

## Adaptability is key to sustaining capacity development and technical support for Pacific Island member countries during the COVID-19 crisis

*As COVID-19 infections spread across the globe in early 2020 and governments shut down international travel, the Pacific Community's Coastal Fisheries Programme (CFP) was forced to stop business-as-usual and confront how to deliver its work programmes when the primary conduit for the flow of information and training had halted indefinitely.*

One of CFP's primary objectives is to provide in-country capacity development in fisheries science through training and technical assistance. The coronavirus pandemic, however, quickly and severely disrupted CFP's ability to provide this support. Further compounding the situation, private sector job losses and the subsequent global economic downturn forced many communities across the Pacific to turn increasingly to coastal fishery resources as a means for supporting families, which in turn, placed more pressure on these resources. As a result, timely data collection programmes to inform management became more pertinent and urgent than ever. Many fisheries authorities across the Pacific were required to increase their efforts to obtain quality and timely information on the health of their marine resources so that they could manage the unexpected pressures on their fisheries as best as possible.

With increasing country requests for assistance, the coastal fisheries science and database teams needed to come up with solutions that would: 1) allow capacity development and technical assistance to continue throughout the region, and 2) help facilitate rapid data collection programmes that were needed in response to a spike in harvesting pressure on coastal fisheries stocks. Fortunately, CFP was not starting from "ground zero", as the team had already begun development of an integrated e-data framework and presentation of numerous tools to facilitate working in such a system. This framework became the foundational backbone of our capacity development solutions to the unanticipated consequences of the global pandemic and subsequent economic downturn. Our approach was to make significant improvements to existing data collection programmes, coupled with remote training approaches without asking countries to find significant extra resources, which was especially relevant given that national budgets were coming under increasing strain. CFP also recognised the importance of, and moved quickly to create, partnerships with other regional organisations such as the University of the South Pacific, Secretariat of the Pacific Environment Programme, and TRAFFIC to help achieve our goal of continuing the development of scientific capacity within fisheries staff from member countries across the region.

The science and database teams with the Pacific Community's Coastal Fisheries Programme have spent the past



Using a tablet to record data during interviews in Abemama, Kiribati. (image: © Pauline Bosserelle, SPC)

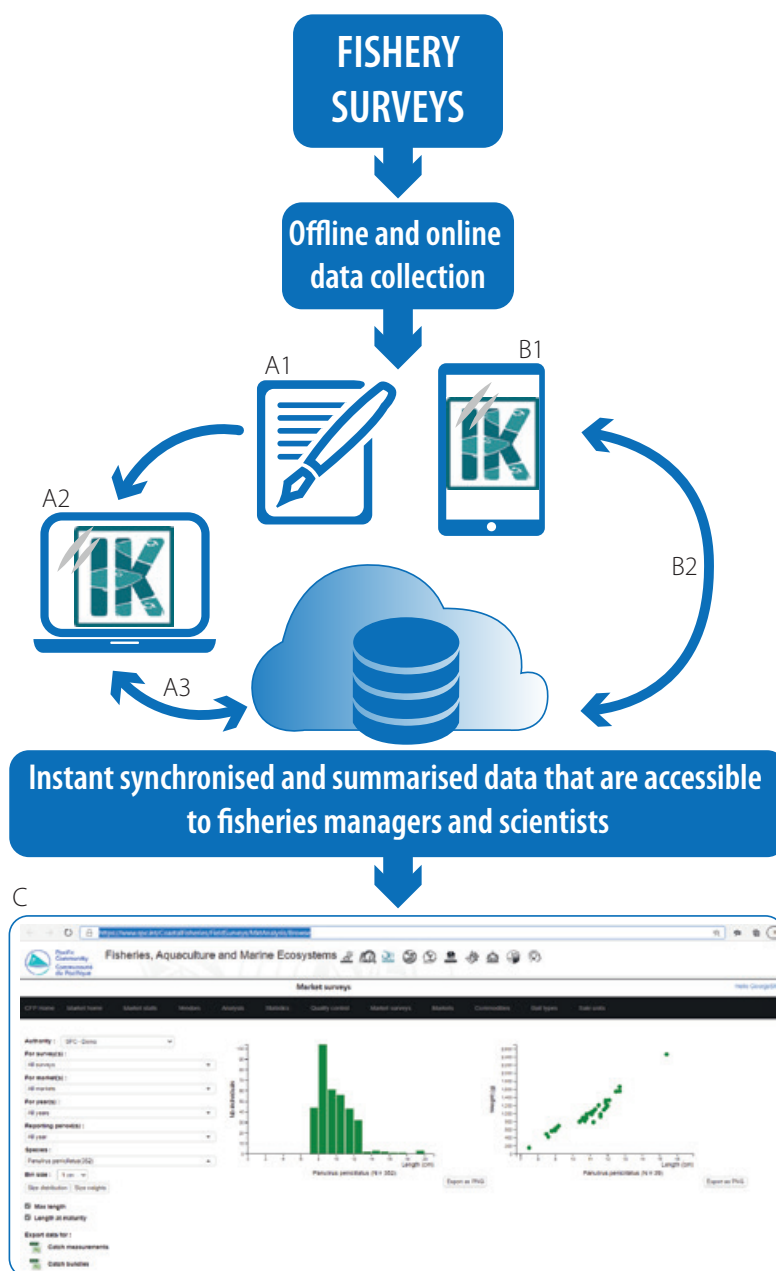
18 months building and trialling e-data systems that can potentially transform the ability of coastal fisheries departments across the Pacific to collect quality coastal fisheries data on a regular basis. The e-tools used for data collection (e.g. IkaSavea, Landing Survey, and Field Survey) and training (PacFishID) were expanded and adapted so that CFP can increase its capacity to provide the necessary assistance to fisheries staff in member countries. Virtual communication platforms such as "Zoom" and Microsoft's "Teams" were also used as a starting point to enable the training. An added

benefit of CFP's initial quick-response approach was that the lessons learned are now being used to guide further improvements in the design and implementation of online interactive training courses tailored for Pacific Island fisheries.

Our remote capacity development projects have thus far been implemented for fishery-dependent and fishery-independent monitoring of sea cucumbers, coconut crabs and coastal reef fish in Fiji and Kiribati. These fisheries are an easily accessible coastal fishery resource that are increasingly the focus of communities across the Pacific in response to COVID-19. Together, they make up a significant proportion of income derived from artisanal and subsistence fisheries in these countries. Fisheries management authorities in Fiji, Kiribati and elsewhere have also recognised the necessity of being proactive under this coronavirus-driven increase in harvesting pressure on stocks, and have made these fisheries the focus of management improvement programmes.

The core data-collection module of our e-data framework is called “Ikasavea”, an Android-based application for both online and offline use, which can be installed on phones or tablets (Fig. 1). Ikasavea synchronises with two web-browser modules called “Landing Survey” and “Market Survey”, both hosted by SPC. These data collection platforms have been designed with an integrated field-to-report approach in mind, whereby all aspects of the data chain – from data collection, storage, curating, analysis and reporting – are connected. Together with our partners at the University of the South Pacific, remote training in their use has been provided to colleagues and peers within the ministries of fisheries in Fiji and Kiribati. Training in fishery-dependent and fishery-independent survey methods for coconut crabs and finfish has been successfully implemented, and field data is currently being collected across these multiple fisheries. For *in-situ* fishery-independent surveys, such as those for coconut crabs, the Field Survey (online, web-based platform) was used for the first time by Fiji's MoF and USP staff in Naegelevu Island Fiji. Data from this initial survey are currently in the curation phase and continued data-collection across the wider Fiji-fishery is underway. Together, the suite of e-tools has provided a comprehensive “e-toolbox” for coastal fisheries scientists and managers to undertake much-needed quality data-collection programmes efficiently and effectively.

Assistance and technical capacity development are also being provided to Fiji's Ministry of Fisheries (MoF) staff to determine the status of the sea cucumber fishery, which is currently under an ex-



- A1: data are recorded on a logsheet
- A2: data are copied from the logsheet to one of SPC Coastal Fisheries Programme web apps on a computer
- A3: data are automatically transferred to the cloud
- B1: data are directly recorded in the IKASAVEA app using a phone or a tablet when offline or online
- B2: data are automatically transferred to the cloud as soon as internet is available
- C: various instant analyses are available to managers and scientists as soon as the data have been received

Figure 1. The flow of coastal fisheries data through Ikasavea and CFP web apps from collector to fisheries managers and scientists.





Using the integrated Ikasavea and web apps would streamline and simplify the collection of data from a typical Fijian mixed species coastal fishery market stall. (image: © Andrew Halford, SPC)

port moratorium. The Government of Fiji requested information from MoF on the status of sea cucumber resources across Fiji, with the aim of opening the fishery in response to the COVID-19-related economic downturn. In response, MoF requested support from the Pacific Community to assist with determining the status of the sea cucumber fishery so that MoF could make scientifically informed management decisions when the fishery is reopened. Surveys and training were underway at the time of writing, although on 17 December, category 5 Cyclone Yasa passed directly through the southern end of Fiji's northern island of Vanua Levu, causing death, major property damage, and the displacement of hundreds of families. This unfortunate event has further inhibited MoF's ability to respond to the urgent need for information, and the immediate effect of Cyclone Yasa on the sea cucumber fishery is unknown. However, it is hoped that CFP's model of virtual training and the suite of e-tools developed will aid in Fiji's fisheries quick response to this crisis so that MoF can continue to gather vital information on their fisheries.

The listing of the two teatfish sea cucumber species – *Holothuria whitmaei* and *H. fuscogilva* on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) – is an added management requirement for Pacific Island countries and territories (PICTs) to develop non-detriment findings (NDFs) and, if needed, adjust current management frameworks when exporting these species. A major bottleneck, however, is the lack of technical expertise and understanding of the NDF process. This limitation has so far impeded the development of NDFs

of four out of the five PICTs that are signatories to CITES. Virtual workshops and NDF support have already been provided by SPC and partners, Secretariat of the Pacific Environment Program and TRAFFIC, to member countries and the lessons learned from these workshops will now guide the development of an e-tool that can be used to support PICTs in building management strategies that comply with the scientific requirements of CITES. Using our virtual training and e-tool development platform, a first stage in a wider programme is to build a web-based application that can be used by PICTs as a guide to develop NDFs. With this tool available, PICT scientific authorities should be able to prioritise the necessary scientific work required for NDF assessments so that exports comply with CITES's trade regulations.

Online virtual training platforms will never fully replace a face-to-face training environment. This is especially the case around the technical aspects of undertaking surveys and the analysis of data, which are much better taught with hands-on training. Nevertheless, significant investment in e-data systems and online teaching tools has enabled CFP to quickly respond to the needs of its member countries, despite the roadblocks imposed by the COVID pandemic. The crisis has had a positive aspect in that there has been a significant re-focusing of resources towards enabling online and e-data systems to become as effective as possible. The use of these systems has allowed member countries to obtain significant improvements in their data-collection programmes. Data collected using the suite of e-tools, and entered directly into these apps in the field, has provided direct access to managers, instant curation, and the ability to interrogate the data efficiently and effectively. The virtual training model has also allowed us to respond quickly to urgent requests for addressing significant environmental or social crises now and in the future.

Once the COVID pandemic is controlled enough to enable travel to resume, CFP staff envision the e-data and on-line learning systems as continuing to provide sustained capacity building and technical support above and beyond what periodic travel can sustain. With the e-tool platform, we now have another product in our toolbox as we seek to help member countries manage their resources effectively.

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