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### **Senegal: Averting the Overfishing Crisis**

Senegal, a relatively small country situated on the western coast of Africa, has always taken advantage of its vast 330 miles of coastline along the Atlantic Ocean. The boundless opportunities among these waters have played a significant role in defining Senegal culturally and economically. In 2009, commercial fishing supplied more than 600,000 jobs, accounted for 1.7 percent of the annual GDP, and constituted 13 percent of Senegalese exports (Faye, “Senegal: Dispute Over Fishing Permits for Foreign Fleets Hots Up”). As the demand for piscatorial products increased, Senegal boosted its revenue by selling fishing licenses to foreign countries, which were eager to exploit the rich and diverse Senegalese waters. At the same time the government has tried to modernize and expand its domestic fishing economy by creating various subsidies programs to assist local fisherman.

Throughout Senegal, fish is the primary protein source for most families and is supplemented with various vegetables, rice, and millet. Pirogues, traditional fishing canoes often painted vivid colors, bring in more than 70 percent of the total volume of fish caught (“Exporting the Overfishing Problem,” *Greenpeace*). In addition to the jobs created by the successful fishing industry, the authentic fishing boats and methods have attracted much tourism to the coast. These jobs provide significant sources of income to a population with a 41% literacy rate, who on average have received 3.5 years of formal education (“Senegal: Country Profile of Human Development Indicators”). The population density is high around the shores of Senegal because it is considered a traditional, respected, and financially rewarding job. Women often work in the fish-processing plants, while men manage the pirogues. Dakar, the primary fishing area, is the wealthiest region in the nation, in which the average family’s annual income is approximately \$3,495 USD, about three times greater than the poorest region, Kolda (Kazybayev, Otte, and Roland-Holst, “Livestock Production and Household Income Patterns in Rural Senegal”). In Nianing, a small costal village near Dakar, Mansour Thiaow and his brothers have managed well with their six pirogues.

“Before, there wasn’t any electricity at our house. For us, it was candles. Now there is electricity....There wasn’t water. We went over there [to the ocean]...Now there is a tap at the house. There is a telephone. There are plenty of little things” (“Rough Seas: Senegal’s Threatened Fisheries”).

But the increased presence of large-scale, technologically advanced fishermen has created a fierce competition between the two groups. Many traditional fishermen have a tough life; Senegalese workers have remained loyal to their traditional methods, with the exception of gas-powered motors, and must support their average family of 5.0 children as well as their extended family (“Senegal”). Although artisan fishing has become more modern and commercialized, it still remains an important staple to the local communities, tourism, and the economy.

The Senegalese government attempted to create an industrialized sub-sector of fishing in hopes of mimicking the efficiency of the more technologically advanced. In turn, they instituted subsidies on fishing gear, fuel, and exporting, which greatly benefited small-scale fishing. In the past 20 years, this aid has allowed local fishermen to optimize their daily catch efforts by increasing safety, expanding their ability to explore further ocean territories, as well as extending the duration of sea trips (“The Fisheries Sector in Senegal”). While these actions encourage locals to exploit the Atlantic, their fishing methods are far more sustainable than those of industrial foreign ships. The net gain from these local fishing trips directly benefits Senegal, with the profits going back into the economy. Unfortunately, while there have

been efforts to optimize artisan fishing, the government has invested more money in international contracts that offer a large initial payment for virtually unlimited access to Senegal's marine resources.

Clearly fishing is important to Senegal's economy; therefore it is imperative that regeneration of the fish population exceeds exploitation to ensure that its oceans remain healthy and well stocked. The introduction of large-scale international fishing in the area, however, has destroyed the necessary regeneration process. Additionally, a lack of sufficient scientific data has prevented the Senegalese government from protecting certain species and marine habitats that are being exhausted by the increasing number of foreign vessels fishing in Senegal waters. Increased marine research, enforced ocean policy along with efficient product management can reverse the effects of overfishing. For Senegal to safeguard its fishing industry, it must renegotiate its contracts with foreign countries and significantly improve its ability to document, protect and manage its precious natural resource—an ocean filled with diverse and plentiful fish.

### *International Licensing*

After exhausting their own territory within the North Sea and North Eastern Atlantic, European countries have migrated towards the West African coast to meet the high demands for piscatorial products. With it they have brought industrial shipping equipment and procedures that outstrip and outrun both the ecosystem and local fishermen. Many of these third-world nations are lured by the immediate payoffs, which hide the underlying dangers of such intensive fishing methods. These contracts not only cheat the African countries out of millions in potential profit but also permit foreigners to deplete valuable fish stocks and disrupt their maritime ecosystems.

The long-term effects of these contracts can be devastating not only to the environment but also to the economy and local people. Recently, on April 16, 2011, major protests were held in Dakar, the capital and primary fishing port of Senegal, in an attempt to repeal the commercial licensing of 22 international vessels by the minister of maritime economy, Khouraïchi Thiam. Citizens were not blinded by the contracts' relatively small monetary promises; instead, they recognized the pillage of their country's fish stocks and potential income of hundreds of thousands of people. In an article that covered the dispute, Souleymane Faye states, "Small-scale fishing in Senegal has become a mere subsistence fishery because the stocks are so depleted" (Faye, "Senegal: Dispute Over Fishing Permits for Foreign Fleets Hots Up"). Public awareness continues to broadcast the dangers of European contracts and how they defy the sustainability standards of the ocean.

While initially the money from these contracts proves beneficial to countries, inevitably many West African nations feel indebted to foreign vessels. Senegal is pressured to ignore breaches in regulation because of these monetary obligations. This, along with an absence of regulatory methodology, has led to a lack of overall enforcement of legal protocol. Bribery often occurs between alien vessels and government officials, who become easily persuaded to allow illegal and undocumented fishing to proceed (Plage, "West African Fish: Too Many Boats for Too Few Fish," *The Economist*). Artisan fishermen complain that foreign trawlers ignore allotted fishing schedules, encroach upon protected species, and enter Exclusive Economic Zones, which are sea zones reserved only for use by Senegalese small-scale fishermen. There is an urgent need for Senegal to overhaul its marine policy, gather some funding, and implement stronger conservation policies.

### *Policy Proposal*

Foreign countries pay for a fishing license, they exploit Senegal's waters, and earn an immense profit, aided by the minimal enforcement of maritime regulations. They end up making more than 1,000 percent of their initial fee. If Senegal were to renegotiate new contracts that included not only the initial fee but

also a percentage of the profit, the country would be able to fund the much-needed oversight of its fishing industry as well as grow its GDP and improve the life of its people. For example, the government of Guinea-Bissau, a country located on the southern boarder of Senegal, granted a license to the European Union for \$8,250,000 USD. It was later estimated that the EU had taken \$78,000,000 USD worth of fish from their waters (Sullivan, "Poverty Came to Senegal with These Fishing Agreements"). If Guinea-Bissau had a 10 percent profit share of the \$78 million USD, they would receive a total of \$16,050,000 USD instead of just the initial \$8.25 million USD. This profit could be pumped back into the fishing industry and help make Senegal more economically self-dependent. With the help from a world organization, Senegal would learn how to properly negotiate and receive a fair deal for its resources.

To further strengthen this approach, the West African Economic and Monetary Union should converge their fisheries policy in the spirit of the Organization of the Petroleum Exporting Countries' (OPEC) business model. If more countries converged their policy, neighboring countries would not undercut Senegal or get taken advantage of by skewed contracts. This alliance would not only stabilize the environment but also improve the long-term fishing economies throughout the region. Together, the countries would have more clout than a single nation, have a higher bargaining range in their contracts, gain more profit, and eventually cut out the "middle man" from their fishing exportation.

Before signing these contracts, and potentially devastating their resources, strict but reasonable catch quotas need to be instituted to promote the regeneration of fish stocks. According to Dr. Ndiaga Gueye, the Senegalese Director of Marine Fisheries, "the agreement between the EU and Senegal, for example, involves no catch quotas whatsoever designed to maintain fish stocks" (Sullivan, "Poverty Came to Senegal with These Fishing Agreements"). Senegal may be tempted to increase catch quotas to allow more catch, and ultimately gain more shared profit for Senegal; however, this is very short sighted. While a renewable source, fish need time for breeding and development. Through regulated catch quotas, stocks can be properly maintained and the oceans can flourish. The increase in revenue from equitable contracts will also fund conservation projects, marine research and development laboratories, and the improvement in dockside infrastructure.

### *Surveillance and Enforcement*

An important step in conservation is enforcing the rules. Unfortunately, conservation cannot begin until protection of the local fisherman and rehabilitation of the ocean's health can be ensured through a more intensive monitoring program. Although foreign fishermen have been banned from entering certain protected areas, strictly occupied by locals, they have still discovered ways to bypass regulation. Often times, foreign investors hire local fisherman to take advantage of the stable fish stocks within these Exclusive Economic Zones. In addition, many industrial vessels don't return to Senegalese docks for documentation of their catch or official confirmation of their duration, and instead travel straight to their mother country or exporting location. A devoted sub-sector of the ministry needs to monitor these illegal, unreported, and unregulated fishermen; prohibit their destructive fishing techniques; reduce catch quotas by instituting certain species restrictions; and maintain the boundaries of strategically chosen Marine Protected Areas. With serious investments in sufficiently equipped surveillance vehicles, such as boats and helicopters, the Senegalese Ministry of Maritime Economy would be able to maintain proper sea etiquette and promote sustainable management of its waters.

### *Marine Research and Documentation*

While the surveillance of fishing vessels is crucial to stop illegal endeavors of ships from abroad, Senegal needs to know what exactly it is protecting. Currently, there is no reliable system of record keeping and as a result, overall fish exploitation is being unreported. The only known form of recording is voluntary and takes place at commercial processing plants. Additionally, their limited information isn't being distributed

and thus can't be utilized by government officials and conservationists. According to Papa Gora Ndiaye, director of the environmental organization ENDA-REPAO, "It's difficult to get the resource data on the volumes captured by the industrial fleet." Ndiaye also confirms that much of foreign industrial catch never returns to Senegalese ports because it goes straight to their global destinations; therefore "catches probably dwarf the official numbers" ("Rough Seas: Senegal's Threatened Fisheries"). Once overall documentation improves, marine research will allow officials to implement development and adaptation plans to reverse the affects of over fishing.

The monitoring and research of fish regeneration is critical before any large conservation plans are instituted. Efforts for marine life protection have been stunted by the lack of sufficient scientific information. Without reliable data of the species being caught, successfully processed, and exported each year, it is impossible to calculate the true market value, availability, decline rate of fish species, as well as the necessary adaptation plans to prevent further environmental destruction. Marine research and development laboratories are a major investment needed to monitor habitats and exploitation patterns so that the appropriate steps are taken to save endangered species and ecosystems.

### *Dock Infrastructure*

This lack of reporting extends into local fisheries as well, because of the informal manor in which Senegalese fishermen dock. Traditionally, they dump their catches on the sand or concrete surfaces to be immediately distributed to fishmongers and processing plants. This unsanitary method lacks an official way to record numbers and also increases spoilage rates. There aren't enough officials at these impromptu dockings to gather the needed information. The government needs to not only increase the amount of reliable officials whose job is solely to record daily catches but also institute a more regulated docking system that encourages fishermen to have their loads recorded through a system of rewards, such as increased subsidies on fishing gear, motors, and icebox pirogues. Alongside this documentation method, improved infrastructure of docking areas and fishing storage depots could also make the process more manageable for officials and fishermen.

Subsidies and increased funding towards fisheries infrastructure could help modernize ports and decrease spoilage rates. Due to a growing backlash to such unsanitary conditions, some processing plants have stressed their cleanliness and transportation process, such as *La Pirogue Bleue* processing plant, which publicizes its clean and efficient fish transportation methods, such as using icebox trucks and large-capacity storage mechanisms. Although locals typically have minimal concern for the casual handling of their fish products, foreign markets will generally increase the purchasing rates for fresh, clean, and high-quality fish. The enhancement of docks and landing stations would help optimize the frequent transactions between fishermen and fishmongers, allowing for a smooth passage of fish from boat to processing centers. The storage and preservation facilities within these processing plants could also be enhanced and made more available through subsidies to help decrease spoilage rates.

With the implementation of this suggested policy and development plan, Senegal's renewable marine resources should have the opportunity to restock and reach a sustainable population level. Although the primary goal is to nurture the environment back to health, this plan also helps establish an efficient fishing industry that will economically benefit the people of Senegal. Through the establishment of revenue sharing in contracts, Senegal will gain more revenue that can be aimed towards marine research and development laboratories, improvement of fisheries infrastructure, and increased enforcement of environmental regulations. This policy should also provide jobs in the new areas of conservation and monitoring in addition to protecting the artisan fishing culture of the coastline. It will also safeguard the food security of Senegal by extending the bounty of the ocean.

In addition, as the country's GDP grows, it should be able to improve the overall quality of life for its

population, thereby raising the standard of living. If the alliance among West African nations grows, the entire region will benefit from smarter foreign contracts, improved relationships as well as healthy ocean resources. By adopting a sound fishing policy, the nations of West Africa will lead the way for the rest of Africa to form alliances that empower them to make the right decisions for their countries for not only the immediate time but also for the long-term future. It is important that nations, such as Senegal, begin to demand more for themselves and attempt to pursue social, political, economic, and environmental prosperity.

### Works Cited

- “Exporting the Overfishing Problem.” *Archive.greenpeace.org*. Greenpeace. Web. 11 Sept. 2011. <<http://archive.greenpeace.org/comms/fish/part8.html>>.
- Faye, Souleymane. “Senegal: Dispute Over Fishing Permits for Foreign Fleets Hots Up - IPS Ipsnews.net.” *IPS Inter Press Service*. Web. 11 Sept. 2011. <<http://ipsnews.net/news.asp?idnews=55285>>.
- “Fisheries Administration and Management.” *FAO*. Fisheries and Aquaculture Department. Web. 11 Sept. 2011. <<http://www.fao.org/docrep/005/y4281e/y4281e05.htm>>.
- “Fisheries: Oceans Under Pressure.” *IUCN.nl*. National Committee of The Netherlands. Web. 18 Aug. 2011. <[http://www.iucn.nl/our\\_themes/fisheries/](http://www.iucn.nl/our_themes/fisheries/)>.
- “An Icelandic Success.” Editorial. *The Economist* 30 Dec. 2008. *The Economist - World News, Politics, Economics, Business & Finance*. The Economist, 30 Dec. 2008. Web. 25 Aug. 2011. <<http://www.economist.com/node/12798518>>.
- Kazybayev, Saule, Joachim Otte, and David Roland-Holst. Livestock Production and Household Income Patterns in Rural Senegal. Rep. no. RR Nr. 06-13. Rural Development Research Consortium, Dec. 2006. Web. 24 Sept. 2011.
- Lewis, Jori. “Rough Seas: Senegal’s Threatened Fisheries.” *VQRonline.org*. VQR: Virginia Quarterly Review, 2010. Web. 5 Sept. 2011. <<http://www.vqronline.org/articles/2010/winter/lewis-rough-seas/>>.
- Mutume, Gumisai. “Africa Seeks to Safeguard Its Fisheries.” Editorial. *Africa Recovery* Apr. 2002: 12. *Welcome to the United Nations: It's Your World*. United Nations. Web. 18 Aug. 2011. <<http://www.un.org/ecosocdev/geninfo/afrec/vol16no1/161fish.htm>>.
- Plage, Hann. “West African Fish: Too Many Boats for Too Few Fish | The Economist.” Editorial. *The Economist* 14 June 2001. *The Economist - World News, Politics, Economics, Business & Finance*. The Economist, 14 June 2001. Web. 3 Sept. 2011. <<http://www.economist.com/node/656190>>.
- “President of Namibia Awarded for Contribution to Food Security.” *Africa: The Good News*. 8 Sept.

2010. Web. 21 Aug. 2011. <<http://www.africagoodnews.com/governance/leadership/2099-president-of-namibia-awarded-for-contribution-to-food-security.html>>.

Rep. *The Fisheries Sector in Senegal*. UNEP Country Projects. Web. 9 Sept. 2011. <[http://www.unep.ch/etu/publications/Synth\\_Senegal.PDF](http://www.unep.ch/etu/publications/Synth_Senegal.PDF)>.

“Senegal.” World Statistics Pocketbook United Nations Statistics Division. Web. 24 Sept. 2011. <<http://data.un.org/CountryProfile.aspx?cname=Senegal>>.

"Senegal, Country Profile of Human Development Indicators." International Human Development Indicators - UNDP. UNDP. Web. 24 Sept. 2011. <<http://hdrstats.undp.org/en/countries/profiles/SEN.html>>

Senegal/United States. West Africa Sustainable Seafood Development Alliance. West Africa Trade Hub. USAID, Apr. 2008. Web. This document was emailed to me by Steven Perry, Economic Counselor for Senegal and Guinea Bissau of the US Embassy in Dakar, Senegal. His email address is: [perrysj@state.gov](mailto:perrysj@state.gov) .

Sullivan, Nancy. “Poverty Came to Senegal with These Fishing Agreements” Web log post. *Nineteen Years and Counting in Papua New Guinea*. 2 June 2011. Web. 9 Sept. 2011. <[http://nancysullivan.typepad.com/my\\_weblog/2011/06/-poverty-came-to-senegal-with-these-fishing-agreements-and-nowlike-west-africa-png-now-faces-the-end.html](http://nancysullivan.typepad.com/my_weblog/2011/06/-poverty-came-to-senegal-with-these-fishing-agreements-and-nowlike-west-africa-png-now-faces-the-end.html)>.

United States. USAID/COMFISH. The University of Rhode Island, 14 Feb. 2011. Web. Aug.-Sept. 2011. This document was emailed to me by Steven Perry, Economic Counselor for Senegal and Guinea Bissau of the US Embassy in Dakar, Senegal. His email address is: [perrysj@state.gov](mailto:perrysj@state.gov).