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# Intended and unintended outcomes in fisheries learning exchanges: Lessons from Mexico and Madagascar



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## ABSTRACT

Fisheries learning exchanges (FLEs) bring together fisher communities to exchange knowledge and experiences, with the goal of building social capital and disseminating management techniques. In 2015 two groups of octopus fishers from Bahia de los Angeles, Mexico and Sarodrano, Madagascar travelled to Andavadoaka, southwest Madagascar to learn about the temporary fishing closures for octopus used in the region. Octopus fisheries in Madagascar and Mexico differ in several respects, particularly harvesting techniques. The FLE was qualitatively evaluated through participant observation and semi-structured key informant (KI) interviews. Thirty before-and-after interviews were carried out with 16 KIs including visitors, hosts and organisers. Informants suggested that holding the FLE at the same time as the closure openings allowed for learning benefits but carried an important opportunity cost for organisers and host participants, and that shortcomings of planning and translation capacity limited learning opportunities. Several KIs were concerned about the applicability of the Malagasy management model to the Mexican context concerned, and the FLE may have had unforeseen consequences since Malagasy fishers were excited to learn a new fishing method (trapping) from the visitors: if effective, trapping could negatively impact Malagasy octopus stocks. The exchange of knowledge in the FLE was primarily one-way, from host to visitor, and most organisers did not view themselves as participants. Recommendations to improve the effectiveness of future FLEs include: (i) improving facilitation and translation capacity to promote dialogue, (ii) focusing on key messages, (iii) selecting appropriate participants and (iv) recruiting a specialist to organise and lead exchanges.

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## 1. Introduction

There is increasing recognition that effective forms of knowledge exchange are required to enhance environmental sustainability [8]. Fisheries learning exchanges (FLEs), in which representatives of fisher communities are brought together to exchange knowledge and experiences, are recognised as a valuable tool for improving fisheries management, in particular for sharing management challenges and solutions, empowering fisher leaders, building social capital and communities of practice, and developing conservation solutions [11,12]. However, the effectiveness of the approach has thus far received minimal assessment and few guidelines for practitioners to maximise the utility of such exchanges exist [6,19]. To help address this, a research collaboration led by the University of Washington and SmartFish International

entitled FLExCELL (Fishermen Learning Exchanges for Conservation: an Evaluation of Lessons Learned) was launched in 2013.

The FLExCELL project comprises two phases. Phase 1 consisted of a workshop in May 2013 that brought together 22 participants from 11 countries to establish a community of practice for FLEs, achieve a shared understanding of what defines an FLE, and compile lessons learned [18]. Several outputs from the workshop discuss FLEs in detail, including their scope and history [12], key characteristics of successful FLEs [20], and suggested guidelines for conducting an FLE [18]. Phase 2 of the project consists of a number of in-depth case studies of FLEs across the world, intended to elucidate best practice for designing and conducting FLEs. This paper presents the findings of the first of these Phase 2 case studies. The objective of the paper is to critically evaluate the effectiveness of the FLE as a tool for learning and generate recommendations for the development of best practice, based primarily on the testimonies of organisers and participants themselves.

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## 2. Methods

### 2.1. Study FLE

The case study FLE was the result of collaboration between Blue Ventures (BV; UK), SmartFish International and Pronatura Noroeste (Mexico), and took place in Andavadoaka, southwest Madagascar in August–September 2015 (Fig. 1). Since 2004 the communities of Andavadoaka and surrounding villages, with the support of BV, have been implementing temporary octopus closures during which defined areas of reef flat are closed to octopus fishing for 2–7 months [4,13]. The closures form the foundation of Velondriake, Madagascar's first Locally Managed Marine Area (LMMA; [10]), which was officially incorporated into the country's expanded protected area system in 2015 and includes a number of permanent reef and mangrove reserves in addition to closure

areas. Velondriake spans 25 villages and is run by a committee of elected village representatives (the Committee of the Velondriake Association) who spearhead fisheries management in their communities, including the selection of reserve and closure sites, the length of the closure period, and the application of rules [2,13].

The temporary octopus closure model generates net economic benefits when closures are well managed [13], and as a result has influenced national fisheries policy and spread throughout southwest Madagascar as well as elsewhere in the Indian Ocean (e.g. Mozambique, Mauritius, Tanzania). An important tool in the spread of the model has been FLEs, which have seen an estimated 494 representatives of fisher communities from around the region visit Andavadoaka to meet with the Velondriake Association, discuss management issues and attend the opening of a temporary octopus closure (i.e. the resumption of fishing). The case study FLE involved visitors from two small-scale octopus fishing



**Fig. 1.** Map of southwest Madagascar, showing location of Sarodrano and Andavadoaka, as well as the boundaries of the Velondriake Locally Managed Marine Area.

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