

An assessment of socioeconomic impacts due to COVID-19 on coastal fisheries in Tonga

Jean-Baptiste Marre¹ and Carolina Garcia Imhof²

The COVID-19 crisis has already severely impacted several sectors in Tonga and poses significant risks to the country's health security, stability and economic recovery. However, the extent to which COVID-19 has affected coastal fisheries, and in particular the communities in the different island groups who depend on them, has been poorly documented.

At the end of 2020, Tonga's Ministry of Fisheries (MoF) sought assistance from the Pacific Community (SPC) to conduct a socioeconomic assessment of the impacts of the COVID-19 pandemic on the coastal fisheries sector. The main purpose of this assessment, as stated by MoF, is for the ministry to provide information to donors to help inform their decisions on future funding activities, such as COVID-19 recovery or response planning, and develop financing facilities that are made available for countries to apply for. In addition, the findings from this assessment could be used to improve MoF's current management plans and strategies, such as the current COVID-19 response plan.

Following consultations with MoF, it was decided to conduct two separate assessments: one targeting households that benefit from subsistence and artisanal fishing, through a national survey, and one targeting registered commercial small-scale fishers through focus group discussions (FGDs) to be run by MoF with guidance from SPC. Given that a national household survey examining the socioeconomic impacts of Special Management Areas³ (SMAs) was planned for the first quarter of 2021, it was collectively decided to take advantage of this opportunity and include a dedicated COVID-19 module in the questionnaire. The specific objectives of both assessments were to: 1) better understand the effects of COVID-19 on coastal small-scale fishers and SMA households; 2) examine how they have coped and recovered from the effects of COVID-19; and 3) identify the types of support that they would find helpful to cope with and recover from the effects of COVID-19, as well as future crises.

This article summarises⁴ the methodologies and main findings for both the SMA household surveys and the FGDs, and concludes by providing some recommendations.

Methodology

SMA household survey

The questionnaire,⁵ including the COVID-19 module, was designed in full collaboration with MoF and other partners involved in the SMA socioeconomic assessment, through multiple meetings, correspondences, and reviews. It also included a demographic section that can be used for additional socioeconomic analyses, including from a gender and social inclusion perspective.

Multiple meetings and correspondences with stakeholders involved in the SMA survey, including MoF, were conducted in order to design appropriate samples. Participating villages were randomly selected and then the stratified sample⁶ size of each village was calculated proportionately to the total sample size, and based on the 95% confidence level and 5% confidence interval.

The questionnaire was uploaded on Survey Solutions.⁷ After enumerator training and multiple testing, the survey was conducted by MoF in March 2021, using tablets. In total, 312 SMA households were surveyed. SPC then provided MoF with data pre-processing and exporting assistance, while MoF conducted data checking and cleaning. Of the 312 interviews conducted, data were collected from 275 respondents,⁸ comprising 135 females and 140 males.

¹ Economist, Coastal Fisheries and Aquaculture Programme, SPC. Email: jean-baptistem@spc.int

² Social Scientist, Coastal Fisheries and Aquaculture Programme, SPC. Email: carolinag@spc.int

³ The SMA programme is Tonga's version of community-based marine management, whereby communities are given the responsibility of looking after their own marine resources, both for themselves and for future generations. The definition of an SMA and associated regulations are provided in the Fisheries Management Act 2002.

⁴ An exhaustive presentation of existing information on COVID-19 impacts, the two assessments' methodologies and results (including detailed analysis for youth and by income categories), and discussion points can be found in the final report (<https://purl.org/spc/digilib/doc/8gqjg>).

⁵ The questionnaire can be made available by the authors upon request. Additional details on the COVID-19 module and demographic section can be found in annex 1 of the final report.

⁶ Additional details on the sampling can be found in annex 2 of the final report (<https://purl.org/spc/digilib/doc/8gqjg>).

⁷ <https://mysurvey.solutions/en/>

⁸ 35 households did not complete the questionnaire because they did not know about the SMA programme, and 2 did not give their consent.

Focus group discussions

The purpose of the FGDs was to gather information directly from small-scale fishers in the different island groups. SPC provided MoF with guidance⁹ on how to conduct the FGDs, including indicative questions, suggestions to capture profiles of participants, and recommendations on how to facilitate, take notes and report on the discussions.

In March and April 2021, a team from the MoF's Fisheries Management and Development Division (FMDD) conducted FGDs in Ha'apai, Vavau, Euia and Tongatapu. Around 10 participants per island group (42 in total) were selected by MoF, based on several criteria: frequent fishing activity, knowledge of the topic (COVID-19 impacts and recovery), ability to convey information from fellow small-scale fishers, and ability to articulate. Most participants were small-scale commercial fishers, with fishing being a primary source of income for almost 90% of them.

Results

Socioeconomic impacts of COVID-19

The main findings from both assessments show the following socioeconomic impacts:

- SMA households and small-scale fishers suffered numerous stresses from COVID-19, such as reduced local availability of fresh fish and seafood (which is the most prominent one reported by SMA households), stress on physical and mental health, loss of sociocultural activities, and financial hardship among others.
- While most SMA households reported an unchanged level of fishing effort or catches as compared to before COVID-19, most small-scale fishers reported reduced fishing effort.
- Half of SMA households and almost all small-scale fishers reported making less income from fishing, due to numerous factors but also an increase in home consumption of seafood. A detailed illustration of the impact chain on income, based on the FGDs, is presented in Figure 1.

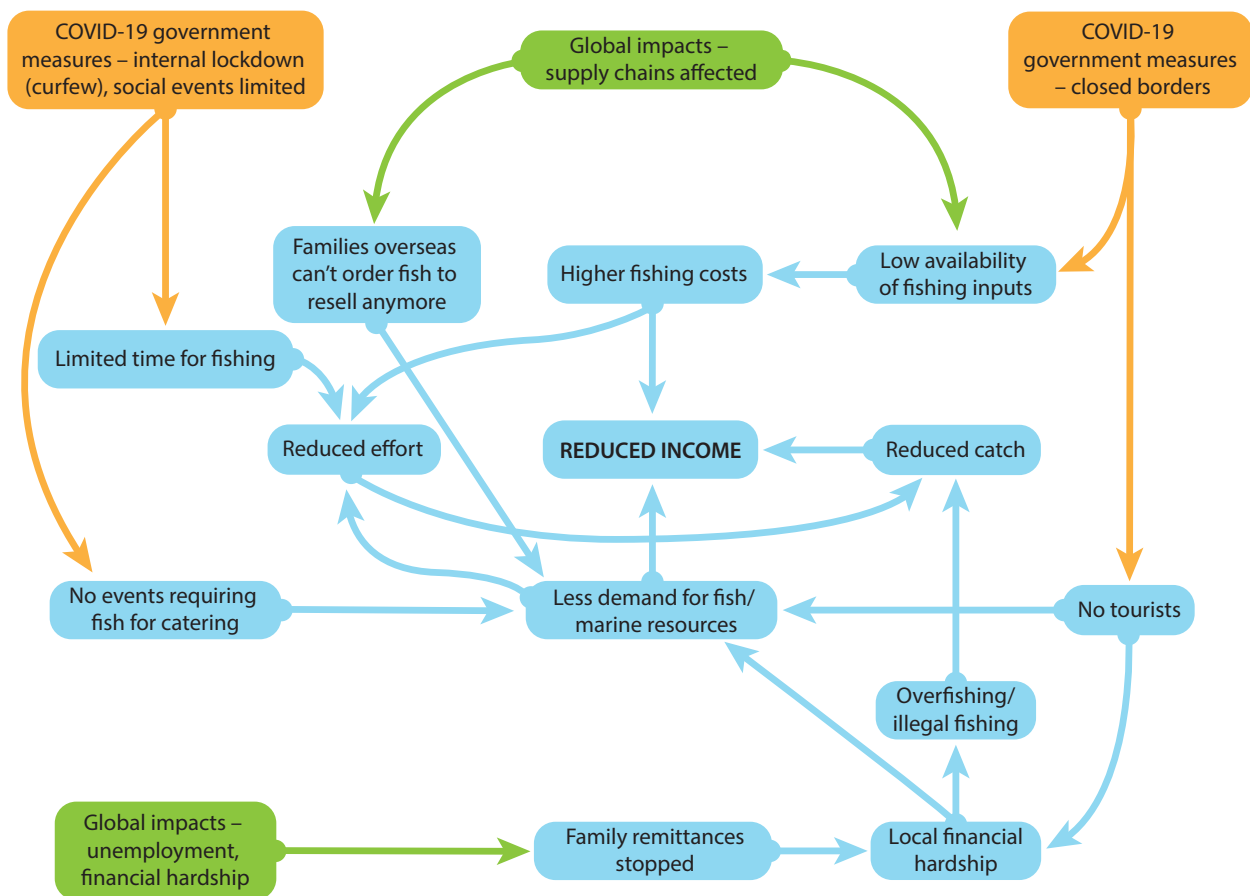


Figure 1. Inter-related factors behind the reduction of income of small-scale fishers due to COVID-19.

⁹ See annex 4 of the final report (<https://purl.org/spc/digilib/doc/8gqjg>).

Coping mechanisms

Despite these impacts, the assessments’ findings also illustrate a solid coping capacity from both SMA households and small-scale fishers:

- Almost all SMA households and small-scale fishers used multiple coping strategies to minimise COVID-19 socio-economic impacts (see Fig. 2). New livelihood activities (such as farming, or handicraft making for women) were key coping mechanisms. For SMA households this was particularly successful as half of respondents felt that COVID-19 did not impact their households.
- Results highlighted the key role played by women in the use of coping mechanisms (see Fig. 2). This underscores the importance of targeting development support to

ensure a compelling participation of women as part of a generalised resilience strategy for SMA communities.

- COVID-19 caused one-fifth of SMA households to start new fishing activities (see Fig. 3) that focused mostly on invertebrates, including sea cucumbers. Small-scale fishers also reported changing their fishing practices (e.g. no more night fishing) and marketing strategies.

Response and recovery options

Investigating the preferred types of short- to medium-term assistance needed by SMA households and small-scale fishers to better cope with COVID-19 impacts on fisheries is critical to enhance response and design recovery interventions.

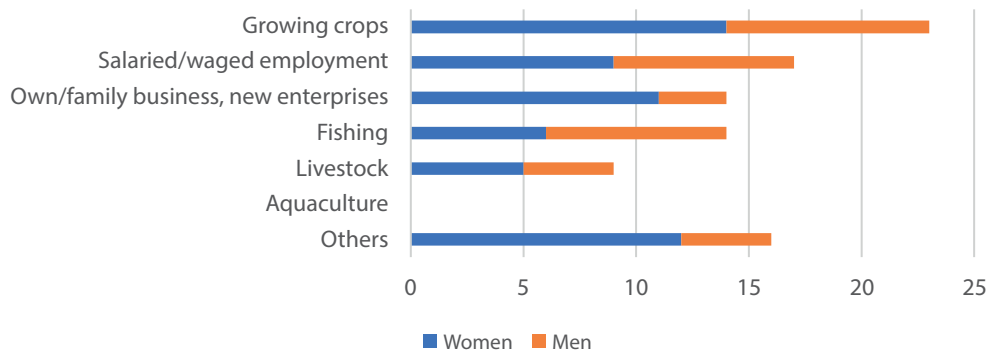


Figure 2. Type of new activities undertaken by SMA households to earn income in order to cope with COVID-19 (n = 63).

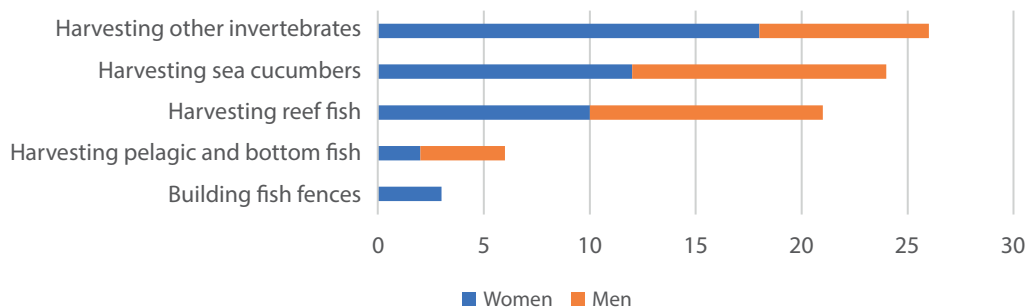


Figure 3. New fishing or harvesting activities started by SMA households due to COVID-19 (n = 56).

Figure 4 presents the preferred types of support selected by SMA households, which include: provision of fishing tools (selected mostly by men), training¹⁰ (selected mostly by women), new livelihood development (slightly preferred by women), and fish aggregating devices¹¹ (selected mostly by men).

Table 1 summarises the possible recovery options identified by small-scale fishers during the FGDs. These are classified into three groups according to three criteria: timeframe of benefits, potential environmental impacts, and beneficiaries. The grouping is subjective, as it was done by the authors based on their own judgements.

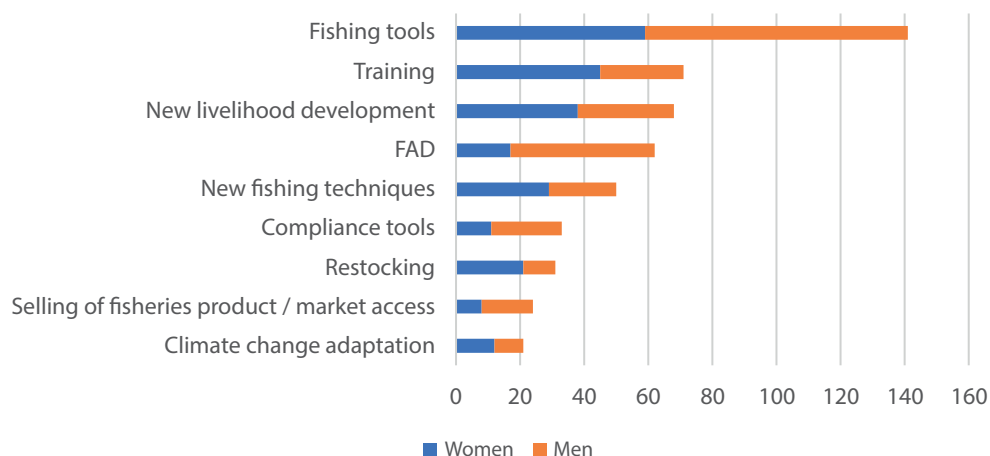


Figure 4. Most important types of assistance needed (n = 275).

Table 1. Recovery options identified by small-scale fishers, classified into three groups by the authors based on their own judgements, using three criteria: potential environmental impacts, timeframe of benefits, and beneficiaries.

Recovery options	
<p>Group 1: short- to medium-term benefits, negative environmental impacts, only targeting fishers</p>	<ul style="list-style-type: none"> • Provision of fishing equipment and inputs (e.g. gear, ice, sea safety, buoys, boats, engine) • Subsidies for fuel or gear costs
<p>Group 2: medium- to long-term benefits, possible environmental impacts, targeting fishers and others</p>	<ul style="list-style-type: none"> • Tailored support (technical and financial) for women involved or interested in fishing or aquaculture • Building infrastructures to facilitate access to fishing grounds (e.g. canals) • Establishing a shipyard to build and repair fishing boats (e.g. Ha'apai) • Assistance to set up local fishers' associations • Deployment of FADs to target more pelagic fish • Microfinance scheme (e.g. concessional loan) for fishers • Financial and technical support to establish new aquaculture ventures • Training in sustainable fisheries management and techniques
<p>Group 3: mostly long-term benefits, positive environmental impacts, targeting the community</p>	<ul style="list-style-type: none"> • Awareness and tools to increase compliance • Tailored support to SMA management • Development of local marketplace (e.g. Hofoa, Ha'apai)

¹⁰ The type or purpose of training was not specified in the questionnaire.

¹¹ The option that respondents could select was simply "FADs", which in the context of Tonga includes offshore and nearshore artisanal FADs.

Recommendations

Based on all these findings, the following recommendations can be made:

- Prioritise COVID-19 response and recovery interventions that would allow longer term benefits, have minimum environmental impacts, and cover a wider section of the community (groups 2 and 3, Table 1). Such interventions should also demonstrate higher eligibility to donor funding.
 - Despite households' and fishers' reported needs for fishing development activities (e.g. provision of equipment or FADs), COVID-19 response and recovery assistance from the government should include strengthened management actions, such as monitoring, control and surveillance of changes in fishing activities (in particular, reported new activities), tailored training for community-based management, and increased awareness of regulations and sustainable fishing practices.
 - Development support to facilitate household access to local seafood should be prioritised as a short-term response to improve food security and local economies. Examples include assistance to set up new local marketplaces and fisher associations that encourage both male and female fishers to join and actively participate.
 - Targeted training and support for those who ventured into new livelihood opportunities should be provided to overcome hardship and ensure sustainability, making sure gender specific barriers and needs are addressed.
 - Promoting new alternatives or additional fishing activities that help to relieve the pressure on marine resources that are already overharvested (e.g. sea cucumber) is key to strengthening resilience to future crisis.
- Among the SMA household respondents, the higher percentage of women undertaking new activities, including fishing invertebrates, advocates for tailored livelihood development support with a women's economic and financial empowerment angle. For instance, gender sensitive access criteria should be included in microfinance schemes.
 - The diversity of reported socioeconomic impacts and coping mechanisms used by SMA households in the face of COVID-19 calls for a coordinated and integrated national response. Gender consideration and conditionalities should be included in any interventions to avoid unequitable outcomes.

Acknowledgements

The authors acknowledge the valuable contributions and reviews from the Ministry of Fisheries (MoF) in Tonga and from SPC colleagues in the Coastal Fisheries and Aquaculture Programme, and Human Resources and Social Development Programme.

This assessment has been conducted under the Pacific-European Union Marine Partnership Programme, implemented by SPC and funded by the European Union and the Government of Sweden. The contents of this article do not necessarily reflect the views of the European Union and the Government of Sweden.

© Copyright Pacific Community (SPC), 2021

All rights for commercial / for profit reproduction or translation, in any form, reserved. SPC authorises the partial reproduction or translation of this newsletter for scientific, educational or research purposes, provided that SPC and the source document are properly acknowledged. Permission to reproduce the document and/or translate in whole, in any form, whether for commercial / for profit or non-profit purposes, must be requested in writing.

Original SPC artwork may not be altered or separately published without permission.

The views expressed in this newsletter are those of the authors and are not necessarily shared by the Pacific Community.

Original text: English

Pacific Community, Fisheries Information Section, BP D5, 98848 Noumea Cedex, New Caledonia
Telephone: +687 262000; Fax: +687 263818; spc@spc.int; <http://www.spc.int>