

Knowledge and information gaps in fisheries management among indigenous communities in Solomon Islands

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Abstract

The recent proliferation of research on fisheries and coastal management in the Pacific region has been integrated to inform agreements at national and regional levels to promote community-based fisheries management (CBFM). However, it appears that this information is not reaching the grassroots to the same extent as indigenous people often note having knowledge gaps that impede management of their resources. This research paper presents a summary of two sets of data, namely 1) expressions of interest from communities to the national fisheries ministry for information and awareness, and 2) questions related to coastal resources management asked by community members to provincial and national government staff. The findings present fisheries-related knowledge gaps per geographic region and characterise the specific types of knowledge gaps impeding CBFM. From this understanding we can assess which types of information have not reached certain communities in Solomon Islands, and how CBFM awareness can be designed more appropriately for different communities to help them better understand CBFM activities. Our data indicate that policy and practice to date have not always translated into community members understanding the principles of fisheries management, life cycles of key species, and laws and regulations regarding their own fisheries. This assessment can inform scientists, government officials, non-governmental organisations (NGOs) and others on the knowledge and information gaps in communities so that interventions can be framed accordingly.

Introduction

Prior to the introduction of community-based fisheries management (CBFM) in Solomon Islands, communities practised traditional marine resource management methods, such as making specific sites *taboo* (forbidden to fish or harvest), to allow for species and habitats to regenerate. This traditional tenure system of managing marine resources depends on the interests of the community or tribe, and local tribal leaders play key facilitative roles.

The traditional marine tenure system paved the way for the establishment of CBFM, with the concept revolving around the traditional management tenures of local areas. Now, local leaders in management are supported in a more effective way by the Ministry of Fisheries and Marine Resources (MFMR), which provides knowledge about law and species biology to help communities to develop management plans for their coastal areas. Unlike the traditional tenure system, the CBFM strategy involves the Solomon Islands government, in cooperation with its development partners, to support awareness, reach and documentation of CBFM across the nine provinces of Solomon Islands. Currently, other partners supporting CBFM implementation in Solomon Islands are World Wildlife Fund (WWF), The Nature Conservancy (TNC), Mekem Strong Solomon Islands Fisheries (MSSIF), WorldFish, Pacific Regional Oceanscape Program for Economic Resilience (PROPER) and the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM). A national CBFM strategy was developed in line with other existing MFMR policies, including the *Solomon Islands National Fisheries Policy 2019–2029* and *Solomon Islands National Ocean Policy (SINOP) 2018*, which will assist with the scaling up of CBFM across the country.

The existing CBFM strategy fits the local context but is also costly to implement given the geographical locations of communities spread across more than 300 inhabited islands and the limited government funding to scale up its implementation. Operating under MFMR, the CBFM unit, tasked with supporting CBFM, consists of seven staff (of which two are seconded officers from World Fish Solomon Islands). CBFM staff work closely with 21 Provincial Fisheries Officers (PFOs) based in the provinces to deliver CBFM outcomes.

Rather than having regular government funding for activities, the rolling out of the CBFM strategy is made possible through funding from partners and projects such as MSSIF, PROPER, WorldFish, the Japanese International Cooperation Agency (JICA), World Bank and funding from the Solomon Islands government for staff costs.

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This paper presents a summary of the expressions of interest (EOIs) from communities to government and the commonly asked questions in field activities conducted on CBFM. The objective is to identify the areas of support communities need most and their level of understanding on CBFM through analysis of commonly asked questions. Findings on both topics will assist in scaling up of CBFM activities in Solomon Islands to ensure communities are fully equipped with the knowledge to manage their resources more effectively.

Data used are those available from MFMR and World Fish on EOIs submitted by communities and the frequently asked questions recorded by MFMR and WorldFish staff on CBFM field reports. The data on EOIs, available from MFMR, are from 2012–2022, and data on commonly asked questions were obtained from four field trips during 2020–2022.

Methods

Data analysis for this paper was done in two parts. An analysis of EOIs from communities was first conducted, followed by analysis of the type of questions commonly asked by communities during face-to-face sessions between government staff and community members on CBFM in the community.

The EOI data were gathered and analysed over a 10-year period from 2012 to 2022. Over that period, MFMR received requests for support on CBFM activities from communities spread across the nine provinces.

Submitting an EOI for support to MFMR is a channel through which communities request the assistance they need, and these requests are documented. EOIs are done orally for communities located in Guadalcanal and others nearby. CBFM staff assist communities with their EOI requests by carrying out awareness programmes on CBFM, which generate interest, as well as face-to-face meetings to assist with formulating and reviewing their management plans. EOIs are usually submitted after communities receive information on CBFM, and sometimes as a result of learning from other communities practising CBFM.

Data on the commonly asked questions were gathered from four provinces in Solomon Islands: Malaita, Isabel, Temotu and Western Province. Temotu and Isabel were listed in *Community Based Fisheries Management in Solomon Islands: Provincial Snapshots 2022* as having gaps in terms of CBFM and being priority sites for assistance with CBFM following recommendations from PFOs to include these areas. Isabel is the longest island, and Temotu is the most remote province in the country, being situated on the border with Vanuatu. Western Province and Malaita are included in the data sample due to the rolling out of awareness activities there by WorldFish and PFOs, although most activities have been carried out in Malaita, the most populous province.

The recorded questions were grouped into relevant categories and the number of questions in each category was counted, as presented in the figures below. Some questions were categorised into more than one category; for example, questions on logging were also categorised under marine pollution because of its effects on rivers and marine areas. Findings were also discussed with project staff and supported by previous findings from reports such as the *Community Based Fisheries Management in Solomon Islands: Provincial Snapshots 2022*.

The age and gender of community participants who asked questions were not recorded, but data are available on the communities/villages where the questions were collected. The majority of these communities were targeted for CBFM awareness as there were no previous interventions or CBFM activities reaching them.

Findings

Presented below are findings from the analysis of the EOIs to MFMR and the commonly asked questions by communities. Some communities have not previously received awareness on CBFM, and their questions are not a reflection of the effectiveness of awareness but of reach of information. In Malaita for instance, where CBFM activities are widespread, there is wider recognition of the need to manage their resources, even though some communities have experienced overharvesting of resources. In Temotu Province, questions triggered by CBFM awareness were more related to compliance and regulations. Awareness led them to realise that resources will become scarce if they are not properly managed and the law is not followed.

1. Requests to MFMR for information

EOIs submitted by province

Figure 1 below shows EOIs by province in the period 2012–2022. Malaita Province had the highest number of EOIs, while Makira Province had the lowest, with only one EOI received. This is unlikely to reflect the interest level of communities, but instead the reach of CBFM services and engagement of CBFM officers in the province. According to *Community Based Fisheries Management in Solomon Islands: Provincial Snapshots 2022*, CBFM awareness initiatives reached more than 80 communities in Malaita Province between 2020 and 2023. These communities were beneficiaries of project activities by MFMR, the Pacific European Union Marine Partnership (PEUMP) project, Enhancing Livelihoods while Governing Marine Resources in the Pacific Island Countries (Swebdio Livelihoods) project, and Australian Centre for International Agricultural Research (ACIAR) Pathways 1 and Pathways 2 projects. These interventions, all operating in Malaita Province, have led to increasing awareness of CBFM as well as the provision of funding opportunities for CBFM activities by the Provin-

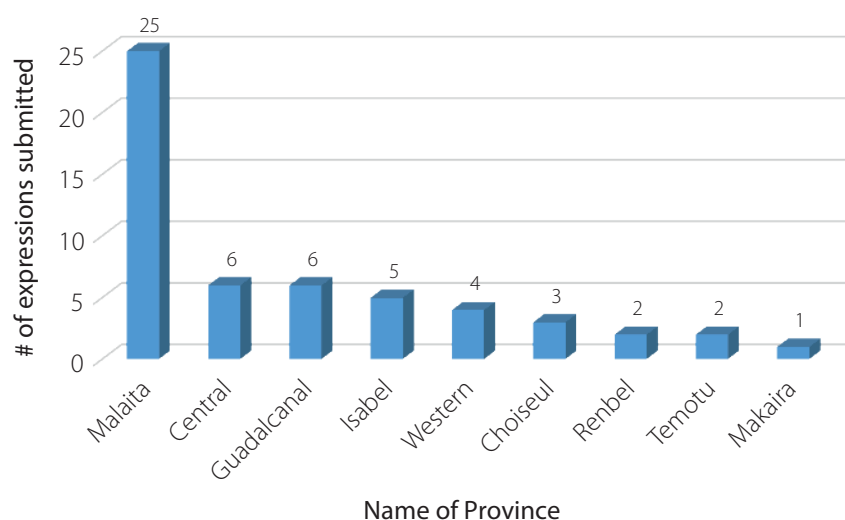


Figure 1. Origin of EOs from communities to MFMR 2012–2022

cial Fisheries Office and others in the communities. With four provincial fisheries staff, the Malaita Provincial Fisheries Office is well resourced compared to other provinces that may have one or two. Other projects related to livelihoods, such as those led by World Vision Solomon Islands and Save the Children in parts of Malaita, have also influenced communities cooperating on joint activities and may have contributed to realisation of the benefits of supporting initiatives such as CBFM. Further, PFO and WorldFish staff report that the realisation by communities in Malaita that their coastal resources are decreasing or becoming scarce led to many leaders submitting EOIs for assistance on community-based resource management (CBRM) activities.

With funding support from partners, CBFM activities are currently ongoing in the other eight provinces in Solomon Islands. However, identifying gaps and reach remains challenging given the various projects and organisations involved in CBFM activities in different ways, and lack of coordination and sharing of data across agencies.

Even though the CBRM strategy is set by the national government, funding to support activities does not directly come from the government's core budget and may follow priorities of international non-governmental organisations (NGOs) or donor-driven projects. For example, Western Province has several communities practising CBFM in part due to projects by environmental NGOs targeting manage-

ment activities either concerning key species under threat, such as turtles and dugongs, or coral reefs as part of region-wide coral conservation efforts.

Another example is Guadalcanal Province which has widespread reach in terms of CBFM, in part due to its proximity to Honiara, the capital city. However, CBRM is currently constrained by lack of transport for the two provincial government officers to access CBFM communities. Challenges in transport, other resources and reach may influence where EOIs originate from, despite participation in harvests and interest in assistance by community members.

Provincial constituencies submitting EOIs

Table 1 below reveals that in the period 2012–2022, 21 out of 50 constituencies across the nine provinces submitted EOIs to MFMR for assistance on CBFM and related activities. Malaita Province still recorded the highest number of EOIs, with 10 expressions received from communities in Small Malaita constituency.⁴ The higher number of EOIs submitted by people in this area is due to a recognition of overharvesting in seven communities in South Malaita and the need to manage their resources. This is evident in the type of issues the community want to address based on their EOIs. Interestingly, two communities, Paleohao and Mehuilo, submitted two expressions each.

⁴ These communities include Paelohau, Mehuilo, Rota, Fanalei, Malau, Houna'asi, Waimarau and Heruiesi.

Table 1. Provincial constituencies submitting EOIs 2012–2022

Name of province	Constituency	Number of EOIs submitted
Central Province	Ngella	5
Central Province	Savo/Russell	1
Choiseul Province	North East Choiseul	3
Guadalcanal Province	West Guadalcanal	4
Guadalcanal Province	East Guadalcanal	2
Isabel Province	Gao/Bugotu	3
Isabel Province	Hograno/Kia/Havulei	1
Isabel Province	Maringe/Kokota	1
Makira Province	Ulawa/Ugi	1
Malaita Province	East AreAre	2
Malaita Province	West Kwaio	1
Malaita Province	East Kwaio	1
Malaita Province	North Malaita	5
Malaita Province	Small Malaita	10
Malaita Province	West Kwara'ae	3
Malaita Province	West AreAre	3
Rennell Bellona Province	Rennell Bellona	2
Temotu Province	Temotu Nende	1
Temotu Province	Temotu Vattu	1
Western Province	Marovo	3
Western Province	North Vella La Vella	1

Types of requests by communities through EOIs

Figure 2 shows that 57 communities across the nine provinces requested awareness on CBFM and training. These requests mainly centred on scoping and assessment of identified sites for management, training on development of management plans, and registering of existing management sites to become a Marine Protected Area (MPA). The high requests for CBFM are driven by awareness and the realisation of the importance of managing their coastal resources. The communities also explained why they were requesting CBFM awareness and training in their communities. Some of these reasons were: overharvesting of aquatic species; reduction in the number of aquatic species; use of unwanted fishing practices; and interest, as well as the community's own intention, to manage the resources in their area.

There are also communities that are already practising some form of CBFM but have gaps in knowledge on how to fully manage and look after the resources available in their management site. For example, community members may not understand the lifecycle of key species they use for food (such as reef fish), or to sell for income (such as *beche-de-mer*), or may be facing adverse consequences of habitat degradation, such as through logging or overuse of mangrove wood for fires. As a result, they requested training to help them manage their resources in a more effective way.

The request for awareness on logging and mining impacts on the environment was received from communities in the Rennell Bellona Province. Rennell Bellona Province in Solomon Islands is known for bauxite mining operated by the Indonesian firm Bintang Mining Company Ltd and a Chinese firm, World Link Mining Ltd. Logging and mining appear to have adversely affected the productivity of land, freshwater and marine species (Puia 2021).

Additionally, Vatilau community in Big Ngella has requested the establishment of a fisheries centre in their community to support fish trading activities, which they have previously engaged in without proper fisheries facilities. *Community Based*

Fisheries Management in Solomon Islands: Provincial Snapshots 2022 highlights that Central Province has only one fish market located in the provincial headquarters in Tulagi but lacks storage facilities for fishermen to store fish, and fishermen usually travel to Honiara with cooler boxes to sell fish at the Honiara Central Market. The lack of proper storage facilities in the province may be the reason for the Vatilau community's request for fish storage facilities to be installed in their community. The other request is from Hatere community in Marau in East Guadalcanal requesting the re-opening of the Marau fisheries centre after it ceased operation.

Gender and EOI formulation

It is evident from the EOIs in the period 2012–2022 that men took the lead in conducting community and tribal meetings to discuss options to manage their coastal resources. The meeting minutes from the community discussions attached to the EOIs clearly state this. This is common across all areas which had EOIs submitted to MFMR. Additionally, men are the signatories and listed as points of contacts in the majority of the EOIs received. This is not surprising given that female chieftainship is very rare, and political leaders in Solomon Islands are mostly men. For instance, in 2023, only four out of 50 Members of Parliament are women. Data from 2020 indicated that 68% of CBFM fisheries committees had men as the majority of members (Gomese and Eriksson 2020). Even in Guadalcanal and Isabel Provinces, which have matrilineal land inheritance, men still dominate decisions, at least as is recorded in representation at and facilitation of major meetings.

Nevertheless, it was also evident that even though females were not assigned leadership roles in the management of resources, they were part of the meetings conducted and even listed as members in the proposed CBFM committees. This means that women's voices were considered in some way, and they contribute to managing coastal resources in their community. Both men and women generally harvest aquatic foods and species in Solomon Islands, with one study estimating 50% of coastal catch is taken by women (Olha 2015).

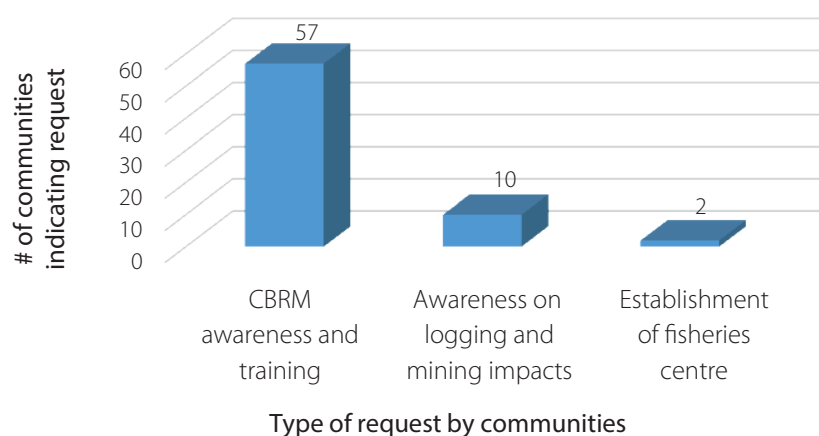


Figure 2. Indicated topics of interest for government assistance

A study of gender and social inclusion across Solomon Islands, Kiribati and Vanuatu found that even after participatory analysis of who should be involved in CBFM and improvements in representation of women and youth, women remained the minority in all 17 areas studied (Ride et al. 2023). These statistics indicate Solomon Islands has some CBFM committees with equal numbers of men and women, but most have more male members and committee chairs are men.

II. Knowledge gaps

A total of 95 questions were recorded in field activities in Isabel Province. The questions came from 13 villages⁵ across the province.

Frequently asked questions in Isabel

As depicted in Figure 3, most of the questions focused on knowledge gaps concerning marine species, CBRM, and compliance and regulations. The majority of the questions on marine species were around the different types of species and their roles in coastal ecosystems. Similarly, the question, “why the Ministry of Fisheries doesn’t allow the killing of the two dangerous species, crocodile and sharks?” was also asked in Oroba in Isabel. Other typical questions about species included, “how long does it takes before a turtle is mature/an adult?” and “is king fish a fast growing species?”

While conservation and management were not new concepts, as some communities have been practising traditional restrictions on fishing in their areas, the awareness conducted on CBFM triggered more questions about the processes they need to take to practise CBFM in their coastal areas. For example, one commonly asked question was, “what are the processes/steps of conserving a particular site?”

Questions were also raised on complying with fisheries regulations and policies; for example, one important question asked was: “We have the national fisheries laws, but why did the fisheries team do not come earlier to inform us? It has been there since 2015–2018 but only now your team came

down to the communities to do awareness about these important laws. Why?”

Frequently asked questions in Malaita

In Malaita Province, a total of 78 questions were recorded in face-to-face activities involving MFMR and/or WorldFish staff and communities. The questions came from 23 communities⁶ in Malaita.

The two most common types of questions asked in Malaita were on CBRM and fisheries regulations and compliance (Figure 4). As mentioned above, widespread awareness of CBRM in Malaita has led to recognition of the need to manage their declining resources. Hence, there were more questions and EOIs focused on starting up or strengthening CBFM. As for compliance and regulations, questions were raised around issues such as why is MFMR enforcing bans on some sea resources such as *beche-de-mer*. Recognising the decline of some coastal resources, questions on compliance/regulations often sought to investigate the effectiveness of plans to manage their resources. In addition, communities in Malaita have experienced land and aquatic system degradation caused by logging activities, leading to more questions being raised around compliance. For example, there was a question raised in Foubaba village asking: “Why allow bad activities like logging or Bina harbour cannery to enter our land? We are not aware of their negative impacts.”

The questions on marine species were closely linked to fish aggregating devices (FADs), which have been popular in Malaita as an alternative fishing site to areas closed to fish-

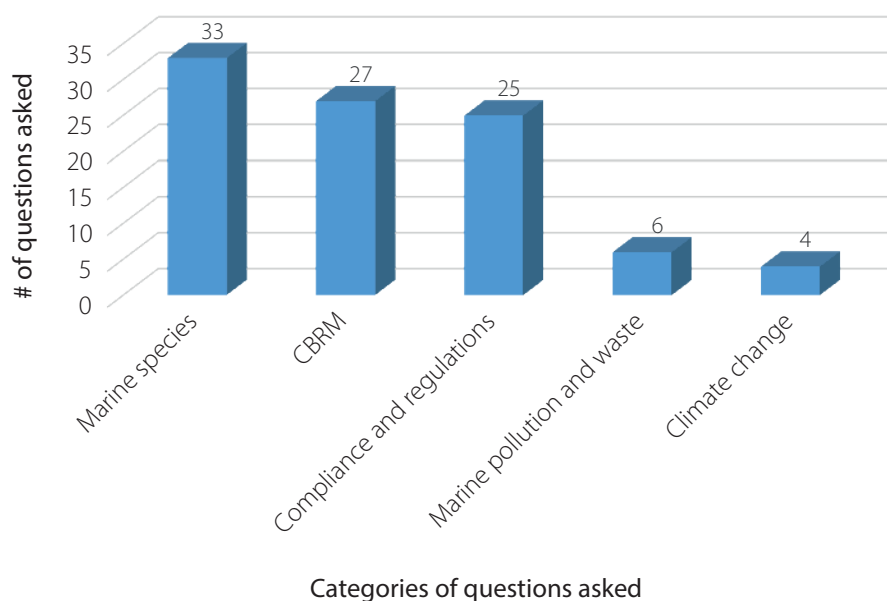


Figure 3. Frequently asked questions in Isabel Province (n = 95)

⁵ Oroba, Phutukhora, Poro, Lingho, Huali, Hukamoto, Rasa, Tanade, Horara, Nagholau, Ole, Loghutu and Sigana.

⁶ Arabala, Radesifolomae, Lilisiana, Ambu, Dala South, Buma, Gwaunaru'u, Fiu, Talakali, Dala North, Bu'usi, Kwa'a/Oneone, Foubaba, Anoano, Gwale, Buma Station, Kwabu, Sinafolo, Sinasu, To'a'e, Bina, Kwalitutu and Takwasae.

ing under CBFM. FADs play an important role in managing resources in that they make fishing activities easier while at the same time contributing to resource management and income. For example, in North Malaita, tuna catch from FADs is usually sold for income, and reef fish harvested from reefs is for family consumption. Similarly, in North Malaita questions related to corals were raised as these are often harvested for powder, commonly known as lime, for betel nut chewing and for building sea walls. They are also cleared to facilitate passage for canoes and used for building artificial islands. Another interesting marine species question commonly asked in the provinces, including Malaita, is why does MFMR enforce a law to protect crocodiles and sharks as they are dangerous species that can threaten people at times.

CBFM is becoming an important approach for various communities in Malaita. Based on unpublished trip reports from various visits to 76 communities in north, south, east, central and western regions of Malaita from 2020 to 2022, these communities reported experiencing a rapid decline in marine resources. They also reported that traditional management of reefs had been carried out in the past but had not been enforced for a while.⁷ These communities indicated that the CBFM awareness programme offered more insight into the status of their marine environment and resources, and underlined the urgency for them to undertake CBFM. Others reported that communities who fail to implement CBFM will face adverse consequences in the future.

Several questions on regulations and compliance were around the effectiveness of enforcement of laws and regulations on fisheries. CBFM in some contexts is enforced by community members themselves, but in sites of diversity and migration, cooperation across groups may be less attainable, and there is always the risk a community manages its resources well but is subject to poaching from outsiders. In such cases, police or fisheries staff may be called to back up enforcement. Therefore, the “shadow of the law”, the effects of laws on human behaviour based on expectations the law will be enforced, can support CBFM compliance. If signals are sent that CBFM is backed up by local authorities in cases of infringement, this can have a deterrent effect, although responses can vary depending on the individuals and institutions involved (Birks 2010).

Frequently asked questions in Temotu

A total of 77 questions were recorded in Temotu Province. The questions came from 13 communities⁸ in this province.

In Temotu, the most common type of question asked was around compliance with fisheries laws and regulations, as shown in Figure 5. Most of the questions sought to investigate the type of penalties that could be imposed if people breached the regulations imposed by MFMR, and how they could report them to the Provincial Fisheries Office. Questions were also raised on why MFMR enforced species-specific regula-

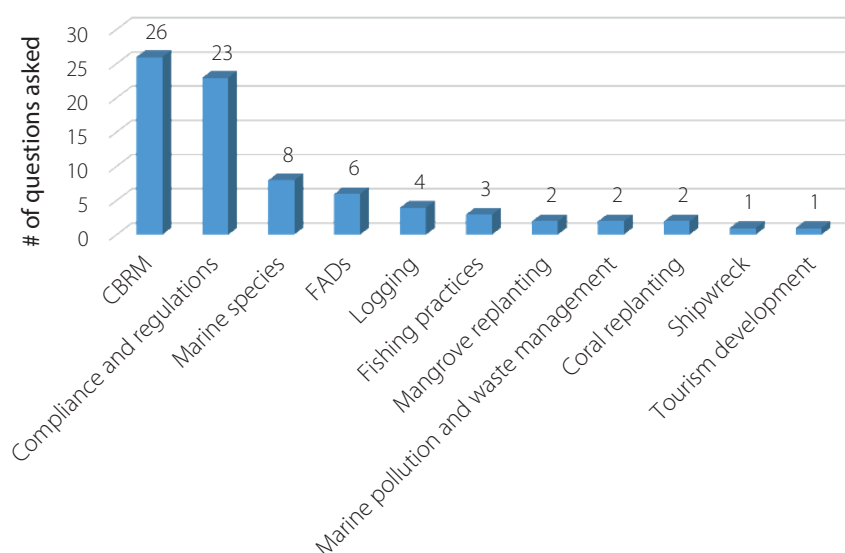


Figure 4. Frequently asked questions in Malaita Province (n = 78)

⁷ According to reports given to PFO and WorldFish, some indicated over a decade, while others said more than a decade.

⁸ Nea, Lavaka, Buma, Emua, Murivai, Peu, Lale, Vano, Nukapu, Matema, Nifiloli, Pileni and Ngauwa.

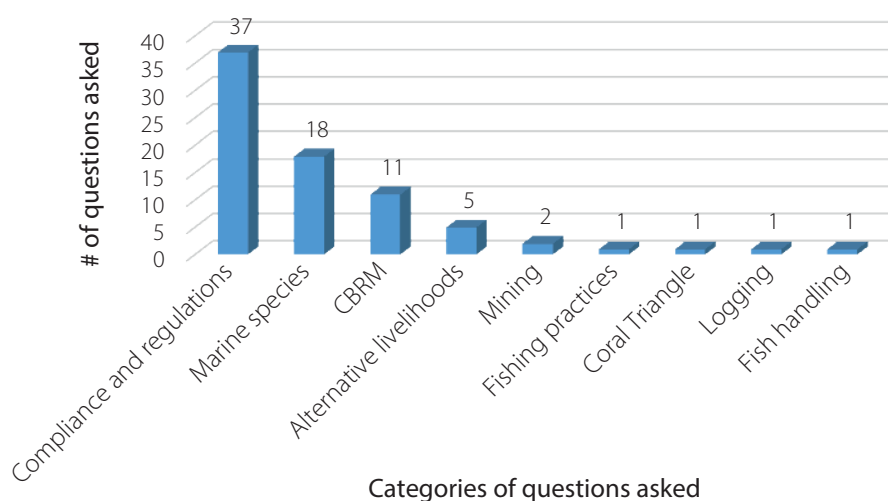


Figure 5. Frequently asked questions in Temotu (n = 77)

tions. For example, one question asked was: “Sharks and crocodiles are natural killers, why are the fisheries regulations restricting people from harvesting them?” Questions regarding breach of marine regulations were asked in all of the communities in Temotu Province, similar to Malaita Province, reflecting people’s concern with enforcement and also the lack of reach of information about relevant laws.

The other set of common questions asked was on marine species. Most communities asked questions on how marine species reproduce and the roles they play in the marine ecosystem. The marine species asked about included clamshell, *beche-de-mer*, fish, shark, crocodile and seaweed. These marine species are the main source of income for households, and at the same time many are also used for household consumption. For example, in some villages in Vanikoro, women are often involved in the drying of clamshells as this is the only source of income. Given that it can take several days to travel by ship from Temotu to the nation’s capital Honiara, the drying of clamshell and fish by women means they can make products that can then be taken to Honiara for sale.

CBRM is the third area most often asked about. This is because most communities in Temotu Province received CBFM information in 2022 compared to little reach in previous years. Also, based on information provided by the Lata-based PFO, almost all communities in the province are still practising traditional management of their reefs.

Interestingly, a few questions were asked about the possibility of providing livelihood alternatives for communities whilst they manage their marine resources. For example, Ngauwa community in Reef Islands raised questions on the possibility of accessing projects to help them venture into seaweed

farming. In addition, communities in Vanikoro and Ngauwa in the Reef Islands requested fish handling training to assist with improving existing methods of food processing.

Frequently asked questions in Solomon Islands

Figure 6 shows the commonly asked questions from Isabel, Malaita, Temotu and Western Province. In Western Province only eight questions were recorded. Due to the limited number of questions gathered from Western Province, and because they came from only one community, comparisons with other provinces are not possible.

In summary, of all the frequently asked questions from the four provinces, the most common related to compliance and regulations, followed by CBFM and marine species. These three top categories indicate that communities have an interest in the importance of managing coastal resources, as well as the consequences of breaching the regulations. In line with that, communities have some understanding of the types of marine species and their importance, as well as gaps in their knowledge about species.

Within the marine pollution and waste management category of questions were concerns about rubbish or chemical disposal into the sea and queries regarding laws to control waste disposal into the sea. Some of the marine pollution questions covered the impacts of logging activities on coastal habitats, such as through increased sediment runoff into waterways and coastal areas, and the penalties that could be implemented to minimise such harmful impacts on marine life. The ranking of pollution and waste management as fourth most common question category indicates this area is of growing concern for several communities.

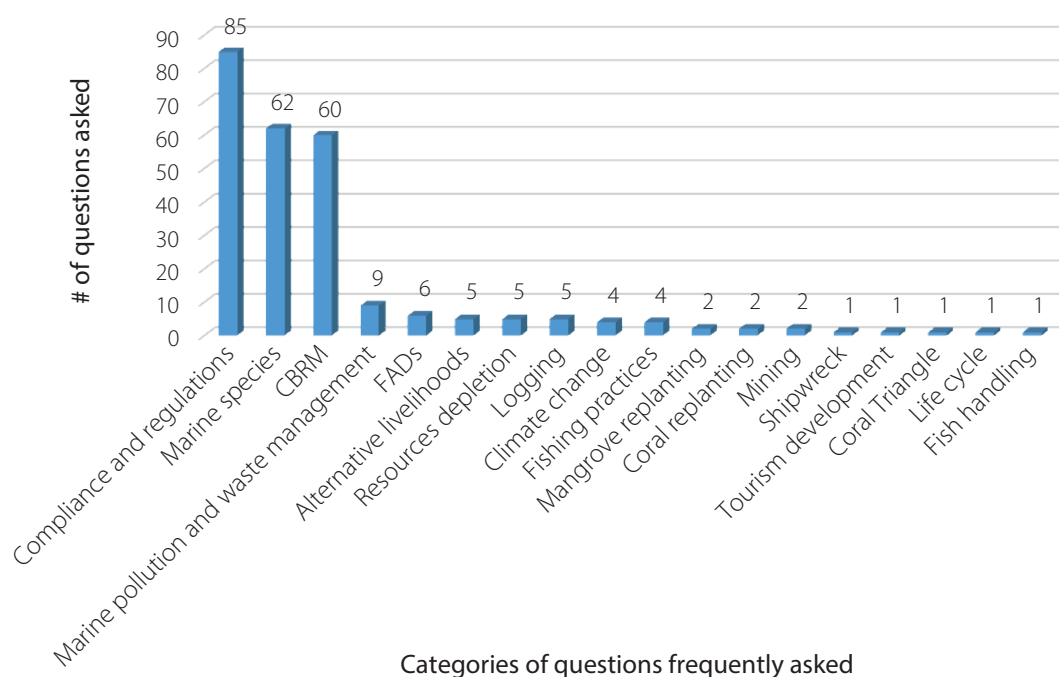


Figure 6. Overall frequently asked questions in Solomon Islands (n = 258)

In the past, communities have received assistance with FADs to help catch fish while protecting their coastal areas. Most questions regarding FADs came from Malaita and focused on whether their communities could continue to be provided with FADs as an alternative while they manage fish in their coastal area.

Questions on alternative livelihoods were raised to obtain information on options such as seaweed, pearl farming and fish handling training to support income as well as food security practices as many communities are located far from markets to sell their marine products. An example of this type of question is: “Are there any alternative projects like seaweed, pearl farming that will support communities to earn income to support their families?”

Questions on climate change were raised in Malaita. There is a realisation that climate change is slowly becoming a threat to coastlines and the habitats that exist within them. Hence, questions were raised seeking alternatives to assist with addressing climate change, for example: “Is there any activity the Ministry can provide support for against climate change so that it doesn’t really affect our corals and mangroves?”

Fishing practice questions were raised to get clarification on why certain methods of fishing have been restricted, for example: “The use of magnet net is the main fishing net used

in most of the communities visited. It is the most efficient fishing method that generates income for families. Why is the government banning its use?” In addition, questions were raised seeking to gain an insight into available sustainable fishing methods.

Questions concerning mangrove and coral replanting were raised following the realisation that mangroves and corals have started to decline in some areas due to mangroves being cut down for firewood and for building houses. Thus, community members asked whether training on mangrove and coral replanting could be provided to assist with managing coral and mangrove restoration in their area. Similar to logging impacts, questions were raised concerning the threats of mining in the sea and how mining impacts the sea and ocean.

Further questions included: the potential fine that could be imposed on the owner of a vessel that accidentally wrecked in a protected area; the development process that should be taken into account when developing a tourism site (in Malaita); and what the Coral Triangle Initiative (CTI) is as this was included in the CBFM presentation.⁹

As shown in Figure 6, the most frequently asked questions concerned compliance and regulations. Table 2 lists the most common types of questions asked about compliance and regulations.

⁹ CTI was mentioned by PFOs to explain that Solomon Islands has high marine biodiversity and thus is part of the CTI to look after our marine resources and fisheries.

Table 2. Sample of questions commonly asked on compliance and regulations

Commonly asked questions about compliance and regulations
What is the recommended harvesting size for trochus shell?
If coastal marine environments are damaged by logging pollution, do fisheries have laws to impose penalties?
How effective is the law enforcement regarding the catch on sea turtles since poaching is still common in some communities?
What kind of species monitoring do you do to ensure that there is compliance of the Fisheries Regulation and how effective is it? How can monitoring be done for the prohibited species? E.g. turtle
What do we do so international ban on crocodile harvesting will be open?
Why is MFMR not doing anything to arrest locals and Asians that are involved in the illegal harvest and trading of bêche-de-mer?
Is the fisheries regulation enforced effectively; if someone harvests and breaks the regulation, will they be charged for real?
In the fisheries regulation presentation, why are there two types of punishment for an offender, either the offender pays the fine and or goes to prison?
Crocodiles are wild animals that harm people. Why is our government still regulating crocodiles?

The types of marine species most commonly asked about in the question sessions included crocodiles, beche-de-mer, sharks, corals and clamshells.

Table 3. Types of marine species commonly asked about

Type of species commonly asked about	Ranking	Reasons for asking
Crocodile	1	Threat to some communities (crocodile attack)
Beche-de-mer	1	Source of income to many communities (highly valuable in sales)
Shark	1	Threat to some communities (shark attack)
Coral	2	Concern about protecting corals
Clamshell	2	Source of income to some communities (highly valuable in sales)

Below is a sample of questions asked about CBFM and how to implement it at the community level. Often community members needed support to think through how to organise CBFM and develop their plans and activities.

Table 4. Sample of questions asked about CBFM

Commonly asked questions about CBFM
What are the processes/steps of conserving a particular site?
What is the requirement for CBFM in the community?
Conservation work should be considered all around our island. How can we apply for management activities so that we can control our harvest?
We have tried to do conservation in the past but it was unsuccessful, how do we start or where do we go for further support?
Fish is a migratory species, what assurances does a taboo area give to communities in the sense that fish will always be there in taboo areas?
Are there any alternative livelihoods for communities who want to pursue CBFM?
We communities have traditional ecological knowledge (TEK) and traditional fishing practices. Is there any legal process to support communities to deal with poachers while we are implementing management?
Do communities need to sit together to talk about managing their resources?
For CBFM, how can people in communities work together so people can respect our custom taboo that we enforce?
CBFM covers which part of sea?

Main considerations resulting from analysis of EOIs and frequently asked questions

Importance of (upwards) communication channels for support

Communities are able to make requests to MFMR for support by way of EOIs to help them manage their resources, and most EOIs submitted by communities request support relating to CBFM. In addition to the tangible interventions and activities that have come from the roll out of the CBFM programme, a significant impact is the elevated recognition of communities' responsibility as resource owners of their coastal marine resources. There are many cases of people using resources without providing sufficient time or opportunity for recovery or regeneration, ultimately resulting in a decline of resources. In some cases, communities have experienced decreasing stocks but are unsure of the causes of the decline and what actions should be taken.

Importance of addressing knowledge and information gaps

The frequently asked questions by communities reveal a clear gap in local understanding of management and marine species, as well as policies by the national government to regulate marine resources. Understanding patterns in the frequently asked questions provides guidance on ways forward to improve the design of CBFM activities, which could range from actions that ensure communities are empowered to implement CBFM to actions that ensure basic knowledge on topics such as spawning, rubbish disposal, importance of habitats and the role of key species such as mangrove trees in ecosystems (Laumani M. 2023, personal communication¹⁰). While communities are knowledge holders, it is also key that adequate knowledge and information feeds into local management decision-making. Understanding ecology and biology can help communities consider measures in their management plans, such as when to open and close their managed areas as a means to, for example, ensure spawning activities are not disturbed.

Clarifying pathways to improve compliance

In terms of compliance with regulations, our findings reveal that communities have less knowledge on the policies that are regulated by the government to safeguard marine resources. Most often, communities practise CBFM with little to no knowledge of national policies and legislation, such as the *Fisheries Management Act 2015*. The findings on the frequently asked questions on compliance and regulations highlight to policy makers and MFMR the critical need to bring policies to the grassroots level through CBFM.

Recognising and addressing possible reluctance to CBFM

Overall, our findings reveal high motivation amongst communities to pursue CBFM, with some already implementing it. However, there also exists persisting doubts among some communities about whether CBFM is effective. While some communities were initially prompted to implement CBFM after awareness sessions, there was some reluctance to follow through due to local scepticism about whether compliance could be achieved in remote communities due to distance from responsible government agencies. Another concern was that restrictive measures, perhaps necessary for recovery of declining species stocks, would impinge on their primary source of livelihood. Thus, introducing the idea of CBFM can be a challenge if no consideration is given to livelihood alternatives.

Conclusions

This study identified significant knowledge gaps in indigenous communities and also evidence of their interest in CBFM. Data on EOIs indicate that where CBFM awareness is conducted, communities often request follow up support in relation to CBFM, such as further awareness, training and support to set up local management of coastal areas. EOIs more or less follow investment by government and stakeholders in awareness initiatives. Malaita, a province in which multiple CBFM-related projects are being implemented, recorded high levels of interest and engagement by communities, although other factors such as food insecurity and scarcity also likely influenced interest.

Data on questions asked in face-to-face activities were collected in some communities, with the data sample involving mostly communities that have never experienced CBFM support before. These data reveal gaps in both CBFM and enforcement-related policies that exist at the national level but have never reached the grassroots level and how this impacts local knowledge. Commonly asked questions were around how to implement fisheries management, life cycles and other key features of marine species, and laws and regulations (their rationale and details). The latter two categories of questions were often interrelated; there were many questions about banned species and overharvested species. There was also some questioning of who should have rights and jurisdictions over species as CBFM policy gives rights to coastal communities to manage their resources. In doing so, however, they must operate within the bounds of law that prohibit harvesting of crocodiles and assert other species-specific rules. The commonality of questions aimed at understanding fisheries laws and regulations indicates fisheries awareness has not reached a level desirable for compliance, and enforcement may lag as a result.

¹⁰ Personal conversation with M. Laumani, CBFM Officer, Ministry of Fisheries and Marine Resources, 7 August 2023.

While there is more attention paid to indigenous knowledge in fisheries, there is a lack of research into what people already know, do not know and need to know in order to be agents of sustainable management of coastal resources. It is hoped that this research will prompt others to collect and analyse questions of concern held by indigenous people and, through this process, identify critical gaps in knowledge and respond in a way that can build CBFM across Solomon Islands.

Acknowledgements

We thank the following contributors who all participated in data collection and who invaluable contributed to this paper: Faye Siot, Margareth Batalofo, Meshach Sukulu, Priscilla Pitakaka, Mark Seda, Alfred Davidson and Malakia Malasy. The research was made possible with support from the Australian government, through an Australian Centre for International Agriculture Research funded project (ACIAR FIS-2020-172).

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