turtle (UNEP/CMS, 2000) specifically nesting here. Cabo Blanco, in Mauritania, is home to the 500 strong largest remaining population of the critically endangered Mediterranean monk seal, along with the West African manatee, or seacow. Cape Verde's waters are home to manta rays and whale sharks, and provide breeding and feeding haven for humpback whales.

Table 1 – Basic information on West African coastal countries

Country	Land Area (km^2) [a]	Exclusive Economic Zone EEZ (km^2) [b]	Population 2007 (000) [c]	% Annual Pop. Growth Rate 2010 [d.]	Country ranking based on HDI- 2009 [e.]
Gambia	10,600	23,112	1,709	2.528	168
Senegal	196,722	158,861	12,379	2.579	166
Cap Verde	4,033	800,561	530	0.561 (2009 est.)	121
Mauritania	1,030,700	165,338	3,124	2.399 (2009 est.)	154
Guinea	245,857	59,426	9,370	-	170
Guinea Bissau	36,125	123,725	1,695	2.019 (2009 est.)	173
Liberia	11,369	249,734	3,750	2.665 (2009 est.)	169
Nigeria	923,768	217,313	148,093	1.966	158
Togo	56,785	12,045	6,585	2.773	159
Benin	112,622	33,221	9,033	2.977 (2009 est.)	161
Sierra Leone	71,740	215,611	5,866	2.216	180
Ghana	238,533	235,349	23,478	1.855	152
Ivory Coast	322,463	176,254	19,262	2.105	163
Cameroon	475,650	10,600	16,700	2.157	153

a. UN Data https://unstats.un.org/unsd/default.htm - b. Sea Around us project (www.seaaroundus.org) - c. FAO 2006 www.fao.org - e. UNDP (http://hdr.undp.org/en/statistics/) -d. http://www.indexmundi.com. Est. 2010.

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3. Coastal fisheries in West Africa

Historical overview and current trends

West Africa is the destination of choice for the mega factory trawler fleets of Europe and Asia (the so-called Distant Water Fishing Nations), who have been plundering the west African waters since the 1960s after their traditional fishing grounds became fished out. They jostle for what remains of the shoals alongside the local fishermen in their pirogues (the artisanal fleets) and their trawlers.

This situation has steadily worsened over the last 50 years. (Alder and Sumaila, 2004). The number of fish caught peaked in 1990, now this number is in steady decline as the fishing grounds are plundered (Heileman, 2009; Heileman and Tandstad, 2009), with a devastating effect on the once strong local fishing industry and a social impact through a drop in wages and the once plentiful supply of protein. (FAO, 2006). Some fishermen have risen to the challenge, equipping their traditional wooden boats or pirogues with motors, and using gillnets, lines and seines to catch enough fish to meet the foreign demand, particularly in Ghana and Senegal (OECD, 2008), but all they do is add to the problem by fishing in waters where the countries have no developed fishing industry, like Guinea Bissau (FAO, 2004a).

Not even the introduction of Exclusive Economic Zones (EEZs) in 1982 under the United Nations Convention on the Law of the Sea (UNCLOS) has helped, because some West African countries responded to their inability to actually exploit this opportunity by selling off the rights to DWFNs like Spain, France, Portugal, Soviet Union/Russia, Korea and Taiwan (Miller, 2007), effectively legalizing what had been wholesale plunder, because these nations also did not have the naval strength to enforce or police these rights.

The fisheries along the coast of West Africa differ in size and scope depending on the country. The biggest are Senegal, Mauritania and Ghana. Fishing in Senegal and Ghana is a traditional source of both employment and work, but in Mauritania the lack of an established fishing industry means the bulk of the fish is caught by foreign fleets (OECD, 2008). Surprisingly Nigeria does not have a strong fishing tradition despite the abundance of tuna and bottom dwelling fish stocks in the Gulf of Guinea. Fish consumption is low and local demand is partly met by imports (OECD, 2008).

Other countries that have had traditional fisheries have been affected by political strife and civil war. In Guinea Bissau, fishery licenses were handed out unofficially after the state collapsed leading to a take over of the industry by unscrupulous operators (OECD, 2008). Sierra Leone's civil war in the 1990s forced traditional fishermen to venture beyond their national waters, specifically in neighbouring Guinea (OECD, 2008), while Liberia's civil war has meant that fisheries are smaller than elsewhere (OECD, 2008).

While it is predominantly men who go out to sea to fish, back on shore it is the women who are responsible for processing, trading and transporting the catch. Traditional methods include smoking, drying, salting and curing, but some countries have an industrial fish-processing sector, particularly tuna fish canneries. These can be an important source of revenue and employment, such as in Ghana where canned tuna is an important export product, while Abidjan in the Ivory Coast is the second largest tuna port in the Atlantic (OECD, 2008). Foreign trawlers however often process their catch themselves aboard their own factory ships, short cutting the local industries either because of they don't meet EU standards or don't have the capacity, further hurting the local fishing industry.

Overfishing

The direct consequence of this congestion of fleets, local and foreign, in West African waters is overfishing – one of the biggest threats to marine life the world over. The FAO estimates that almost 80% of the world's fish stocks are either fully exploited or overexploited, depleted or trying to recover. In West Africa the consequences are dire because the countries in the region are desperately poor to start with and depend on the fish for their economy and their diet. Tuna and the natural bottom dwelling species were slashed by a factor of 13 in the 40 years between 1960 and 2000 (Christensen et al, 2004), at the same time that the giant foreign fleets arrived and began sucking up the marine life to fill their holds and put on the tables of the world's restaurants in an unequal competition with the artisanal fleets (Alder and Sumaila, 2004).

West African governments have not moved to ban these European and Asian fleets, but instead seven West African countries, Cape Verde, Côte d'Ivoire, Gabon, Guinea, Guinea-Bissau, Mauritania and Sao Tome e Principe, have actually signed so-called fisheries partnership agreements with the EU. Mauritania's FPA is the EU's largest fisheries agreement. The situation has been exacerbated by the creation and signing of private fisheries agreements with Asian countries. The truth of the matter is that the value of the catch outstrips the license fee paid to these governments and the foreign fleets do nothing for the local economy through creating jobs or even using local resources for fish production and processing (Gaag et al, 2005). Over and above this though is the illegal, unreported and unregulated (IUU) fishing or pirate fishing. IUU covers fishing without authorisation in national waters or breaking the terms of fisheries agreements and failing to report landings. This pirate fishing costs West Africa up to $1 billion (US) a year (MRAG, 2005).

In 2006, Senegal tried to stop the plunder and protect its local industry (Iossa et al, 2008) by refusing to renew its

FPA with the EU, but all the individual nations – particularly Spain – did was to strike private agreements and reflag their ships as Senegalese in a joint venture with unscrupulous local operators, sidestepping any form of international or regional scrutiny (Iossa et al, 2008). Over and above, some industrial vessels routinely fish in the near-shore waters up to 6 miles from the coast, which are reserved for artisanal vessels, while others fish with licenses from neighboring countries or dispense with any form of authorization whatsoever and brazenly fish illegally (Iossa et al, 2008). But it is not just the foreign fleets that are guilty, many West African artisanal fleets are also culpable and on top of all this, many countries have neither the regulations to limit catches and gear or if they do, then the naval strength to police and enforce them.(Campredon and Cuq, 2001)

Destructive Fishing

Both foreign and artisanal fleets use fishing methods that destroy everything in their path, ruining precious marine habitats that can take years to recover – if ever. Foreign bottom trawlers drag large, heavy nets across the sea floor capturing or killing everything in their path, including centuries' worth of corals and sponges, in their hunt for octopus and shrimp.

The by-catch, or the catching and disposing of fish, sharks, turtles, sea birds and marine mammals that the trawler men don't want can totally derail ecosystems. By-catch is an occupational hazard where destructive fishing gear like gillnets, purse seines, trawls, long lines, and beach seines is used.

Governance and Management

Despite all the efforts by everyone concerned, West Africa still does not have an effective regional fisheries management system to combat overfishing, protect its marine ecosystems and properly manage the resources that it has in a fair and sustainable way. The little that exists is hampered by legal red tape between the countries, a lack of coordination and an inability to enforce the regulations that there are (MRAG, 2005). Over and above this, there is no research capacity to gauge the true extent of the problem facing the region.

The regional initiatives that do exist are powerless in reality because they are not binding on their members, thus The Committee on East Central Atlantic Fisheries (CECAF) is the regional FAO fisheries body, but it has no power to regulate or enforce. The intergovernmental Sub-Regional Fisheries Commission (CSRP) created in 1985 between Cape Verde, Gambia, Guinea, Guinea Bissau, Mauritania, Senegal and Sierra-Leone has failed to reinforce cooperation and coordination between member states, develop sub-regional surveillance efforts, build research capacity for fisheries in the region and ensure a common approach to fisheries at the international level (OECD, 2008). On the continent the African Union, the New Economic Partnership for the Development of Africa (NEPAD) and the Economic Community of West African States (ECOWAS) all provide an important framework to promote coordinated policy and action throughout the region, but decisions around fisheries management, regulations and enforcement remain in the hands of national governments.

Internationally, the West African countries are bound by a number of binding and voluntary international treaties and agreements, including the Convention on Biological Diversity (CBD); the Convention on International Trade in Endangered Species (CITES); the FAO International Plans of Action (IPOAs) on sharks, seabirds, fishing capacity and IUU fishing; the UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks; the UN Port State Agreement; and the FAO Code of Conduct for Responsible Fisheries.

None of them though have been able to halt overfishing and the stripping of marine biodiversity anywhere in the world.

Table 2. Fisheries data

Country	GDP Fisheries (%) - 2006	Fish Consumption /Capita (kg/year) - 2003	Fisheries Imports (Tons) - 2003	Fisheries Exports (Tons) - 2003	Production (Tons) - 2003
Gambia	1.9	28	4 003	950	36 864
Senegal	4.11	26.8 (2005)	1 125	117 906	405 269
Cape Verde	0.8	17.7	436	271	8794
Mauritania	11	17.5 (2004)	14 787	44 209	80 000
Guinea	3.6	14.3	8 182	5 883	11 8845
Guinea Bissau	3.7		523 (1999)	3116 (1999)	5 000 (1999)
Liberia	3.2	4.4 (2004)	3536	84	11 314 (2004)
Nigeria	1.55	9.9	718 621	3 587	505 839
Togo	4	9.2	23 690	7 871	28 706
Benin	3	10.8	31 209	439	41 900
Sierra Leone	9.4	19	96 926	5 043	96 926
Ghana	4.47	29.9 (2001)	19 2177	49 419	451 227 (2001)
Ivory Coast	0.2 (2005)	16.2	295 074	94 812	69 769
Cameroon		15.5	140 549	257	108 121

Source: http://www.fao.org/fishery/countrysector (2006)

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4. Overview of the social relevance and dependency on fisheries

The importance of the fisheries industry to the West African region cannot be overstated. It accounts for more than 4% of GDP in some countries (see Table 2, below), while artisanal fishing is a major source of jobs and money. The West African fisheries sector employs about 1.5 million artisanal fishermen, or 10% of the global artisanal fishing sector (OECD, 2008). Millions more are dependent on the fishing industry through allied sectors like fish processing, maintaining ships, transport and markets. Regionally, exports are worth US $711 million a year, of which Senegal makes up 35%, followed by Mauritania (22%) and Ivory Coast (14%) (WASSDA, 2008). But, as we have seen, some countries see little benefit from fishing because foreign fleets catch and process off shore without ever setting foot on the country of origin.

Fisheries are also important as a source of food and protein for the population. The total level of fish consumption (grams of fish protein per capita per day) is high in West Africa, comprising half the animal protein intake of countries like Guinea, Gambia, Ghana and Sierra Leone (FAO, 2009). In Liberia, the brutal civil war destroyed agriculture pushing up fish as the main source of animal protein to 65% (FAO, 2004b)..

The harsh reality is that a reduction in the fish supply not only affects food security and the health of the local population, it can also have detrimental effects on land species as hunters enter nature reserves to find bush meat in response to the lack of fish (Brashares et al, 2004). Fish supply is so important that Mauritania took the unprecedented step of banning the export of certain fish species to ensure the local population had easy and affordable access to it (ACP, EU - 1999).

Over and above this, the region is already suffering from climate change, especially increased droughts, which are driving coastal migration, putting more pressure on these compromised natural resources and adding to the pool of jobless. As the catch levels decrease, more and more West Africans take to their pirogues to venture out to sea in the hope of landing in Europe in search of a better life (Lafraniere, 2008). Many of them never make it.

Aquaculture

Aquaculture - the aquatic farming of plants and animals - is an age-old practice that is being seen as the answer to the West African fishing crisis. It has grown massively across the world over the last couple of decades, accounting for 47% of the world's fish food supply in 2006 (FAO, 2009). But this comes at a price, namely the destruction of natural coastal areas, such as mangroves, to establish fish farms; the disproportionate amount of wild fish being caught to feed farmed fish; pollution; the displacement of local communities; and non native species of fish escaping into the environment from aquaculture facilities, threatening local fish populations.

Greenpeace believes aquaculture can be a solution to the crisis if it is managed sustainably and fairly. It should be limited to omnivorous or herbivorous species that do not require wild caught fish but rather plant-based feed derived from sustainable agriculture. Aquaculture should be developed to meet local and regional demands for seafood and create local jobs.

© Greenpeace / Francisco Rivotti. Members of the African Voices tour at Selfridges department store, London 2011.

5. Climate change and ocean acidification

After over fishing, climate change is the next great threat to the world's marine ecosystems. It can affect marine ecosystems in a number of ways; Increased sea water temperatures and changes in weather patterns which reduce coastal upwelling, changes in current patterns, and increased levels of disease in marine organisms (Fischlin et al, 2007), all of which reduce the oceans' ability to produce and sustain fish life.

Africa looks like being the worst hit of all the continents (Christensen et al, 2007), with more climatic variation and more intense tropical cyclones, storms, droughts and floods (Christensen et al, 2007). While it is unclear what the likely effects will be on rainfall in the region (Barange and Perry, 2009), sea levels are predicted to rise.

The other threat to our oceans is acidification from increased CO2 emissions. CO2 dissolves naturally in seawater, producing a weak acid called carbonic acid. As the concentration of CO2 in the atmosphere increases, more CO2 dissolves in the ocean leading to an increase in ocean acidity, affecting shell builders like corals and some phytoplankton and affecting the growth and survival of these species. The knock on effect could directly affect a wide variety of marine species in ways that are still poorly understood (UNEP, 2010).

For West Africa, this could spell the end to the West African export fisheries industry, destroying local economies, jobs and food availability (Nellemann et al, 2008). Countries like Mauritania, Mali, Senegal and Sierra Leone won't be able to adapt.


NO MORE
FISH
N THE
SEA

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6. The Way Forward: towards responsible fisheries management

The long term effects of current fishing practices; overfishing, pirate fishing and climate change have depleted natural fish resources and ruined ecosystems. Left unchecked this could have catastrophic effects for West African fishing communities.

Oceans exist in nature, flowing beyond borders, meaning that their management is not the responsibility of a single country. West African governments need to act decisively – now, before it is too late. They need to police their waters and establish a network of no-take marine reserves within an integrated regional approach to resource management and fisheries policies. All of them must ratify, implement and respect international agreements, treaties and plans of action pertaining to fisheries and marine biodiversity. On the other side of the coin, developed countries must help to build the capacity to do all of this and help them make their voice heard on the international stage.

Stronger governance for sustainable and equitable fisheries

Fisheries Agreements

All fishing agreements must be scrapped to be replaced by ones that benefit West African countries first and foremost and are also sustainable. Fishing must serve local communities and economies; providing jobs, income and food security. Trade in fish products to third countries should be derived from domestic and regional fish capture, landings and processing. West Africans and not foreign interests must benefit fully from their incredible marine resources, as is beginning to happen in the western and central Pacific.

Distant Water Fishing Nations must take responsibility for their actions both in their own waters as well as beyond, helping to monitor and police their own fleets when they are in West African waters. West African governments must negotiate transparently with the participation and consent of local/coastal communities who must receive a fair price and distribution of the income from these access agreements, rather than the state.

Artisanal Fisheries

Artisanal fisheries will be critical in the promotion of sustainable fisheries providing more jobs for local communities as well as helping to monitor the international fleets. But they too must be managed, educated and improved. All fishing vessels should be registered; licenses issued and catch limits set in line with science. Measures should also be taken to increase selectivity of fish gear and reduce by-catch.

Local companies should be built up with domestic capital or development support and investments need to happen in processing facilities for both domestic and export markets.

Marine reserves

Marine reserves are critical to restoring, conserving and protecting ocean biodiversity.

Healthy, diverse and species-rich ecosystems found in marine reserves are more resilient and have a greater capacity to adapt to and mitigate the effects of climate change. In West Africa, marine reserves are among the most sustainable and effective solutions to the issues facing the region's fisheries.

Greenpeace wants a global network of marine reserves covering 40% of the world's oceans and a more sustainable fishing industry; two critical steps to healing our oceans.

© Greenpeace / Christian Åslund. Fisherman Holds up Fish in Dakar 2010.

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Greenpeace exists because this fragile Earth deserves a voice. It needs solutions. It needs change. It needs action!

Greenpeace is an independent global campaigning organization that acts to change attitudes and behavior, to protect and conserve the environment and to promote peace. It comprises of 28 independent national/regional offices in over 40 countries across Europe, the Americas, Asia, the Pacific and Africa as well as a co-coordinating body, Greenpeace International.

Greenpeace has been working in Africa to end environmental destruction and fighting for the right of Africans to a healthy environment since the early 1990s. Our campaigns focus on climate change, halting the destruction of tropical forests and preventing the degradation of marine ecosystems.