

**Incorporating ethical and multi-cultural sensitivities to inform sustainable value  
chain management of fisheries in the Andaman and Nicobar Islands, India**

**Final Report**  
prepared for  
**The Robin Rigby Trust**



Prepared by  
Sahir Advani, PhD Candidate  
Institute for the Oceans and Fisheries (IOF)  
University of British Columbia  
October 2018

## Project Summary

The purpose of this project was to incorporate ecological, economic, and ethical considerations into fisheries and value chain management in the Andaman and Nicobar Islands (ANI), India. This archipelago is home to diverse communities who rely on seafood and fisheries for sustenance and income. With its approach to understanding how island communities were involved with value chains for seafood, this research project aimed to provide recommendations to policy makers and local fisheries management agencies. Thus, the main objectives of this project were to 1) understand the complicated and non-linear effects of global seafood markets on the social and cultural aspects of fisheries, and 2) through a more collaborative and participatory process, describe commonalities and conflicts in value expressions of multiple cultural groups.

Through semi-structured interviews and lengthy participant observation, this project has been able to understand the value chains for local and exported seafood commodities as well as the inequities that exist in the transmission of prices and access to information about markets. The locally and culturally contextualised approach to developing research tools has produced a nuanced understanding of the needs of local communities and their values. Once disseminated in the form of research publications, reports, and workshops, this information will be useful for policy makers to steer fisheries in the Andaman and Nicobar Islands towards an ecologically sound, ethically just, and economically inclusive direction.

## Project Implementation

While this project was initially proposed for a period of eight months (Aug 2016 – Mar 2017), the receipt of an additional grant from the International Development Research Centre (IDRC) gave me the opportunity to expand this project further. In consultation with my supervisory committee, and after receiving approval from the Robin Rigby Trust and the IDRC, field research was extended to span over two field seasons. These seasons were October 2016 – April 2017 and October 2017 – July 2018. Several unforeseen delays extended the duration of the research. Changes in the regulations and unavailability of officials resulted in delays with applications for research permits to the Nicobar Islands during both field seasons. Contracting dengue fever at the very start of the second field season hampered research and prolonged field research until July 2018.

The first objective of understanding communities' interactions with global seafood markets was achieved during the first field season. Data from the first field season informed the development of locally and culturally contextualized value cards that reflected the multitude of values of the various communities. These value cards were used as a research tool during the second field season to understand the value priorities across the islands (see below and Table 3 for description). Research was conducted across the length of the archipelago, with the first season being utilized to identify appropriate communities and study sites, and the second season involving a deeper exploration into the values of the communities at these sites. Figure 1 and Table 1 provide locations and details of the communities and study sites. Table 2 provides details of the number of interviewees involved in each stage of seafood value chains.

**Table 1:** Details of communities, study sites and number of interviews conducted.

Community	Origins	Study Site	No. of Interviews	
			Oct 16 – Apr 17	Oct 17 – Jul 18
Nicobari	Indigenous tribes of Nicobar Islands	Chowra	13	17
		Kamorta	8	11
Karen	Mountain tribe from Burma	Karmatang 10	7	12
		Webi	20	14
Bengali	Agrarians from Bengal and Bangladesh	Taal Bagaan	3	10
		Wandoor	9	8
Telugu	Fishers from east coast of India	Junglighat	4	19
		Rajiv Nagar	13	10
<b>Total</b>			<b>77</b>	<b>101</b>

**Table 2:** Number of interviewees at each stage of seafood value chains.

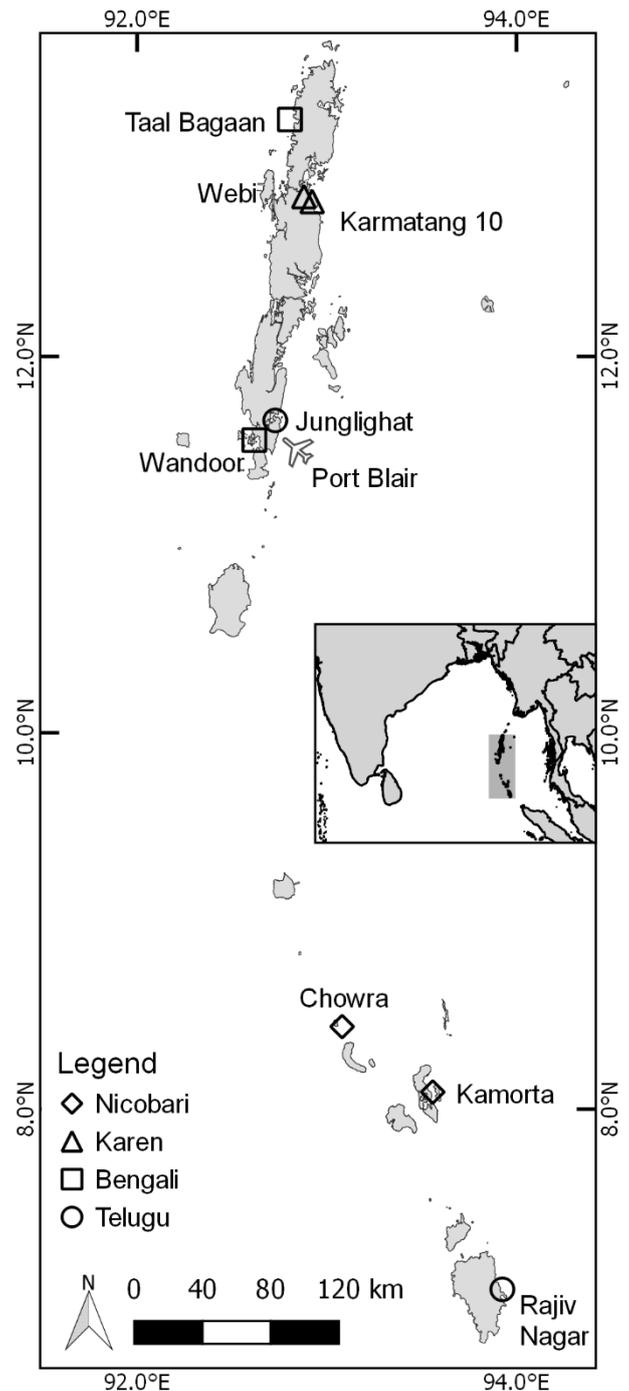
Study Site	No. of interviewed			
	Fishers	Fish vendors	Middle men	Exporters
Chowra	22			
Kamorta	14		2	
Karmatang 10	15			
Webi	24	1	2	
Taal Bagaan	10		1	
Wandoor	10		1	
Junglighat	6	8	6	3
Rajiv Nagar	10	4	5	
<b>Total*</b>	<b>111</b>	<b>13</b>	<b>17</b>	<b>3</b>

\* Some individuals were interviewed twice across both field seasons.

Research conducted in the first field season focused on understanding communities' integration with niche seafood commodity chains. The leopard coral grouper, *Plectropomus leopardus*, is known as *dollar* in some parts of the archipelago due to its high economic value. A forthcoming publication explores the values that communities attributed to this fish before it became commoditized, and the resultant consequences of involvement with commodity chains. This work was also presented at the IX<sup>th</sup> MARE People and the Sea conference in Amsterdam on 6<sup>th</sup> July 2017.

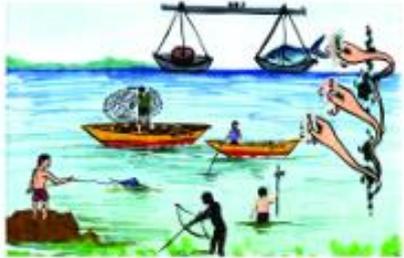
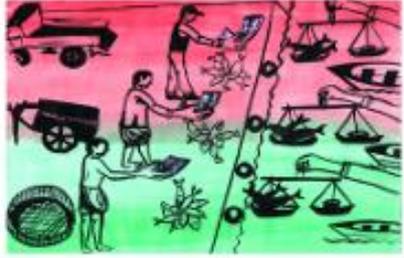
Data from the first field season also highlighted the inequities in transmission of prices and markets across the entire archipelago. Fishers from locations close to export market links were unaware of the end markets for their seafood products as well as the final economic value. Fishers at locations further away from Port Blair, the market capital, received lower economic value and even the middlemen from these regions faced difficulties in finding appropriate markets for seafood. Marked declines in reef fish populations within the last decade and encroachment by large mechanized vessels in nearshore fishing grounds were a common refrain across the eight study communities.

Developing a tool to understand locally- and culturally-contextualized value priorities of fishing communities was an important aspect of the second field season. Using open-ended questions regarding several aspects of fishing communities' lives, I developed a list of descriptive phrases that articulated local values. I then worked with artists from three of the study communities to produce artwork that represented these phrases and values (an artist had to withdraw from the project due to other commitments). The phrases and artwork were then rated by a multicultural and local focus group which resulted in a set of images (value cards) and accompanying descriptions that would be read out to study participants. The set of value card images and descriptions are provided on the next page in Table 3.



**Figure 1:** Main map depicting the communities at eight study sites. Inset depicts location of the Andaman and Nicobar Islands.

**Table 3:** Value card images along with their descriptions utilized in the value-ranking exercise.

Values and value phrases	Value card images	Descriptions
<p>Ecosystem conservation</p> <p><b>Different types of fish and lots of them</b></p>		<p>This card represents healthy or good seas in the Andaman and Nicobar Islands. These are seas where there are many different types of fish from big sharks to small topi and there are many of these kinds of fish.</p>
<p>Freedom</p> <p><b>Freedom to catch fish and sell to whoever</b></p>		<p>This card represents the freedom to be able to catch fish anywhere, anytime, using any gear. The hands coming from the islands represent the freedom to sell fish anywhere to whoever you like, be it a middleman, your community, or the general public.</p>
<p>Equality</p> <p><b>Knowing the right and fair price of fish</b></p>		<p>This card represents the ability to know the right and fair price of fish. So in this image the fair price is represented by three different types of buyers all offering the same price for fish.</p>
<p>Food Security</p> <p><b>Fish for the family</b></p>		<p>This card represents catching fish to only feed your family.</p>
<p>Wealth</p> <p><b>Catching and selling fish to make money</b></p>		<p>This card represents making money. So in this card you can see some people making money from catching and selling fish.</p>
<p>Hedonism</p> <p><b>Fishing is fun and makes me happy</b></p>		<p>This card represents getting enjoyment or having fun from fishing. The two people in this picture are very happy while fishing and have big smiles on their faces.</p>

<p>Benevolence</p> <p><b>Future generations enjoying as much fish as we have now</b></p>		<p>This card represents thinking about others and not just yourself. So for example this picture shows that future generations would have as much fish as we have now.</p>
<p>Moderation</p> <p><b>Catching only as much fish as you need</b></p>		<p>This card represents catching or buying only as much fish as you need so that no fish gets wasted.</p>
<p>Group Solidarity</p> <p><b>Living together in unity</b></p>		<p>This card represents living together in peace and happiness. In unity with each other. In this picture the community is working together to build a house and food is being prepared for the workers.</p>
<p>Authority</p> <p><b>Strong leaders sort out problems in the community and in fishing</b></p>		<p>This card represents strong leaders who sort out problems in the community and in fishing. In this picture, the community is sitting around a leader and discussing their issues.</p>
<p>Attachment to Place</p> <p><b>These islands are home for my family</b></p>		<p>This card represents the love people have for these islands. This picture shows people that have made these islands their home and enjoy living here.</p>
<p>Tradition</p> <p><b>Younger generation catching and selling fish like their parents</b></p>		<p>This card represents tradition and shows younger generations learning about fish and fishing. So in this picture, a boy is being taught how to fish by his father and a girl is looking at fish.</p>

Study participants in the second field season were asked to participate in a value-ranking exercise. Participants were shown the value cards and each card was verbally described to them. They could ask questions regarding the meaning of the cards or for a reminder of what they represented throughout the exercise. The cards were then reshuffled and participants were asked to organize them based on what they considered the most important in order to achieve a good life, with the most important at the top and the

least important at the bottom. I also asked them to describe their decisions for prioritizing some value cards and not others. With their emphasis on individual values, interviews were often kept quite open-ended so that community members could take their time to reflect on what they considered important for their lives. This data is currently being analyzed, and will help describe the multitude of value priorities across cultural groups and positions within the commodity chain. Through resultant publications and other advocacy efforts, the findings of this study will be shared with policy makers to better inform fisheries management plans in the archipelago.



*Conducting value prioritization exercises and interviews across the Andaman and Nicobar Islands*

### **Cooperation and Collaboration**

I am indebted to the communities that invited me to spend some time understanding their ways of life. I am also very grateful to the community leaders, hosts, field assistants, and translators, who provided me with the means to gain insights into the four cultural groups included in this project. Cooperation between me and field assistants was an essential part of conducting interviews, and so I placed a lot of emphasis on helping them understand a respectful way to engage with study participants, even when study participants prioritized values that went against the field assistant's or their communities' generally held beliefs. After interviews, I exchanged notes with field assistants concerning their perspectives of how the interview went and what could be done for future interviews or to understand certain aspects of fishing practices. Through their role of documenting the values of their own communities, field assistants gained insights into the problems and potential solutions faced by their communities in the realm of fisheries. Their names are listed below in the acknowledgements.

This project was undertaken in close collaboration with Dakshin Foundation, a not-for profit marine conservation and research organization based in Bangalore, India. Dakshin also manages the Andaman and Nicobar Environment Team (ANET), a research station and environmental Trust that has a long history of facilitating ecological research in the ANI. Through my collaboration with Dakshin, I was able to access the facilities at ANET and utilize Dakshin's network with local communities and agencies in order to conduct my research. The findings generated by this study will be useful to Dakshin Foundation in informing future fisheries research projects or marine conservation interventions. This information will also be pivotal for workshops with local communities and management agencies to discuss the future of fisheries in the archipelago.

The project intended to conduct a single large workshop or a series of smaller meetings with stakeholder groups to discuss the unaccounted values of fisheries and fishing communities in these islands and to reflect on their future. I was able to hold small meetings with fishing communities on Chowra, Rajiv Nagar, and Wandoor. When planning for a larger scale meeting at the major port of Junglighat, it became apparent that other marine researchers also intended to hold such meetings with this community. Rather than fatigue communities with multiple workshops discussing similar aspects of marine conservation and sustainability, I spearheaded meetings with the other researchers to organize a single large workshop in April 2018. Ultimately, this plan did not come to fruition due to scheduling issues and unavailability of

some researchers. In July 2018, I approached the Andaman and Nicobar Directorate of Fisheries to share some of the initial findings and gauge their interest in being included in a large community-based workshop. The Director was pleased to see the preliminary results, but stated that only published findings would provide greater bearing on meetings between fishing communities, the seafood industry, and the Directorate of Fisheries to discuss fisheries sustainability. In light of this, I believe that future advocacy efforts by Dakshin Foundation and myself can utilize the findings of this study to devise appropriate policies in a collaborative process with local communities and the ANI Directorate of Fisheries.

### **Potential for Project Replication**

The method used to develop the value cards and the insights gained from value prioritization exercises are valuable for sustainable resource management. The method to develop the cards incorporates local and cultural contexts that would ordinarily be looked over. This method could be further refined through the involvement of artists from local communities at the design stage of the study itself or by sourcing symbolism and artwork from the community itself. Conducting such a study in a historically rich and culturally diverse setting as the Andaman and Nicobar Islands comes with its own set of confounding factors. Were I to replicate this study elsewhere it would be in an area with a lesser degree of historical and cultural richness, but one with an active conflict over resource management.

An example of such a region is India's other set of oceanic islands, the Lakshadweep atoll system. There are two main cultural groups in these islands – the Mahls on Minicoy island and Malayalees on the remaining 10 inhabited islands. Fisheries are a major source of income on these islands. Sustainable pole and line tuna fishing was a common practice on Minicoy and was later introduced to the other islands in the atoll system. More recently, driven by demands from niche seafood markets, communities from other islands are targeting spawning aggregations of groupers. Dakshin Foundation has been studying the drivers of the Lakshadweep tuna fishery for several years now alongside other projects in these islands. Replicating this current project with a more refined system of value card development would be beneficial in understanding the value priorities of Lakshadweep fishing communities.

### **Acknowledgements**

I would like to thank the Trustees at the Robin Rigby Trust for their support and patience over the course of this project. I would also like to thank the Trustees and staff at Dakshin Foundation for their assistance and advice during the course of this project. Most importantly I'd like to thank the individuals who were essential to conducting research for this project – Sneha Prakasamma, Saw Isaac Mountin, David Froster, Chitranjan Mandal, Saw Mishak (Charlee), Ravi, Vallabha Rao (Halpa), Chiranjeevi, Saw John Aung Thong, and staff at ANET. My supervisors, Drs Mimi Lam and Tony Pitcher, and supervisory committee were also very helpful in designing and executing this project.