



# The scope of fisheries learning exchanges for conservation

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## ARTICLE INFO

### Article history:

Received 11 May 2016

Received in revised form

21 May 2016

Accepted 23 May 2016

Available online 6 June 2016

### Keywords:

Fisheries learning exchanges

Fisheries management

Marine conservation

Natural resources management

Knowledge exchange

## ABSTRACT

Over the past decade, fisheries learning exchanges (FLEs), in which representatives from different fisher communities come together to share marine conservation challenges and solutions, have been produced by a range of non-government organizations (NGOs) and federal agencies. This paper presents an overview of the history and scope of FLEs. A literature review, questionnaire, expert workshop, and key informant interviews were conducted. A content analysis was performed of the key informant interviews using a grounded theory approach. This paper offers a formal definition of a FLE, describes different configurations of FLEs, discusses the utility, common objectives, and common outcomes of FLEs, and outlines a research agenda for future work on FLEs. Organizers have found FLEs to have four main utilities: 1) FLEs leverage peer-to-peer sharing so that participants open each other's horizons for improving fisheries and fishing 2) FLEs catalyze and speed change, 3) FLEs are good for sharing thoughts that are difficult to receive and accept, 4) FLEs facilitate involvement and commitment from relevant parties needed for change. The most commonly documented purposes of FLEs were related to marine reserves, fisheries management strategies, bycatch reduction, and alternative livelihoods to fishing. The most common objectives among the FLEs surveyed were to encourage action or behavior, to openly exchange ideas, and to introduce new technology. As a result of FLEs the common outcomes were that participants were inspired to make changes, new programs were implemented, relationships were built and connections made, and participants enhanced their understanding of marine management strategies.

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## 1. Introduction

Overfishing, a leading socio-environmental problem in the marine realm, has reduced biodiversity, modified ecosystem functioning, and is jeopardizing the wellbeing of the billion people who depend on seafood as their primary source of protein [1–3]. With more than a third of fish stocks worldwide overexploited or depleted [4,5] improving fisheries management has become a global priority. While fisheries scientists and managers have developed robust methods for assessing fish populations, they in general have only recently begun to embrace that managing fisheries depends on understanding and managing people [6]. As fisheries scientists increasingly focus on the human dimensions of fishing, attributes of fisheries success, such as robust social capital, are emerging [7].

Over the past decade, fisheries learning exchanges (FLEs), in which representatives from different fishing communities are brought together to share fisheries management and conservation challenges and solutions, have been produced by a range of non-government organizations (NGOs) and federal agencies. Organizers and participants believe learning exchanges are an important part of Integrated Coastal Management [8], and “tremendously valuable in educating and advancing fisheries management efforts” [9]. Exchanges give fishers the opportunity to gather and share information about best practices and local marine environments among themselves and among scientists, regulators and other fishing industry stakeholders [10,11].

As a relatively recent development within the resource management field, little has been written about the conceptual grounding of learning exchanges within the context of resource management. However, knowledge can be extrapolated from related more well-studied management tools. Employing the theoretical frameworks used in resource management reveals ways in which learning exchanges can be used as a tool in the development and dissemination of resource management best practices. These elements that learning exchanges share with other successful management efforts (e.g. multi-stakeholder collaboration,

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communities of practice, community-based management, co-management) include having platforms for personal interactions, fostering experiential and social learning, and cultivating social capital. Learning exchanges provide participants with hands-on, personal experiences, which are essential to experiential learning [12] and in turn help participants better retain information while also increasing their enthusiasm about the topic [13]. Learning exchange participants are also involved in the process of social learning, which has also been cited as important in resource management [14–17].

Providing platforms for the exchange of knowledge and sharing of ideas is a critical part of a successful resource and fisheries management plan; it is especially important for involving local communities in the management process [18–22]. Learning exchanges not only provide a platform for personal interactions, but they also typically bring together communities from afar that otherwise may not have had the chance to meet. This connecting of groups that had previously not interacted (what Bodin and Crona [23] refer to as “bridging ties”) was proposed to be one of the most important factors in the creation of a successful co-management process [24]. In fisheries management, bridging ties are used to exchange critical information [25]. According to Grafton [21], the social ties that result from connecting communities, fishing, and regulators are “important in ensuring successful fisheries management outcomes.” Although the general body of knowledge about fisheries management is helpful for understanding FLEs, clearly more research is needed both in terms of novel work and linking existing bodies of scholarship to FLEs through interdisciplinary studies.

To date, the success of FLEs has been officially defined and measured mainly by exchange organizers. These evaluations, which might be subjective and ad hoc, have been deemed positive enough that organizers repeat and replicate exchanges, and some organizations have established them as exchange series [9]. Ranging from local to international in participation, fisher exchanges are expensive, representing considerable investment by organizers (travel, venue, facilitation, administrative costs, and corresponding fundraising) and by participants (time, travel, and opportunity costs). Millions of dollars have been invested in putting on FLEs by NGOs and federal agencies. Even given this large investment, little evaluation has been conducted on the effectiveness of FLEs. Most of these are informal, internally-conducted evaluations [9]. There exist guidelines for exchanges in general [26,27] but these guidelines focus on agriculture and sustainable forestry and do not likely capture the nuances of managing marine and coastal systems [28]. Furthermore, it is unclear if these guidelines arose from an empirically-grounded, peer-reviewed process. Moreover the scholarly literature with a specific focus on FLEs is limited to two papers [22,29]. Given the great need for and scarcity of marine conservation funding, the intent of this research was to understand how FLEs work and deduce prescriptive guidelines in order to support practitioners of FLEs in maximizing their effectiveness.

This paper will give an overview of the history and scope of FLEs. It will offer a formal definition of FLEs, describe different configurations of FLEs, discuss the utility, common objectives, and common outcomes of FLEs, and outline a research agenda for future work on FLEs. This paper also serves as an introduction to the other articles in this special issue which include: 1) a comparative case study that elucidates “Key characteristics of successful fisheries learning exchanges” [30], 2) guidelines for consideration when organizing a FLE [31], and illustrative examples of how FLEs have 3) yielded intended and unintended consequences in community-based fisheries in Madagascar [32], 4) addressed sea turtle conservation during a tri-lateral exchange between the United States, Mexico, and Cuba [33], and 5) created a transpacific sea turtle conservation network between Japan, Mexico, and the

United States [34].

## 2. Methods

In May 2013, the workshop *Fishermen Learning Exchanges for Conservation: An Examination of Lessons Learned (FLExCELL)* was held. It included twenty-one experts consisting of some of the world’s most experienced organizers of FLEs and key fishers, as well as specialists in learning, fisheries management, and marine conservation, from nations throughout the Americas as well as Palau, Guam, and Madagascar. Twenty-five experts were invited and twenty-one were able to attend. The participants were identified based on publications, reports, and word-of-mouth about their work with FLEs for conservation. For each FLE represented at the workshop, an organizer and a participant were invited to attend the meeting. The organizers of each FLE nominated the participant invitee, the only constraint being sufficient fluency in English. Each individual present was considered an expert in their field of practice as judged by the organizers and their peers based on their previous activities. The organizers, in keeping with the guidelines of the workshop sponsor and host, which was the National Socio-Environmental Synthesis Center (SESYNC), strove for diversity in workshop participants. The objectives of this workshop were to: build community, devise a shared understanding of FLEs, compile lessons learned, and create a research agenda. The information presented in this paper is drawn from data collection efforts connected with this workshop.

Specifically, prior to the workshop an extensive literature review was conducted of published papers and grey literature about learning exchanges for natural resource management as well as theoretical concepts related to learning exchanges, such as experiential and social learning. This was summarized into a document that was distributed to all the experts in advance of the workshop, creating a common platform of language and knowledge. The content of this review was then augmented, shaped, and edited by the experts throughout the workshop to more fully reflect their combined knowledge of FLEs and related concepts.

Also in advance of the workshop, the experts completed a questionnaire. The questionnaire was pre-tested and revised before distribution via email to 25 experts. Four email reminders were sent to complete the questionnaire with a 68% response rate from those who were invited to attend the workshop. The responses were summarized into a document that was distributed before the meeting, then during the meeting the summary was presented to the group for a collective editing process. This collective process allowed the inclusion of expert knowledge from all present, not just the ones who had completed the questionnaire in advance, for a total of 24 contributors. This questionnaire asked them to define fisheries learning exchanges (termed fisherman learning exchanges in the document) and then bound the definition by listing inclusion criteria (characteristics a FLE must have), exclusion criteria (if these characteristics are present then the interaction cannot be considered a FLE), descriptive example(s) of typical FLEs, descriptive example(s) of atypical FLEs (based on their definition of a FLE this would be a FLE, but not everyone would consider it so), close but not (could almost be considered a FLE, but it is just outside the definitional boundary of a FLE). The questionnaire went on to request a list of past exchanges attended and future exchanges they plan to attend, as well as positive and negative lessons learned from the exchanges in which they took part.

During the workshop, experts participated in two of six breakout groups, which focused on tasks related to furthering research on FLEs and compiling expert knowledge of FLEs. The resulting products of the breakout groups underwent two rounds

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