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Participatory Approaches to Supporting the Adoption of New Conservation Measures

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Abstract

Island communities, which rely on marine resources, are increasingly facing risks such as global climate change and overfishing, leading to lowered catch rates and biodiversity loss. This not only threatens ecosystems, but livelihoods as well; thus, sustainable ocean and fisheries management actions are critical in maintaining habitat integrity and increasing fish populations. Developing legal policy and restoring habitats are two important sustainability actions; however, these methods do not always ensure community buy-in or acceptance. A growing field in resource management involves the use of Behavior-Centered Design (BCD) and Community-Based Social Marketing (CBSM) to improve community involvement and adoption of management measures, working with communities to encourage behaviors that promote the sustainable use of ocean resources. BCD and CBSM combine how humans make decisions with steps to design programs to improve inclusion and collaboration, and enhance impact such as to increase successful adoption and implementation of conservation policies. It has been proven to be an effective tool, accelerating community support of sustainability initiatives. This project created a guidebook centered around implementing these behavioral approaches in the context of ocean and fisheries management, created with guidance from personale at the Waitt Institute, the Blue Azores Program, and the University of California San Diego. It will support conservation managers in their initiatives and outreach with communities by providing an easy-to-understand framework and knowledge base focused on behavioral approaches. The guide includes aspects such as successes and lessons learned in BCD throughout the industry, ethics and social justice, and strategies for implementation and testing for success. It presents a case study of São Miguel Island, a community with a rich culture of sustainability throughout history, as well as in current fisheries and ecosystem conservation programs. The island is in the Azores archipelago, an autonomous region located about 1000 miles off the coast of Portugal. A supplemental ArcGIS StoryMap web page was created to highlight the rich marine-based culture of communities on São, Miguel Island. The guide will act as a resource that can support marine managers in their initiatives, improving inclusion, equity, and increasing the chances of effecting long-term change.

Background

Coastal communities often rely on their local fisheries for sustenance, livelihoods, export, or as an important tourism commodity. Unfortunately, these communities can face several issues as fisheries grow depleted, leading fishers to travel further offshore, increase working hours to continue bringing in the same level of catch, or find other solutions. These can be obstacles for communities which may not have additional time or resources. Thus, it is important to create sustainable management measures such as Marine Protected Areas and fisheries regulations to restore and replenish ocean ecosystems and species. Regulations can provide governmental or economic structure for program goals; however, this alone cannot solve environmental crises, and there is no guarantee that the public will follow these laws. Behavior-Centered Design and Community-based Social marketing (CBSM) strategies have been successfully implemented in communities to increase support of sustainable ocean management efforts, and over time these programs can lead to improvements in fishers' livelihoods and the country's economy through increasing fish populations and the health of the ecosystems.[1-3] These behavioral strategies link human behavior with conservation and management programs to more effectively guide individuals and communities towards sustainable behaviors.[1-3] In its essence, natural resource management is based entirely on how people view, interact with, and value resources, each other, and environments.

An understanding of human behavior and psychology is critical to designing effective sustainability programs, as many program goals can only be achieved through a high level of public participation.[1,2] Many programs utilize an information-intensive structure; however, simply providing information is not enough to support individuals and communities through a change in action and behavior.[1,2] Program planners can sometimes assume that increased public knowledge on an environmental issue equates to behavioral changes to support the programs goals, such as providing media advertising or informational reading materials, but studies have proven that this is not directly correlated.[1,2] Other programs rely on a link between behavior and economic self-interest, that if something saves the consumer money and is good for the environment, then it will be adopted; however, human behavior is not always rational.[1,2] Educational programming and economic based approaches are best used when combined with other techniques during the BCD and CBSM processes to increase program efficacy.

Behavior-Centered Design and Community-Based Social Marketing

Behavior-Centered Design takes these difficulties into consideration and can be utilized alongside Community-Based Social Marketing to influence an individual or community's actions to benefit a planned sustainability goal.[1-3] Specifically, these tools provide a framework that combines how humans learn and make decisions with steps to design programs to influence action, such as to increase successful adoption and implementation of conservation policies, as well as involving communities in planning processes to improve the effectiveness of management programs.[1-3] Oftentimes, if people are hesitant to adopt a behavior, it may be due to specific barriers in place, whether cultural, societal, or personal, which are preventing the person from complying with or accepting the desired behavior.[1-3] In the case of fisheries management, fishers may be cautious or slow to adopt a fishing regulation, and this is where the specific barrier can be identified and addressed through a BCD strategy to identify the specific behavior and lead to overall community acceleration of adopting fishing sustainability measures. Barriers

can be specific to individuals or communities; it is important to identify differences between those who are already displaying the desired behaviors in the community from those who are not.[1-3] This can be done through focus groups, observational studies, or surveys, and although a barrier may seem obvious to program planners from an outside perspective, it is critical to utilize public input to identify actual community needs.[1-3]

Several strategies can be utilized to encourage behavior centered design including commitments, normative messages, prompts, nudges/choice architecture, incentives, communications, and habit formation.[1-3] In addition to these tools, there are key elements of human behavior to consider, such as 'the fresh start effect', the 'sunk cost fallacy', the 'fluency shortcut', and 'choice overload'.[4,5] These concepts are explored in depth throughout the guidebook, providing recommendations for use in the context of ocean and fisheries management. Social marketing refers to the adaptation of commercial marketing techniques and their implementation to influence behavior in a target group of people, to improve personal and societal welfare, and thus a brand can be created with relevant slogans, logos, or other brand materials to support a campaign program.[1-3,6] Piloting a program in a sample community and then testing for its success is critical; this allows for programs to shift with community needs as well as shed insight into successes and improvements needed.[1-3] Finally, after broad implementation, programs must be evaluated for success and return on investment, all while considering ways to extend program goals into the future to continue to support communities.[1-3]

There are diverse examples of behavioral programming throughout the world in conjunction with fisheries management to encourage target behaviors, leading to increased compliance and community buy-in. Successful campaigns range in topic and approach. In the Gulf of California, program managers promoted respecting marine park regulations by including the community in the decision-making process, encouraging pride for marine resources through festivals and murals.[7] The program was able to increase the economic value of their fishery, raising the selling price per clam from $1 to $5-7, allowing fishers to take pride in their resources while earning a higher income.[7] Across the world in Central Java Indonesia, a campaign promoted fishing outside of an established Marine Protected Area, focusing on explaining the benefits of protected no-take zones, utilizing a catchy slogan with clear imagery to integrate numerous BCD techniques into a campaign.[7] Another program focused on protecting a salmonid species in Mongolia by encouraging the community to capture pictures of the fish rather than taking the fish home for display.[7] Regardless of target behaviors and actions, community involvement is the key to successful sustainable ocean and fisheries management.

The Guidebook

There is extensive literature on the concepts of BCD and CBSM, however, program managers often do not have the time to sort through these materials on their own; thus, this project created a guidebook centered around implementing these behavioral approaches in the context of ocean and fisheries management, created with guidance from personale at the Waitt Institute, the Blue Azores Program, and the University of California San Diego. It will act as a concise resource, supporting managers in their initiatives and outreach with communities by providing an easy-to-understand framework and knowledge base focused on BCD. The guide includes aspects such as successes and lessons learned in BCD throughout the industry, ethics and social justice, and strategies for implementation and testing for success.

The guidebook also presents a case study of São Miguel Island, a community with a rich culture of sustainability throughout history, as well as in current fisheries and ecosystem conservation programs. The island is located in the Azores archipelago, an autonomous region located about 1000 miles off the coast of Portugal. A supplemental ArcGIS StoryMap web page was created to highlight its rich marine-based culture, telling a visual story of communities. The guide will act as a resource that can support marine managers in their initiatives, improving inclusion, equity, and increasing the chances of effecting long-term change.

With this guide, managers can utilize the knowledge to improve current programs and structure new programs to have a higher chance of success. Behavioral approaches have been proven to be successful in the conservation management and sustainability sectors, and can guide managers towards creating successful ocean and fisheries management programs to support and uplift fishers.

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