

Improving regional data processes to safeguard the future of Pacific coastal fisheries¹

“Fish is the cornerstone of food security in the Pacific Region”. This statement, from the Pacific Community’s 2011 report “Vulnerability of tropical Pacific fisheries and aquaculture to climate change”² is even more relevant today, as coastal fisheries are impacted by overfishing, poor land management practices, climate change and natural disasters.

The first SPC Regional Technical Meeting on Coastal Fisheries (RTMCF) was held in Noumea, New Caledonia from 28 November to 1 December 2017. The focus of the inaugural meeting was data, and how to bridge data gaps for better resource management. It was the first opportunity for 20 Pacific Island countries and territories (PICTs) to come together and discuss the challenges and opportunities of improving data collection for coastal fisheries in the Pacific.

The ocean and its resources are the foundation of Pacific cultural heritage, food security and economic development. Coastal fisheries provide many Pacific Island peoples with the bulk of the protein in their diet, and provides employment opportunities in the harvesting and selling of coastal marine species. But these vital marine resources are under increased threat from many factors, including overfishing to meet the demands of a growing population. This, combined with poor land management practices and environmental factors such as pollution, climate change and natural disasters, are putting pressure on Pacific coastal fisheries. Communities and fisheries managers need to make decisions about how to best manage, conserve and sustain coastal fisheries – and smart management decisions start with quality data.

Data provides the foundation on which communities and fisheries managers rely on when making management decisions that will make the most of marine resources in a cost-effective and sustainable way. Accurate data collected over a long period of time can help us understand what has happened in the past and what is happening now. Most importantly, it allows us to predict what may happen in the future, depending on the management decisions made today.

At the RTMCF, delegates from 20 PICTs gave presentations on the state of coastal fisheries in their home countries, and shared their experiences and challenges and what they learned from these throughout the week. Some recurring challenges faced by PICTs related to collecting data from fishers, and limited funds to employ, train and retain staff to undertake this work.

Fisheries are particularly complicated when making management decisions about how many fish should be caught,

where fishing should occur or not occur, and what species can be fished and which should be left to recover and rebuild populations. Data are collected by data collection officers as fishers bring their boats into ports around the region. This is an expensive and labour intensive process, especially given the Pacific’s archipelagic geography of scattered and far-flung islands, and the fact that it is impossible to monitor all landing points in the region. Another challenge is that a large proportion of coastal fisheries harvests is used for subsistence purposes, and mainly goes unreported. The amount of unregulated subsistence fishing means that data that are collected are limited to regulated species, commercial fishing, and harvests that enter the formal sales market.

Along with the logistical challenges, fishers are also often unwilling to participate in data collection. This is due to a range of factors common across most PICTs as discussed at the RTMCF. First, there is often no incentive. Fishers spend their time and effort working with data collectors, but often do not see how the data are used, or how it benefits them. Fishers are frequently asked (numerous times) to fill in forms for data collectors, with no perceived benefit to themselves, which can lead to “survey fatigue”. Another challenge is that fishers fear that the data collected could be used to increase their tax bill, or reduce any social security benefits they might currently be receiving. These misunderstandings are made worse when data collectors do not speak local languages, making communication difficult.

Because there are often no legal requirements for fishers to comply with data collection requests, it is important that data collectors have the training, skills and language to communicate effectively with fishers. Building a good relationship between data collectors and fishers increases the likelihood of compliance.

Across the Pacific, data are being collected, stored and analysed differently between countries, and even within ministries and departments within countries. The introduction of minimum standards of data collection, storage and analysis would mean that data that are currently sitting in isolation could be combined with other datasets. This would allow analysts to build a better picture of the health of coastal fishery stocks around the Pacific. Making better management

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² <http://www.spc.int/coastfish/en/publications/412.html>



The tedious task of entering data collected on paper sheets at the end of a long day in the field (A) may be over with the use of mobile applications such as Tails, which allows a user to directly enter data on a tablet or mobile phone (B). Images: Pierre Boblin (A) and Philip James (B)



decisions faster will help fishers see real improvements in their harvests, and encourage greater compliance with data collection and fisheries management.

Opportunities and possibilities for creating greater standardisation in the way that PICTs collect, store and analyse their information was discussed throughout the RTMCF, including challenges in developing and implementing any kind of standardised processes. One of the major improvements in efficiency and standards discussed at the meeting was the recent introduction of mobile technology to help collect and collate data.

In April 2016, SPC launched Tails, a new fisheries application. Tails is a mobile or tablet application designed for use by small-scale fishers, allowing data collectors to easily record the quantity and species harvested. The app can be used by fisheries officers when they are in the field, and works without internet access – an important feature given the connectivity issues in the far flung islands of the Pacific. The data are then uploaded to a database when Internet is available.

The delegate from the Cook Islands gave a presentation on the successful use of Tails to collect coastal fisheries data around the country. Tails was introduced in the Cook Islands a few months before the RTMCF. In those few months, more data were collected than in the entire previous calendar year, and the data that were collected were of a higher quality. In the Cook Islands, Tails is used to make data collection more efficient, and saves time because staff are not required to enter data from paper forms into a database. This means that analysis can be completed and applied to make good management decisions quickly.

Of course, data collection using Tails does not help to overcome the challenge of convincing fishers that it is safe and beneficial to participate in data collection. But mobile

technology such as Tails can help make data collection more efficient and also reduce the workload of staff who no longer need to manually enter data. As more good quality data are collected and analysed, management decisions can be made faster. This information can then be fed back into communities, in the hopes that fishers will see how the data are being used and start to see real improvements, such as fish populations increasing, as coastal fisheries are managed sustainably.

This process is already underway at Kadavu in Fiji, where Tails is part of a successful data collection programme to understand the impact of fishing for tuna and other pelagic species around fish aggregating devices deployed off the island's coast by the Ministry of Fisheries and SPC. Here, new technology has allowed for data to be collected, analysed and applied quicker than traditional paper-based methods. Along with the use of new technologies, the Kadavu project is employing and training local data collectors who are able to communicate effectively with local fishers with no language or cultural barriers. The data collectors are taking the time to build good relationships with local fishers and overcoming barriers to successful data collection by making sure that fishers understand why the data are being collected, how it will be used, and how fishers can benefit from the process. Fishers are seeing positive changes from the speeding up of data collection and application, and now have access to information that allows them to target species that will maximise their profits while also being more sustainable.

While Tails has been a big help in some PICTs, it is just one part of a complex problem. In Tuvalu, Tails in its current form does not fit the needs of fishers and data collectors. Tuvalu has successfully introduced PacFish ID, another SPC-created mobile app that helps staff identify fish species and make the process of data collection more efficient. The app provides quick access to a pictorial database of fish, allowing fishers and data collectors to easily identify fish species. But Tuvalu will need an updated version of Tails to get the full benefit from paperless data collection.

All the delegates represented at the RTMCF were interested in finding new ways to improve data collection and storage, along with improving the way that data are analysed and applied. Members approached the meeting in a collaborative spirit, and across the board were keen to find new ways to better capture and use data on coastal fisheries.

There will be many challenges to creating minimum standards for the collection, storage and use of data throughout the region. Agreements will need to be made to protect privacy and confidentiality as data are shared more freely. Some countries will need training and support to meet minimal

standards. Mobile technology such as Tails and PacFishID will need to be further developed and improved on in order to meet the needs of many PICTs.

By the end of the meeting, the delegates produced an Agreed Action Plan (see page 5, this issue), and agreed to establish a Data Standardisation Committee to set regionally agreed minimum standards for data collection. SPC will begin the process of establishing the Committee while countries will begin the task of internal preparation for changes. The first RTMCF was considered a great success, with participating PICTs eager to contribute, collaborate and find ways to work together to improve data collection, storage and analysis throughout the region.

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Correctly identifying species is another challenge faced by fisheries data collectors. SPC has produced numerous identification guides and a new mobile app, PacFishID, to assist them (here, Solomon Islands). Image: Malo Hosken