

From life-sustaining to life-threatening: The case of the sea cucumber fishery in Nicaragua

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Over the last several decades, researchers have been increasingly concerned about overfished marine resources around the world (Jackson et al. 2001). Declines in natural stocks of several species have fuelled reflections on poor fisheries management and the unsustainable exploitation of seafood, at the expense of grander designs such as the well-being of future generations and the conservation of ocean biodiversity. Sea cucumber fisheries have been at the forefront of crusades for ecosystem and community-based exploitation. Harvests of tropical sea cucumbers have surged around the Indo-Pacific region in countries such as Indonesia, Papua New Guinea, India, Solomon Islands, Kiribati, and a constellation of tiny island states in Melanesia, Micronesia and Polynesia. The general consensus is that sea cucumber fisheries typically follow the alarming boom-and-bust cycle (Purcell et al. 2013, 2014). As the demand from Asian markets, specifically China, grows incessantly, so does the pressure exerted on resources. Concurrently, sea cucumbers constitute the fastest growing aquaculture sector, having generated close to 4 billion US dollars in revenue in China alone in 2015 (Yang et al. 2015).

In recent years, meetings organised by the United Nations (Food and Agriculture Organization) and the International Union for Conservation of Nature were tasked with exploring solutions to the sad fate of sea cucumbers worldwide, and orchestrating better transfer of knowledge and technology among stakeholders to protect the ever-more fragile sea cucumber resources. Horror stories consisted mainly of sea cucumbers locally going extinct and altercations between landowners, harvesters and government officials over quotas and licences. However, a very different spectre has recently started to creep over the sea cucumber industry. One that reeks of human injustice, abuse and even death, as it unfurls in the postcard perfect lagoons of Central America.

The present contribution reports on recent discussions with the Miskito Prince Jose Miguel Hendy Coleman in fall 2016. Aside from being an environmental activist, Mr Coleman is one of the many

Miskito fishers who expressed concerns about the sea cucumber fishery in Nicaragua. As a prince, descendant of monarchic rulers of the former Miskito Kingdom, Mr Coleman is deeply affected and preoccupied by the illegal harvest of marine resources and, most importantly, by the avoidable loss of human life.

Sea cucumber fishing was introduced in Nicaragua by Honduran fishers. During the early 1990s, the number of vessels involved grew from 1 to 20 as the fishery expanded. In recent years, the primary species harvested include *Holothuria mexicana* and *Isostichopus badionotus*, which combined, constitute 90% of the catch. However, other products such as conch, lobster, shrimp and high-value fish species such as snapper, snook and kingfish are also harvested. Unsurprisingly, immature sea cucumbers now represent a growing and alarming proportion of the catches that get trucked to processing plants to be processed. They are primarily exported to the United States by Chinese exporters living in Nicaragua or exported to Honduras illegally or legally through the island of Roatan (off the coast of Honduras). Among the fishers' concerns are illegal fishing, taking undersized individuals, inhumane treatment, and the lack of other livelihood alternatives.

About twenty 15–18 m-long boats are known to fish daily along the coast of Nicaragua, primarily around the Miskito Cays. These islands lie ~72 km away from the fishing communities. Fishing trips may last up to 12 days, with activities carried out during the daylight hours (05:00–17:00). Each boat carries about 20–30 fishers and 10 crewmembers, including workers, cooks and the boat captain.

The fishery operation financiers (Chinese and Koreans) operate from nearby Honduras. Their main contacts in Nicaragua are the Nicaraguan boat owners who hire a boat captain, a scale operator (to weigh the catch inside the boat) and a "sacabuzo" (who hires the fishers); all of which are Spanish or Mestizo descendants (the latter being of mixed Spanish and native Indian descent). The *sacabuzo* hires the fishers who are all Miskito. Miskitos are

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descendants of the Indian natives, with African and British ancestry. Miskitos are also hired to work at the sea cucumber processing plants.

There are alarming reports of unethical and inhumane conditions aboard the fishing vessels, and the desperate poverty that drives these fishers to work in dangerous conditions. According to Mr Coleman, a worker can dive up to 17 times a day to depths of 70 m (with no decompression protocol), with a mask and carrying a tank in their arms, no regulator or weight, just trying to swallow the bubbles that are coming out of the tank! Therefore, each dive lasts about 10–15 minutes per tank. At times, two fishers dive using a shared tank. The age of fishers ranges from 15 to 45 years; about 20% of them are 15–19 year-olds who are “trained” on two to three dives by the older fishers. After this “training”, they are unofficially certified to fish. The fishing grounds consist primarily of 7,000 ha around the Miskito Islands, which are the native fishing grounds of artisanal Miskito fishers.

According to Mr Coleman, these unregulated fishing methods result in at least one to three injuries or fatalities daily. Fishers express concerns over the fact that injured or dead co-workers are not returned to shore until two to four days after the fact or, sometimes, until the last fishing day. During this time, the bodies of the Miskito fishermen who died from decompression accidents are reportedly preserved on ice along with the catch. The fishers suffering from decompression sickness (dizziness, hallucination) that can make it back to the harbour are finally taken to a hyperbaric chamber. However, Mr Coleman indicated that the boat captain typically does not report the true fishing depth (often reporting that fishing occurred at 30 m only). Therefore, the chamber can be set at the wrong pressure, which can result in a fisher’s death.

Those lucky enough to survive their injuries often have to go through further ordeals. According to Mr Coleman, when a fisher seeks compensation for decompression disability from the boat captain, the latter refers him to the *sacabuzo* who hired him. The *sacabuzo* then refers the fisher to the boat owner who might refer him to the owner who lives in Honduras. Unable to contact the true operation owners, the disabled fishers often have no other resort but to retire without receiving any compensation.

Another main concern reportedly expressed by fishers is that boat owners do not allow inspectors, government officials or non-governmental organisations to inspect or search their boats. Sea cucumbers

barely fetch USD 6.00 kg⁻¹. Wives and mothers are allowed to collect their husbands’ and sons’ pay in advance but interest is charged. Alleged items carried in the fishing boats include drugs such as marijuana, which fishers can exchange with their catch; meaning they can obtain these items instead of getting paid for their work. Fishers claim that these drugs provide them with the courage to dive deeper to find more sea cucumbers.

The fishers are also concerned about the inhumane treatment that prevails during fishing trips. Mr Coleman reported that boat captains have been known to throw meals on the deck for workers to pick up and eat. Food provided includes beans, rice, chicken, beef, pork and primarily fish which is at times not very well cooked. Moreover, the boats themselves are generally dirty and unsecure. There are even stories of fishers complaining of exhaustion who got punished; the boat captain would place tissue paper between their toes and light it to warn others not to complain. When asked why they continue to fish despite the risks and mistreatments, fishers apparently indicate that it is the only job available to them in Nicaragua. To draw attention to the problem, Mr Coleman conducted a video interview on 30 November 2016 with Miskito fisher Gary Venegas Valerio from Bilwi Nicaragua who was injured while harvesting sea cucumbers.⁴

The negative impact of this exploitive practice is manifold. On one side, the sea cucumber resources are severely depleted and the artisanal Miskitos’ fishing grounds are degraded, consequently affecting their livelihood and income. Fishers are faced with having to sell their meagre catches of lobster, conch and fish to the same boat owners that oversee the sea cucumber fishery. They are further financially affected from being paid based on how much they catch, especially when the person operating the scale underestimates the harvests. Worst of all, the families of invalid or deceased sea cucumber fishermen are left struggling with overwhelming psychological and financial problems.

Offering the tiniest sliver of hope, Nicaraguan fishermen have expressed interest in sea cucumber aquaculture. They have also expressed a desire to learn about the biology and ecology of the sea cucumber species they currently fish and to get more information on methods of harvesting sea cucumbers. Perhaps they just need a bit of help from the government of Nicaragua to overturn a bleak and untenable situation. We have decided to make a contribution through this short article, in

⁴ The interview can be seen on YouTube at: <https://www.youtube.com/watch?v=mT-BizpDIqA>

the hopes of helping the Miskito from Nicaragua get a fair chance at a brighter future.

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We would like to thank Jose Miguel Hendy Coleman for sharing this life story with us. We dedicate this text to all the people in Nicaragua and elsewhere who fish for sea cucumbers, sometimes under very precarious conditions.

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