

Fishing for cash – village attitudes towards fish exports in Marovo Lagoon, Solomon Islands

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Introduction

Globally, fishing activities contribute to the livelihoods of over half a billion people (Allison 2011). Concern about overfishing and fisheries collapse has intensified in recent years; nearly one-third of all fisheries are overfished, and over half are currently fished at their limits for sustainable yield (FAO 2016). While most marine fisheries have been in decline since the mid-1990s, the trade of fish and fishery products has increased in the past few decades, partly due to rapid expansion and increased fishing effort, buoyed by the increasingly global fisheries market and growing demand as new, wealthy economies emerge (FAO 2016). A number of political, economic and technological factors have facilitated a shift from local consumption toward export to international markets, with just over one-third of all fish production globally now exported (FAO 2016). This rapid globalisation and emergence of new, powerful international players opens the potential for exploitation of smaller, developing nations, where small-scale subsistence fishing still dominates.

Small-scale fisheries (SSFs) are predominantly artisanal and subsistence fisheries, and support the livelihoods of ~200 million people across the globe (Cinner et al. 2012). In the Pacific, it is estimated that approximately 70–80% of total catch for inshore SSFs is for subsistence purposes, while only about 20% reaches the commercial market (Lambeth et al. 2002). For many SSFs globally, a number of fishery resources are dually important for both household food security and household income (Béné et al. 2009). This dual role of local resources is an important consideration when evaluating the sustainability of patterns of resource use. Managing SSFs for food security requires an understanding not only of local (village level) consumption, but also of the transport from villages to urban centres. In Solomon Islands, transport of fishery products from the Western Province to Honiara via large ships has been identified anecdotally as being of concern

in regards to rapid resource depletion; however, the trade is likely central to supporting livelihoods in the region (Fabinyi et al. 2016).

This research aimed at investigating community attitudes toward the export of fishery products from local villages to the country's capital, Honiara, via what is known as the 'esky trade', so named for the large insulated containers first imported from Australia where they are known colloquially as 'eskies'.

Large eskies (~100 x 50 x 50 cm, Ian Tibbetts, pers. obs.) are transported from Honiara to the Western Province on an irregular basis, filled with fish and shellfish purchased by traders for cash from local fishers, then transported back to Honiara for sale in the country's main fish markets. Typically, villagers are notified of the arrival of a ship full of empty eskies, and divert their work patterns to fill the esky(ies) by the following afternoon. The research was conducted in Marovo Lagoon, Western Province, in a village on Marovo Island, with a population of 700–1,000 people. The village is located within close proximity to a diversity of habitats, and fishers have access to a variety of marine resources. Through household surveys, we aimed

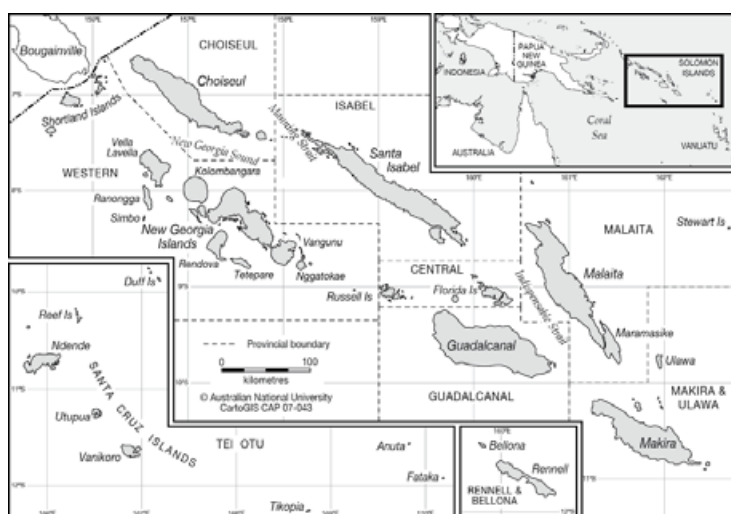


Figure 1. Solomon Islands. Source: CartoGIS Services, College of Asia and the Pacific, The Australian National University

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Figure 2. Location of study site within Marovo Lagoon. (image: Google Maps)

at understanding village attitudes toward the trade in fish and invertebrates, focusing on the effect this may have for managing village-level food security.

Methods

In October 2017, household surveys were conducted in the study village with adult men and women (see Figs 1 and 2). In total, 17 people were interviewed, 7 of whom were women. The purpose of these interviews was to investigate attitudes toward the export of fish and invertebrates from Marovo Lagoon to Honiara through the esky trade. Interviews were voluntary and conducted in Solomon Islands Pijin, with a local research assistant present. Local research assistants were able to further translate interview questions to the local language (Marovo) where necessary. For the purposes of this research, a household was defined as a set dwelling, where one or more families usually ate and slept.

Results

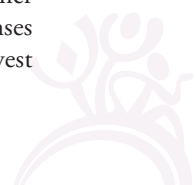
Attitudes toward trade

Village attitudes toward the esky trade were mostly positive, with only 3 of the 17 people interviewed expressing negative attitudes towards the trade. One interviewee stated that the trade was ‘...a little bit good and a little bit bad. It brings in money for the village, but it spoils fish from

overharvest’. Another indicated that the trade was ‘...not very good, because too many fish are sold’. The remaining 13 people felt positively towards the esky trade, with village income the main driver. Participants stated that, ‘It is good, because when the esky comes people don’t overharvest [the resources] and they come very infrequently, and people stop [this harvest] when the esky leaves again so it’s good’ Another person stated that ‘... [it is] important for income. It is not bad for the fish [resources]’. Two other participants stated that income from the esky trade is really only important at times when no other income comes into the village, with one participant noting that, ‘If there is no other income coming into the village [at that time] then it is important, but otherwise it is not important for income, and just spoils the fish’. One participant noted that the trade is ‘... not big money. [It is] good for soap [small purchases, but not school fees]’, with income from the esky trade (comparatively) less than that from sale at local village markets.

Management recommendations

Interviewees were asked whether they felt any management or conservation measures should be implemented to regulate the harvest of marine resources for sale for the esky trade, or if current regulations were sufficient. All participants indicated that they would like to see further restrictions implemented, and the most common responses are summarized as follows: 1) implementation of harvest



restrictions, for a total allowable catch and minimum fish size; 2) closure of some areas during the harvest of seafood for the trade; 3) gear restrictions; 4) people should not take more than they need (bag limits). In addition, participants requested funding for conservation work, including rangers' salaries.

Several respondents mentioned the current *tabu* (protected) area, and indicated that other areas should be closed to fishing for the esky trade in addition to the *tabu* site (citing fish conservation as a reason). The *tabu* area is a locally managed marine area that is currently permanently closed (since its official opening in January 2018). Gear restrictions were mentioned twice. One participant mentioned that gear restrictions should be implemented when the eskies come, although they did not specify what those restrictions should be. Another participant indicated that gill nets should be banned due to their indiscriminate catch. Night spear diving, in which men use spear guns, underwater flashlights and snorkelling gear to take sleeping reef fish, was also mentioned, with one participant indicating that this practice should also be banned, and fishers should use hand lines only.

Discussion

Sustainable small-scale fisheries (SSFs) are critical to achieving food security goals, but are faced with a suite of threats ranging from unsustainable land management practices, to overfishing and climate change. Resilient fisheries that can contribute to improved food security require biodiverse ecosystems that buffer against a range of threats, but these cannot occur without mitigation of the impacts of top-down fishing (Duffy et al. 2016). For Solomon Islands, proximity to markets has a marked impact on fishery condition, with a negative correlation between increased access to markets and fishery health (Brewer et al. 2009). However, income gained from the sale of fish products to markets is also a critical component of household food security, allowing families to purchase household staples such as rice (Fabinyi et al. 2016).

Responses from this survey highlight that an awareness of sustainable harvest levels is lacking, and that communities would benefit from additional awareness workshops. Several participants mentioned that people should 'only take what they need', which may indicate some negative sentiment towards those who fish excessively during the time of the eskies. Survey responses did indicate that there is significant concern over the ongoing harvest of juvenile fish; some catch monitoring or end user (i.e. esky trader) restrictions may be useful for enforcing minimum fish sizes, though we note that market-imposed fines do already exist at major markets in Honiara (Rhodes and Tua 2016), with undersized fish often sold at smaller markets to avoid fines. One participant noted that in order to improve fisheries management, we must 'pay for conservation work', a sentiment echoed by many other people in informal conversations the lead researcher has had within the community. It is difficult for rangers and others to undertake time-consuming and

often expensive management efforts without pay. This is a considerable problem that hampers resource management efforts in Marovo Lagoon and beyond, especially given the allure of access royalties paid by the environmentally damaging logging industry (Dyer 2017), and must be addressed in order for management efforts to continue and have a realistic expectation of success.

A number of non-governmental organisations have attempted to manage SSFs in the Pacific through the implementation of marine protected areas and no-take zones; however, the failure of these management attempts, both in the Pacific and elsewhere, is well documented (Barclay et al. 2016; Coffey and O'Toole 2012; Voyer et al. 2012; Walter and Hamilton 2014). It is imperative that any management action is supported by the people, or groups, that it affects. In order to achieve this support, it is crucial that management decisions are not only based on biological factors, but should also take into account cultural, economic, and political factors, to ensure policy decisions are not only scientifically and economically sound, but are also broadly supported by the users they affect (Barclay et al. 2016).

Results from this survey highlight the need for collaborative, community-based management in conjunction with relevant scientific and government authorities to address overfishing within the esky trade. It would be beneficial to quantify volumes of harvested fish and invertebrates sold to the esky trade in Marovo Lagoon, and determine catch rates of known slower-growing species and juvenile fish, to assess potential impacts of the trade on these more vulnerable fish populations (though see Rhodes and Tua 2016). Expansion of this work to include more villages would facilitate greater understanding of community attitudes within the region. Appropriate management measures should be developed in collaboration with communities to reduce the harvest of juvenile fish, and minimise impacts on local fish populations. Biological data on the life cycles of targeted species must be integrated within an approach that also considers the social and economic drivers of the esky trade if resources are to be secured into the future.

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Betsy Kivo, Research Assistant, touring protected mangrove areas. (image: Sheridan Rabbitt)

