Behavior Change Action Plan

Marine Research Foundation

Sabah, Malaysia

Case Overview

The Marine Research Foundation (MRF) has been working to introduce Turtle Excluder Devices (TEDs) across Malaysia since 2007 to limit bycatch caused by shrimp trawling that dominates Malaysia's fishing industry. After a decade of hard work, MRF successfully helped TEDs become a federal legal requirement across four States in Malaysia. However, challenges remain in implementing TEDs in the State of Sabah as the management and development of fisheries in Sabah are viewed strictly as a state matter. Due to continuous political upheaval and frequent government turnover and structural changes, they continue to face challenges in garnering consistent support from the Sabah state government to adopt TEDs, specifically the Department of Fisheries Sabah (DOFS). Without legal requirements in place, the fishing community has had very little motivation to adopt TEDs voluntarily. With this behavior change strategy, we are hoping to target the following behaviors: **1) build political support and will for TED adoption within the Department of Fisheries, Sabah government, and the fishing community in Sabah; and 2) facilitate the adoption of TEDs within the Sabah fishing community.**

Target Audience

MRF's overall goal is to target the behavior of **at least 500 Department of Fisheries Sabah officers and at least 1,000 fishers in building support for legal requirements of TEDs** in Sabah. Due to the absence of legal requirements or enforcement, the fishing community has had no motivation or incentive to voluntarily adopt TEDs. While not strongly opposed, they still have responded neutrally to the idea. Additionally, high government turnover in the State of Sabah government poses a significant challenge as it erases or slows down any progress made when there are new personnel/structural changes within DOFS.

MRF has a long history of positive working relationships with the fishing community as well as the Department of Fisheries. Therefore, they are confident that with political support from the State of Sabah government, they will be able to work with the fishing community to successfully implement TEDs if legislation is finally established.

Key Stakeholders

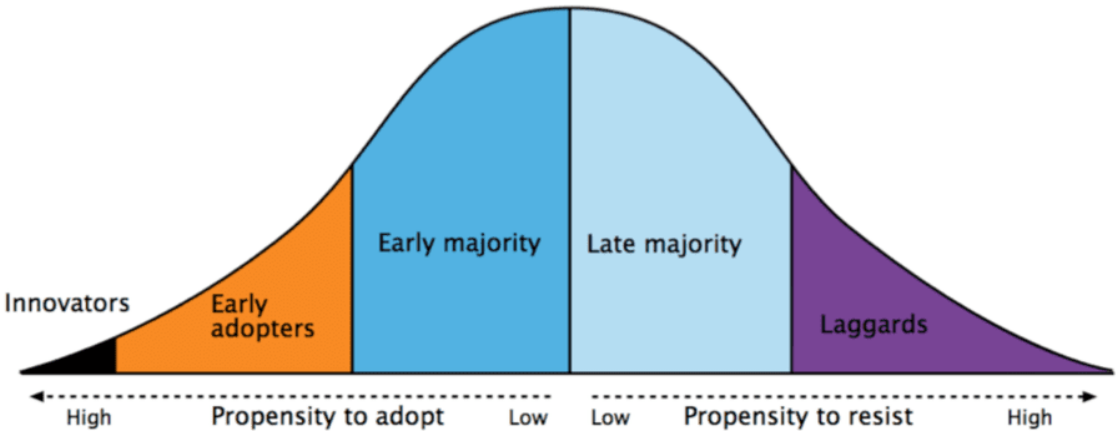
Department of Fisheries Sabah (Officers)
Ministry of Agriculture
Department of Tourism
Fishing community (specifically shrimp trawlers)
Department of Fisheries Malaysia (Federal)

As previous methods to incentivize volunteer adoption by local fishermen have been unsuccessful

without legal requirements, and progress with the Department of Fisheries Sabah faces challenges from political turnover, bringing in additional stakeholders, like other government agencies, could motivate the DOFS to enact legislation. Specifically, as the State of Sabah is a leader in tourism for Malaysia, working with the Department of Tourism to highlight the economic value of protecting sea turtles and other marine life for tourism may influence the DOFS attitudes towards TEDs. This would help bring more attention to the adoption of TEDs and model collaboration and alignment among government agencies, helping to build more political will.

Theoretical Framework

Effective conservation strategies often use a paired approach with top-down regulatory action and enforcement and bottom-up voluntary changes in everyday behavior. Significant change agents and influential voices could come from outside the Ministry of Fisheries from other departments and Ministries who may have interests that align with the adoption of TEDs. Building relationships with key political stakeholders and developing innovative partnerships, for example with the Department of Tourism, may help solidify a top-down approach. The bottom-up community-based approach can be informed by The Diffusion of Innovations theory. This theory describes how innovations, or new ideas, tend to get adopted within communities and the attributes of the innovation that make it easier or more difficult to be adopted. Since voluntary adoption of TEDs has not been successful in this community, it is critical to examine the innovation itself to determine if changes can be made to encourage adoption and support.



The graphic above demonstrates a timeframe in which different segments of a population typically adopt an innovation. The State of Sabah would be among the ‘laggards’ in this case as four other States across Malaysia have already implemented TED devices. Within Sabah, there are likely community members that fall within each of these categories. Identifying and learning from individuals or fishing operations on the left side of the curve, including innovators, early adopters, and early majority may help to convince those in the late majority or laggards to adopt TEDs.

Below are elements of an innovation that affect its adoption potential:

- **Relative advantage:** the likelihood that the benefits of the new practice outweigh the costs and exceed the value of current practices. Communicating evidence from other Malaysian states that have adopted TEDs and ongoing research about their effectiveness and impact on the overall

target catch, reduction of bycatch, and efficiency of fishing operations will be important to policy makers to illustrate that requiring use of TEDs is advantageous.

- **Compatibility:** the new practice does not conflict with social norms, past experiences, or needs of the community therefore adoption of new policies could be adopted fairly easily . While the use of TEDs might be a new practice, fishers have previously had to use time and other resources to separate target catch from bycatch, and have expressed neutral feelings about TEDs, not negative associations. Framing TEDs as an upgrade to efficiency may show fishermen and politicians alike that this practice is compatible with their pre-existing practices and expectations.
- **Complexity:** the new practice is not too difficult to understand or implement. If the process of implementing TEDs is complex, technical assistance may need to be provided to show fishermen how to install, use, and maintain TEDs. Stipends may be needed to compensate fishers for their time spent training and implementing this new technology. Working with a graphic designer to develop simple, clear illustrations of how to implement and use TEDs and the impact they have on the fishing operation may help fishers and politicians understand how TEDs work and why they are beneficial.
- **Trialability:** there is an opportunity to try the new practice at no or low cost without a long-term commitment. Other States in Sabah have implemented TEDs with success. The Federal Department of Fisheries could provide learning exchanges and opportunities for fishers in Sabah to directly engage with fishers who have used this new technology. An introductory program or phased approach may be needed so that fishermen can test out TEDs and see how it impacts their operation first-hand. Collecting data on the effectiveness of TEDs to decrease bycatch and increase efficiency may be needed to better understand the impact to sea turtle populations and the profitability of the fishers. Communicating the implementation of TEDs as a starting point that will be adjusted if the data show a better path forward may help laggards adopt and support this practice if they believe it will be monitored closely.
- **Observability:** there is an opportunity to observe others participating in the new practice and the results of participating. Public demonstrations of how to install and use TEDs may help demystify the practice and make it easier for fishers to envision what their operation would look like when implementing TEDs. Identifying and collaborating with key fishermen and politicians in the community who are well-respected, well-known, and either use TEDs or are supportive of the practice may be beneficial to help spread the message.

While these strategies are mainly focused on encouraging fishers to implement TEDs, outlining an implementation and communication plan that shows how TEDs can not only be beneficial for sea turtle conservation, but also the local community will be important for political support.

Stern, M. J. (2018). *Social science theory for environmental sustainability: A practical guide*. Oxford University Press.

Key Message

The economy and culture of Malaysia depends on the health of our ocean and the marine life within it. Sabah, in particular, is a significant driver of marine-based tourism for the country. Mandating the use of TEDs will not only help protect sea turtles, which could be a source of future tourism dollars, but also help fishermen in our community thrive in an ever-changing and competitive world. TEDs have the potential to increase efficiency of fisher operations by allowing bycatch to pass through the nets while maintaining the target catch. The MRF is dedicated to working with fishers to implement TEDs and study their impact on both sea turtles and the fishing community. Our research will inform ongoing adjustments made to the implementation of TEDs to ensure positive outcomes for both people and wildlife.

Implementation

These governance challenges are subject to very nuanced political shifts and ongoing working relationships built over decades. Our recommendations are based on somewhat limited surface level knowledge and background information of the political system. However, these approaches might be a useful starting point and provide outside perspectives. We propose the following:

1) MRF connects with the Ministry of Tourism to discuss ongoing challenges with TED adoption, future opportunities, and mutually beneficial incentives of both an internal (within Sabah government) and public-facing campaign to drive support and awareness. It will also be beneficial to discuss the implementation of TEDs with local stakeholders to understand current support, motivations and barriers to adopt the new practice, and impacts observed for those who may be already using TEDs.

2) Work closely with the Ministry of Tourism to develop and hone a key message (example above) to promote internally amongst Departments and Agencies within the Sabah government to help build support for TEDs. Key points should include the impact of sea turtles and the ocean environment on tourism revenue, Malaysian community pride (which was identified by workshop participants as a significant driver of behavior), alignment with tourist values and attraction to environmental protections, the potential positive impact of TEDs on fisher efficiency, and Malaysia's commitment to SDGs, specifically SDG 14.

3) Identify community members and fishing operations that fall in each of the categories outlined by the Diffusion of Innovation curve. Work with them to understand benefits and challenges related to TED adoption. Consider the elements of innovations that impact adoption and make changes to the innovation, the adoption process, or the communication strategy to better promote these key elements.

4) After crafting a clear and concise message that has the potential to resonate with the local community as well as visiting tourists, MRF and the Ministry of Tourism can develop a public facing campaign. These groups should work with local partners such as non-profits, tourism operators, additional government offices, and media to develop a campaign centered on community pride in protecting the environment. This can highlight efforts Malaysia (and Sabah specifically) has taken to protect key wildlife species. This

could be tied to a significant political event to help build pressure for new actions. Additionally, this campaign can point to other States in Malaysia that have already adopted TEDs.

4) The campaign can be promoted in areas where tourists and fishers might congregate, such as airport terminals or other transportation hubs, community centers, restaurants, national parks, markets or grocery stores, as well as digitally.

Evaluation

To evaluate the success of this campaign, political will to enact legislation, and the implementation of TEDs, it is important to measure both human and ecological outcomes. First, continually monitor the percent of politicians and fishers in support of TED legislation and fishers that currently use TEDs. Identify specific stakeholders that are not in support to further understand their barriers to adoption. Have discussions with key stakeholders often about the progress of the campaign, the impacts of the use of TEDs, and challenges faced to adopt the practice. This could include structured discussions like interviews or focus groups or more informal methods. Monitor sea turtle populations, collect data on bycatch as well as fisher profitability for those using TEDs, and communicate these findings to relevant stakeholders. It is important to adapt the policy and the implementation of TEDs as needed, informed by the data and discussions with key stakeholders.

Informal or formal survey methods could be used to understand the awareness of and attitudes towards sea turtle conservation and the use of TEDs in both the local community and visiting tourists. The findings from these surveys can help craft messaging strategies that will resonate with the target audience.

Conclusion

Implementing TEDs in the face of limited political will and ongoing governance issues presents a complex and nuanced challenge. However, by employing targeted science-based messaging efforts and behavior change strategies, we can effectively overcome these obstacles.

To tackle this challenge, we recommend building relationships with new political stakeholders and forming innovative partnerships. Additionally, investing time in developing a compelling key message that effectively promotes TEDs and resonates with different stakeholders is crucial. Exploring the potential of implementing a public-facing campaign can play a significant role in raising awareness and generating support. Furthermore, maintaining engagement with fishers and understanding the diverse levels of awareness and attitudes towards TEDs within the local community will allow for the tailoring of messaging strategies.

For additional helpful resources, please visit our webpage at https://www.seaturtlestatus.org/team-beach.

Thank you for submitting this case study to Team BEACH for further exploration. We hope this plan provides you with ideas to begin tackling this conservation challenge! If you would like to collaborate further with Team BEACH, please reach out to one of our members:

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