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## PART ONE: The Pros and Cons of Fishing in Dependent Areas

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Imagine a perfect spring day down by a pond that is teeming with fish. You cast in your pole and the fish are biting; it is a wonderful pastime. What if in the same setting not a fish was to be found? What if the lack of fish meant more than a dull or frustrating time, but rather spelled disaster? This is a reality in areas around the world where fishing has historically been the primary source of income and is poised remain this way. Overfishing—the removal of fish from their natural environment at an

Author's comments about this article: It is my hope that students will read this and take an interest in everyday things, actively seeking to see the bigger picture. Seemingly personal issues such as that of eating fish have global effects. What can we do to make sure that we are being responsible with what is available to

us? 99

unsustainable level—is a frightening thought for fishing dependent areas, because their economy would be crippled without the trade. In these situations, fishing is cultural just as much as it is economical ("Areas Dependent"). When the fishing industry is the chief income of an area, the dependency is beneficial in many ways, but not enough to outweigh the disadvantages. This issue is not so isolated as to justly elicit indifference on the part of the fish consumer. Overfishing in one section of the world will eventually affect the entire ocean. Thus, it is to the consumer's advantage to understand how the fishing industry is affecting the areas dependent on it and vice versa.

Before the Industrial Revolution took hold of the business, fishing was done a smaller and more personal scale. Equipment that would enable mass catching, storage, and discovery of fish had not been created or popularized (Driscoll & Warhol, 2007). Since fishing was limited, overfishing never became a looming problem and those in politics and environmental sciences did not need to prioritize much time for making and enforcing regulations. This changed when suddenly the factory trawling, seining, and long-lining ships filled the seas. Species such as herring, Atlantic cod, and mackerel noticeably dipped in population by the late '60s (Driscoll & Warhol, 2007). United

States legislation supported fishing endeavors even as others scrambled to head-off the issue with efforts such as the United Nations Convention on the Law of the Sea (UNCLOS) (Driscoll & Warhol, 2007). Some businesses skirted around the law or outright broke it, but the overall result was people systematically finding new areas of the ocean to exploit (Koslow, 2007). This exploitation is cause by a rising demand for fish products—a demand that greatly affects areas dependent on the fishing trade. If no outlet for the ocean's bounty existed, then this discussion—as well as the occupation of fisherman—would be moot. Over the past few decades, nutritionists and doctors have contributed to the demand by rightly hailing the benefits of eating fish over beef (Driscoll & Warhol, 2007). According to the World Health Organization, since 1961 there has been a steady increase in the consumption and output of fish each year at an increasing rate of 3.6% ("3.5 availability"). Coupled with the growing world population, this has accounted for nearly double availability of fish products on the market per capita ("3.5 availability"). This bodes well for the ocean's resources has increased, contributing to overfishing. To sustain the industry, more nets are being put out and more hooks are being strung. Still, less fish are being caught then in decades previous, according to ecologist Boris Worm and Ransom A. Myers of Dalhousie University in Halifax, Nova Scotia (Harder, 2003). For less fortunate coastal fishermen and their families—who are more likely to be dependent on fish for food as well as employment than their mainland counterparts—this means possibly catching the very food that they are unable to afford ("3.5 availability").

With this in mind, it is important to realize that the fishing industry is strained. Steps have been taken to preserve what the ocean has to offer. One of these steps is aquaculture, also known as fish farms, and it now provides about one third of the food fish supply, according to the World Health Organization ("3.5 availability"). On the surface, this may appear detrimental to communities such as that of the Miskitos in Nicaragua because they rely heavily on lobster diving. However, aquaculture can only adequately raise certain delicacies—some examples are oyster, salmon, and mussels. For various reasons, lobsters are incompatible with aquaculture. In grocery stores they have bands on their claws for a reason: lobsters value their space and become cannibalistic in the comparatively small quarters found both there and in aquaculture. In addition, it takes several years for a lobster to mature; meanwhile the overseers have to keep them fat and healthy ("Why aren't more," 2008). One might even assert that aquaculture improves the livelihood of the Miskitos because there are greater quantities of other fish, making

the rarer lobster more valuable. Is this a good thing?

Fisheries scientist Daniel Pauly of the University of British Columbia in Vancouver says, "Scarcity makes rare species expensive and economically props up fisheries even as their resources erode" (Harder, 2003, par. 19). It is true that reduction of biomass—the total mass of living matter within a given unit of environmental area—is beneficial at certain levels. According to Myers, when biomass of most species is reduced to near half of its normal size, the extra space and resources cause the remaining fish to thrive. Beneath that level, biomass reduction becomes detrimental to the specie's survival (Harder, 2003). Such is the case of The Miskito Coast, where shallow diving grounds have been depleted, forcing divers to go further out into more hazardous waters (Schmidt, 2008). A reason for this increased risk-taking is clear: according to Dr. Francisco Selvas of the Nuevo Amanacer hospital in Puerto Cabezas, "The only income that comes into this town is from the buzos [divers]" (Schmidt, 2008, par. 11). Some men can make in the area of \$200 dollars a day through diving, which is a considerable sum for where they live.

Nicaragua is one of the poorest countries in the world, and lags far behind other countries when it comes to modernized equipment, such as air tank pressure and fullness gauges and diving suits (Block & Vickers, 2002). A rampant result of this neglect is widespread variations of decompression illness, which can cause anything from debilitating joint pain to death (Block & Vickers, 2002). Decompression illness occurs when someone has stayed in deep water for extended periods of time, or has returned too quickly to the water's surface (van Zeller, 2007). Individual divers are responsible for ignoring recommended diving depths and numbers of dives per day, just as the business owners are responsible for encouraging these practices. (van Zeller, 2007). On fortnight long trips, captains have been known to stay out at sea for the remainder of the scheduled voyage even though a diver has obviously developed symptoms of decompression illness (van Zeller, 2007). Returning home early would greatly reduce everyone's paycheck.

Larger regulations are ignored as well. A lobster black market actually exists in Nicaragua, and the suppliers are not alone in frequently disregarding the lobster fishing ban which goes into effect every April and June (Schmidt, 2008). Hunting immature lobster has also been banned to help the lobster's recovery from overfishing, but the practice still continues (Schmidt, 2008). Crime connects with the profit again as some divers participate in the drug scene or legal banalities such as alcohol. This, however, is an unbalanced picture. Fishing itself is no bane on the Miskito society, and these ills are caused by too little training and disregard. Should safety measures be brought up to par—and regulations followed—the entire industry would likely benefit after a time of sacrifice. Removing the fishing industry entirely would be irresponsible and chaotic: this is a recurring theme in fishing-dependent areas. After hurricanes such as Felix have hit Caribbean shores, there have been riots. Other times when outside influences have affected the trade, people attempted arson and seized public buildings (Schmidt, 2008). Living conditions may be poor in Nicaragua, but in the dissolution of the diving and fishing trade there would quite literally be no hope.