Community-Based Approach to Queen Conch Management in The Bahamas

Enfoque basado en la comunidad para el manejo del caracol rosado en las Bahamas

Approche communautaire de la gestion du lambi aux Bahamas

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EXTENDED ABSTRACT

The Queen Conch, *Aliger gigas*, is an iconic cultural symbol of The Bahamas and is a staple in Bahamian diet. However, due to overfishing of juvenile populations, the sustainability of the conch fishery is threatened. In The Bahamas, the resource is easily exploited due to its slow-moving nature and its residence in shallow habitats. This is compounded by weaker enforcement due to capacity limitations and outdated fisheries laws and regulations. The livelihoods of over 9,000 fishers across the country, who would be left susceptible to growing economic challenges, would be at risk under the current management plan, if continued as is (Gittens and Braynen, 2013). This may result in added fishing pressure on other fisheries, which are also strained, and further challenge fishing communities with limited alternative livelihoods (Caribbean Regional Fishery Mechanism, 2012). The community-based approach to Queen Conch fishery management considers a bottom-up approach to creating a sustainable fishery. This study considered value added conch products and alternative livelihoods options for two pilot communities in the district of East Grand Bahama considering their expressed interest. A socioeconomic survey was conducted within the community wherein 29 residents stated that they felt confident in their ability to manage their fishery and benefit in the future. Most individuals indicated that they follow the laws and regulations set forth for their fishery. Every resident surveyed was interested in further training for conch management, and value-added skills. An outcome of the project is a report that recommends a three-part process where community leadership was identified to form an association/quasi-cooperative, training residents in conch shell products creation/artisan craft, and the potential of conch ranching for educational and ecotourism benefits (short-term) and replenishing fisheries stocks (long-term).

INTRODUCTION

Conch are marine gastropods, snails that are herbivorous and slow growing (Davis and Cassar, 2020). The average age for sexual maturity is 3.5 - 4 years and is determined by the thickness of the flared lip. Through funding from the Inter-American Development Bank (IDB), the Bahamas National Trust (BNT) worked with The Nature Conservancy (TNC) Bahamas Program to develop four components with a view of increasing the socio-economic benefits derived from the conch fishery. Two Family Island communities in Grand Bahama were chosen, McLean's Town and Sweeting's Cay, to pilot the study. The four components include: increasing the livelihoods of conch fishers and their families, establishing a community-based management of conch within a marine protected area, creating a domestic market for responsibly fished conch through sea-to-sale traceability and local branding, and project evaluation.

The general process for conch fishers is relatively straightforward: fishing the conch, skinning the conch meat, discarding the shell either at sea or along the coast on a midden, and selling the meat to a fish market or to fish buyers. Currently, conch fishers in East Grand Bahama report that they receive an average of $4BSD per pound or $2-3BSD per piece of skinned conch meat. Most fishers view the shell as a waste product. Considering value added products to the queen conch fishery can help to increase the revenue and profits of resource users. This, in turn, can allow for a decrease in fishing pressure, should there be a suitable increase in monetary gain. Additionally, equipping fishers and their families with alternative livelihoods may help to support their livelihoods in the likely event of changes to the fishery completed in October 2018.

METHODOLOGY

Over the course of the project, several surveys were conducted. The first survey at the beginning of the project was conducted by The Nature Conservancy Bahamas program led by Natalie Miaoulis (TNC), Jessica Musengezi (TNC), and Agnessa Lundy (BNT) along with a group of community volunteers. The objective of the survey was to establish a baseline study to understand fisher's livelihoods, determine initial level of interest in participating in alternative livelihoods and value-added conch activities, and to make recommendations to inform the design of alternative livelihood projects. The survey method was a combination of focus group discussions and one-on-one face-to-face surveys. The survey report was completed in October 2018. In 2019, post Hurricane Dorian, one-on-one face-to-face surveys were conducted to contact the community members to get a sense of interest in moving the previously outlined value added and alternative livelihood trainings. Due to conditions of the communities post Hurricane Dorian, internet and cellular connections were often a challenge, and therefore, face to face surveys were more effective. Survey report was completed in January 2020.

RESULTS AND DISCUSSION

The results from the baseline survey showed that of the three fishing communities surveyed (McLean's town, Sweeting's Cay, and West End) 31% of respondents said that fishing was their main source of employment and an overall 63% of household members were involved in either full time or part time fishing. 57% owned a motorized boat, 95% access to electricity, 90% access to running water, 59% felt that they had decreased quality and stability of household income, 54% felt it not easy to find employment.

When surveyed again in 2019 post Hurricane Dorian, both McLean's town and Sweeting's Cay residents expressed a strong interest in value added and alternative livelihood training. Farming was considered most useful as an alternative while conch pearl collection, exporting conch shells and conch farming were value-added products the community expressed interest in. 63% were interested in joining a cooperative.

Four residents and one local governmental representative participated in the Fishers learning exchange to Naguabo, Puerto Rico. During their visit they learned about growing conch, challenges and triumphs, similarities, and differences in the conch industry from their Caribbean counterparts. This trip was made possible by partners Conservacion ConCiencia and Dr. Megan Davis, Aquaculture, and Stock Enhancement professor at Florida Atlantic University.

The East Grand Bahama Fishing and Farming Cooperative was formed with a mix of individuals from both McLean's town and Sweeting's Cay communities. This leadership structure was formed to allow residents to take advantage of both economic and social benefits available to their communities. As any other cooperative structure, each member has equal voting rights, and this cooperative promotes the interest of its members as owners. The cooperative is currently focused on eco tours in their community and conch shell arts and crafts.

The conch shell carving and jewellery workshop served as the value-added conch product training. This was able to expose a group of residents to specialised conch cutting and carving techniques along with safety training. This conch shell carving workshop allows residents to turn conch waste into value added products such as jewellery pieces and crafts.

There were ten residents that participated in conch ranch technical training where conch was tagged and monitored in two forty-seven-foot diameter pens located approximately 26.62° North, 77.90° West near the island of Deep Water Cay and Sweeting's Cay, East End Grand Bahama. The pens were stocked with 20 conch per pen.

The residents also received additional alternative livelihood trainings, such as boat captain training and licensing, alongside small-scale farming training with the installation of raised beds in newly established community gardens.

KEYWORDS: Queen Conch, fisheries, community-based conservation, value added products, sustainability

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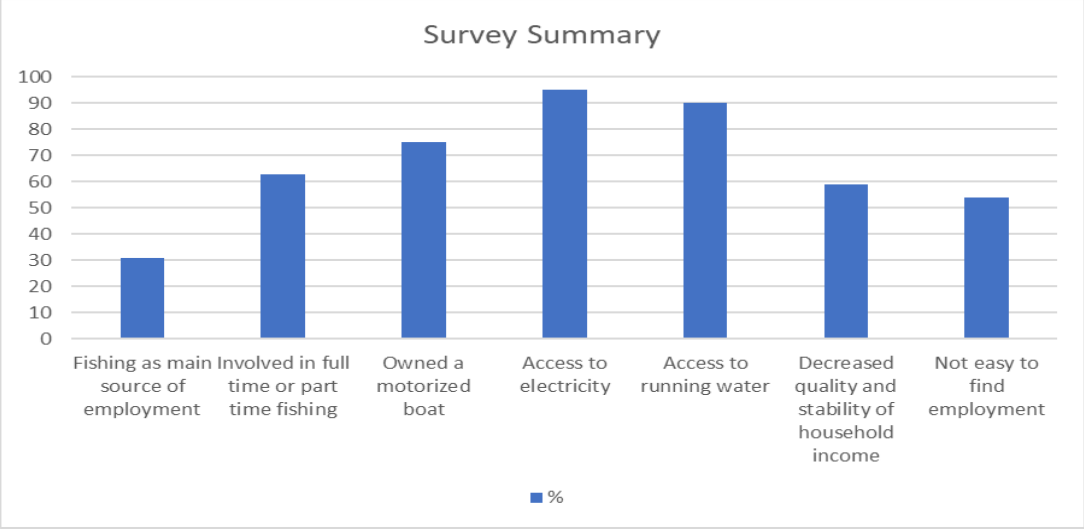

Figure 1. Baseline survey summary,