

CATCH MONITORING MANUAL FOR CBFM IN THE PACIFIC COMMUNITY

MODULE A *Pathways Project Technical Manual for Catch Monitors*

Version 1.0, September 2021

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ACKNOWLEDGEMENTS

ANCORS

We are grateful to Bradley Moore for advice in developing the sampling protocols, and Andrew Halford and colleagues at SPC for discussion about the sampling challenges confronting those brave enough to attempt to characterize community fisheries in the Pacific region.

The survey protocols and manuals were developed by the following project staff members:

Kiribati: Beia Nikiari, Tarateiti Uriam, Toaiti Vanguna, Leslie Tearawabwebwe, Iutita Karekenatu, Teitikai Kamaie, Matereti Buren, Rutiana Kinonoua, Kobaia Teitiaki, Rooti Tioti, Iakobwa Ierutia, Tauai Komeri, Manibua Rota, Tongo Tiairon, Tebwii Tererei

Vanuatu: Abel Sami, Pita Neihapi, Lucy Joy, Douglas Koran, Ada Sokach, Vasemaca Malverus, Regina Ephraim.

ANCORS: Brooke Campbell, Owen Li, Neil Andrew, Aurelie Delisle, Hampus Eriksson and Dirk Steenbergen.

FUNDING

The Pathways project was supported by the Australian Government through the Australian Centre for International Agricultural Research (ACIAR) project FIS/2016/300.

KIRIBATI

We are grateful to the communities of Kuuma and Tanimaiaki in Butaritari island; Ribono in Abaiang island; Tabonibara in North Tarawa and Autukia in Nonouti island for their time in supporting the co-design, piloting, refining the monitoring tools as well as their assistance during monitoring activities in Kiribati. We thank the Director of Coastal Fisheries and staff of Coastal Fisheries Division at MFMRD for providing feedback on the development of the monitoring tool and supporting its implementation. We would like to especially thank the Fisheries Assistant trainees at Coastal Fisheries Division for their active involvement in data collection and their discussion on improvements in the delivery of the tool.

VANUATU

We are grateful to the communities of Hog Harbour, Peskarus, Takara, Ikaikau, and Kwamera for their participation in co-designing, piloting, and refining the monitoring tools. We thank the Director and staff of VFD for supporting the development of the monitoring tool. Specifically, the contribution of the fisheries observation division at VFD was crucial in providing enumerators to the CBFM monitoring program, not only for data collection but also for their technical inputs and feedback that helped develop the tools and program.

Manual citation: UOW (2021). Catch Monitoring Manual for CBFM in the Pacific Region. Module B: Training Workshop Manual. Australian National Centre for Ocean Resources and Security, University of Wollongong, Australia.

The manuals can be downloaded from SPC Coastal and Oceanic Fisheries Programmes Digital Library:

fame1.spc.int/en/fame-digital-library

Manual A: purl.org/spc/digilib/doc/chkpw

Manual B: purl.org/spc/digilib/doc/4pfz6

OTHER CREDITS

Cover images: Lantern fishing, Solomon Islands. Wade Fairley.

Fish illustrations: Boris Colas, Pacific Community (SPC).

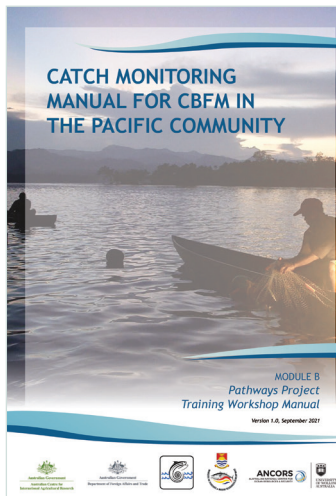
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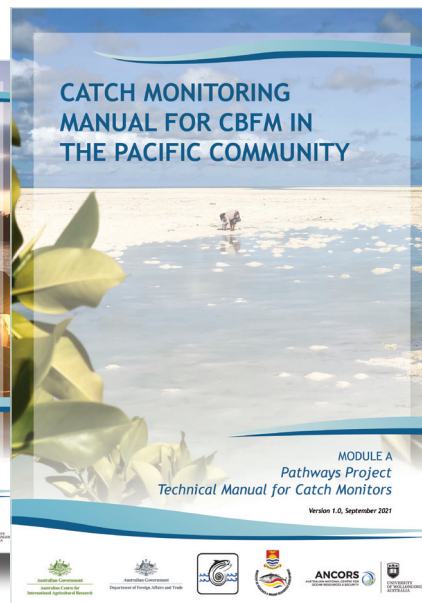
Report design and remaining graphics: Eleanor McNeill.

INTRODUCTION TO THE MANUAL

Technical Manual for Catch Monitors



Manual B: Training Manual



Manual A: Technical Manual

This technical manual is a **step-by-step guide** for **catch monitors** who are collecting coastal fisheries catch data **in communities** in the Pacific islands region in support of community-based fisheries management (CBFM) activities and/or plans.

It assumes that catch monitors are part of a larger CBFM team that either is a part of, or is in direct collaboration with, national government.

This manual therefore also serves as a **process reference document** for **catch monitoring coordinators** or **other supervising staff**.

The **catch monitoring approach described in this manual** is based on a pilot catch monitoring programme undertaken in a number of communities in Vanuatu and Kiribati as part of the Australian government-funded Pathways project.

The described approach focuses on collecting data for small-scale coastal fisheries catches that are harvested and landed by small vessels or by hand in communities rather than taken directly to centralised markets **using the tools developed by the Pathways project**:

- **Catch monitoring data collection manuals (above)**
- **Catch survey forms (right)**
- **Fishing context survey forms (right)**

The approach simplifies some standard creel survey data collection processes to reduce the time burden placed on fishers and invertebrate collectors during data collection at community landing sites. It also removes the pressure of accurate species identification from the catch monitor on the beach.

Catch Survey (Quantative) and Fishing Context Survey (Qualitative)

This manual contains enough detail that CBFM teams may choose to start new catch monitoring activities using the described data collection and 'troubleshooting' approaches. However, the manual is also intended to be flexible enough that teams may choose to use all or part of the approach, or to modify it based on a CBFM team's needs, objectives, and resources in a given location. It represents just one of many possible options for data collection that CBFM teams and/or government agencies may choose to put into place.

This manual guides paper-based data collection approaches in the field; guidance for using tablets or other electronic devices to collect catch monitoring data is not addressed in this version.

This manual may be updated from time-to-time as new learnings emerge.

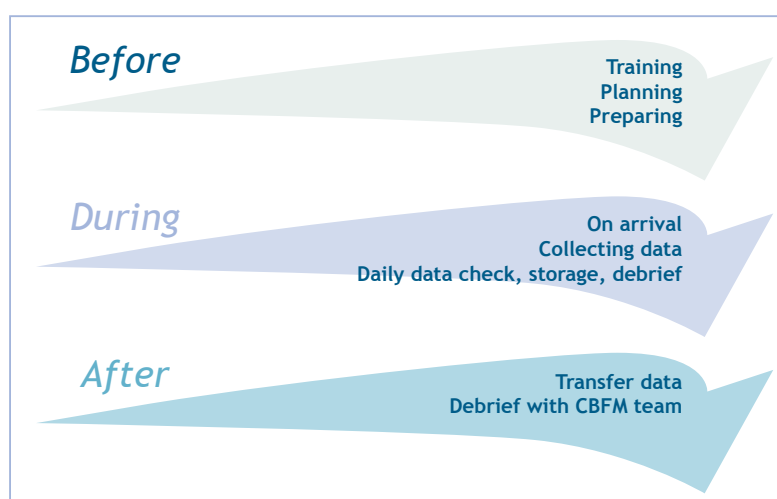


Figure 1. Stages of catch monitoring data collection

Pathways Catch Monitoring Programme

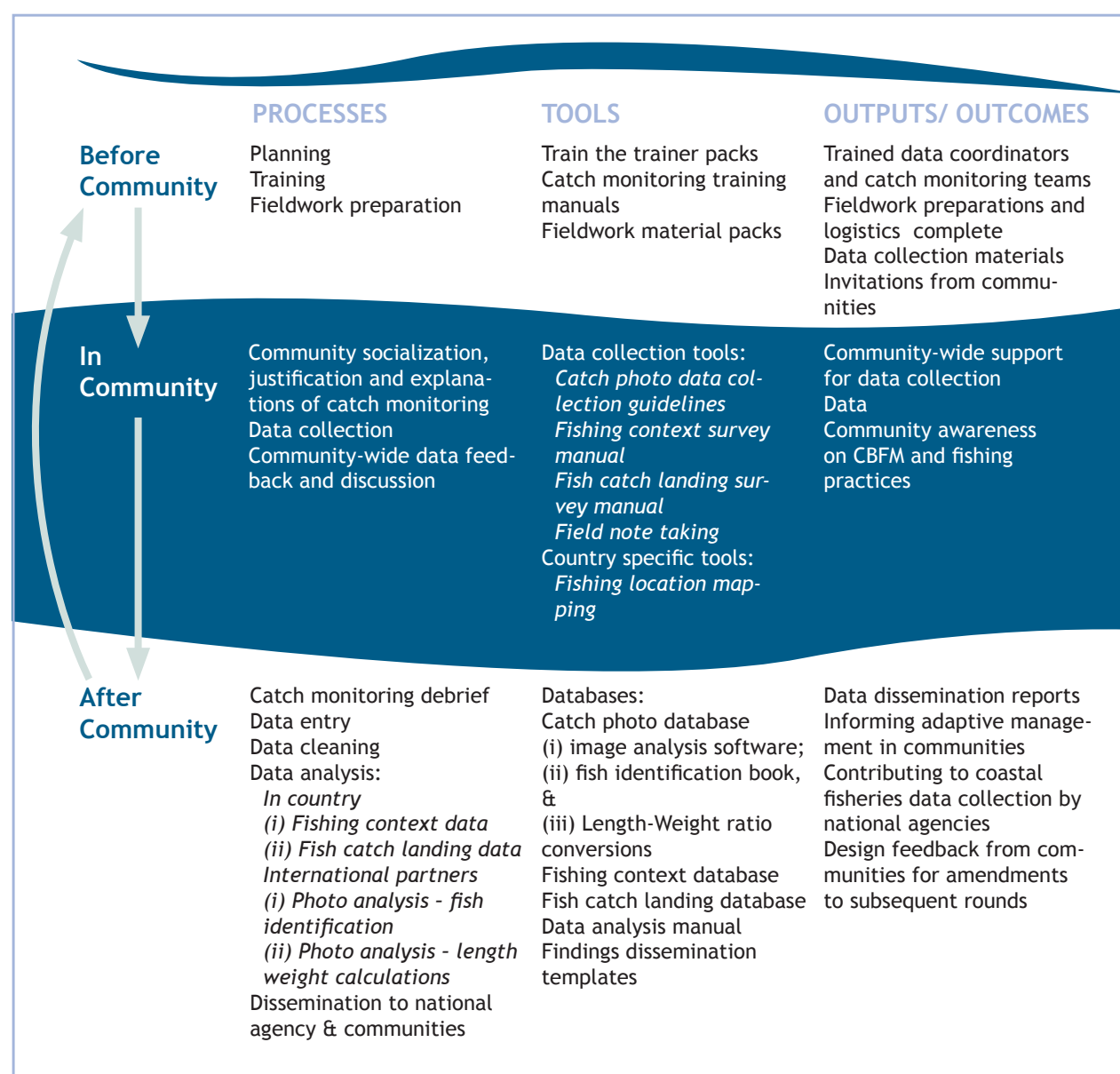


Figure 2. Pathways catch monitoring programme



*This photograph was taken January 2021 in Kuma, Butaritari Island, Kiribati, as part of Round 3 of the Pathways Catch Monitoring Programme. Usually these fish (*Herklotsichthys quadrimaculatus* a.k.a. Goldspot Herring) are kept for bait rather than consumed.*

“[The catch monitors] really care a lot, [thus the aesthetic arrangement of this photo].

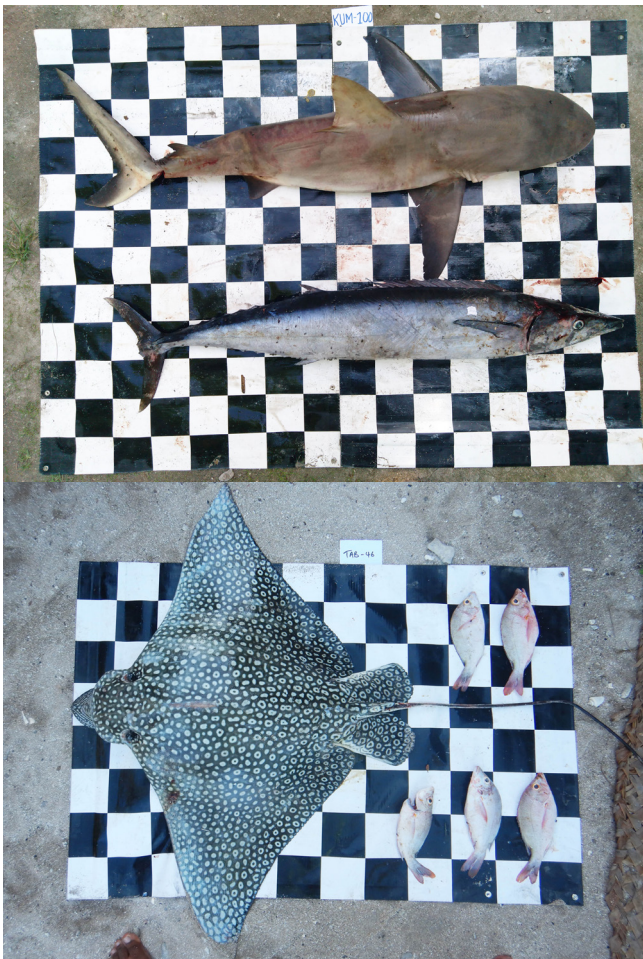
We asked people to please lay the fish out as neatly as possible so that we could measure them as accurately as possible using the 10x10cm grids as a reference.

In Kiribati, they really take it to heart (one photo has a catch of crabs laid out to include the legs that those crabs had shed, with each leg adjacent to the crab that had lost it).

Sometimes it’s a village affair, and the youth help out laying the catches out on the mats (it’s actually an informal way to involve the youth in the local CBFM plans and catch monitoring, especially in Butaritari).”

Capturing Diversity

The catch monitoring programme this manual supports has shown it is able to capture the incredible diversity of the fisheries depended upon by the women, children, youth and men of coastal communities in the Pacific.



Eagle Ray alongside shark and wahoo:

Sometimes, large Elasmobranchs are also recorded. Seen here are a Spotted Eagle Ray (*Aetobatus narinari*) and Grey Reef Shark (*Carcharhinus amblyrhynchos*).



Tremendous diversity:

This one catch photo of 42 fish has individuals from 17 species representing 7 families (*Acanthuridae*, *Holocentridae*, *Labridae*, *Lethrinidae*, *Mullidae*, *Scaridae* and *Serranidae*).



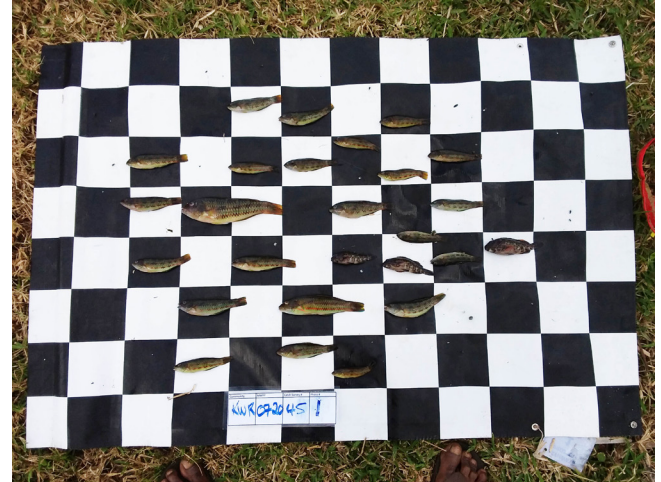
Bare mat:

The fishers are also supportive of allowing that a photo of a bare mat will be recorded from time to time. Zero catch is important if we are to help communities gauge the relative success of their fishing efforts and track that over time.



Diversity of invertebrate harvesting strategies:

Invertebrates of many species are targeted or harvested opportunistically along with finfish. When invertebrates are targeted, the catch is typically much larger, with hundreds of individuals being harvested at a time. When invertebrates are targeted opportunistically, we typically see fewer than ten being harvested at any one time.



Small wrasse alongside large deepwater haul:

The fisheries used by fishers in the communities we visit are incredibly diverse. From inshore fisheries for small Purple Surge Wrasse (*Thalassoma purpurum*) and Stocky Hawkfish (*Cirrhitus pinnulatus*) not exceeding 20cm, to offshore fisheries for deepwater snapper species (*Etelis* sp.) upwards of 90cm in length.

Why monitor catches?

Community-level catch monitoring gives community members, CBFM teams, and government a better understanding of fishing and invertebrate collecting patterns and trends in communities. Having this information helps with management plan design, and it also gives feedback to communities about:

- Whether the management actions they have taken are resulting in the desired fisheries outcomes; and
- Whether changes might need to be made to management plan actions based on findings.

Community-level catch monitoring also helps national governments better understand local resource pressures and support needs, as well as how coastal management activities may align with national strategies.

Finally, catch data also helps CBFM teams to provide more targeted feedback and assistance to these communities.

What kinds of data to collect?

The kinds of data that catch monitoring programmes focus on collecting depends on the questions that communities, CBFM teams, and government want to know the answers to.

The approach described in this document prioritises answering questions that help to establish a stronger understanding of regular fishing and invertebrate collecting trends in communities that have implemented, or are about to implement, a CBFM management plan.

This manual describes how to collect data using four data collection tools:

1. A catch survey;
2. A fishing context survey;
3. Photos of catch; and,
4. Catch monitor field notes.

The data collected using these tools helps answer useful questions like:

- Which species of fish/invertebrates are people catching the most, using which gear?
- Are there some species that might need more, or different, management actions?
- Are community members generally satisfied with management actions and complying with plan rules?

The importance of catch monitors

As data collectors, catch monitors have one of the most important jobs in a catch monitoring programme. They have the responsibility to make sure that collected catch data is of good quality.

What is good quality data?

Good quality data is complete, clear, accurate and consistent.

If collected data are not good quality, data entry and data analysis become difficult to do and results may be inaccurate. In turn, this means that CBFM teams cannot help communities to make decisions about their management plans with confidence. Data collectors who collect good quality data are therefore vital to the success of catch monitoring programmes.

BEFORE DATA COLLECTION IN COMMUNITIES

Before

Training
Planning
Preparing

A lot of training, planning and preparation needs to happen before data collection survey trips to communities.

This section briefly covers only planning and preparation activities that directly relate to data collection in communities. Training is covered in another manual, as explained below.

KEY DEFINITION

Survey trip: The multi-week period of time where catch monitors travel to a particular community or group of communities to collect daily fisheries catch data.

Catch monitor training

This manual assumes that catch monitors have already received their basic catch monitor training.

See Module A: Catch monitoring training manual for training details.

Data collection planning

This section assumes that survey trip planning logistics like budget, travel, transport, and accommodation have already been planned.

It also assumes that communities have already been contacted by CBFM teams to organise and confirm survey trip dates.

Before heading into communities to collect data, catch monitors should work with the wider CBFM team to plan how data collection will take place in each community.

Data collection strategies may differ based on the number of catch monitors available for a given survey trip.

For example, if multiple catch monitors are traveling as a group to the same community, teams will need to coordinate how surveys will be divided between catch monitors, and/or whether data collection will occur in pairs.

It may also be a good strategy for catch monitors to either divide or pair up by gender.

For example, female fishers and invertebrate collectors may feel more comfortable talking to female catch monitors for personal or cultural reasons. In this case, data collection

would be most effective with either one or two female catch monitors, or with one male and one female catch monitor. The reverse may be true for male fishers and invertebrate collectors, who may feel more comfortable talking to a male catch monitor.

Data collection strategies may also differ by community.

For example, communities may tell the CBFM team that different groups of fishers and invertebrate collectors land their catch at different times of day and in different locations within that community. Based on this information, catch monitors may organise to be at different locations in the community at different times so that a good sample of catch practices are captured.

Preparing for survey trips

Before leaving for communities, catch monitors should make sure that all of the materials they need for the survey trip are gathered, organised and, if necessary, labelled.

Catch photo ID labels can be partly pre-filled. *For example*, with the month, year, and community name.

Catch monitors should make sure that they have spares and backups of items that may be difficult or impossible to replace once they are in communities.

For example, pens, pencils, batteries, chargers and battery packs.

See the image below for an example of numbered and labelled materials that teams in Vanuatu have brought with them on catch monitoring data collection trips.



Image: An example of numbered and labelled materials that teams in Vanuatu have brought with them on catch monitoring data collection trips. Photo: Ada Sokach, 2019.

DEDICATED BAG OR BACKPACK FOR CARRYING SUPPLIES:

- Fish mat with 10cm2 grid AND/OR plastic tarpaulin(s)
- A ruler OR an item with a defined scale to put in photos
- Catch photo label for Fish Mat
- Pens and/or pencil with eraser and sharpener or spare lead
- Paper survey forms: ~100 copies per form for each community (assuming no printer in communities)
- Field notes form or notebook
- Clipboard
- Something to store survey forms in so they stay dry and organised
- Tablet or camera with chargers and battery backup
- For taking photos
- No electronic data collection application for now
- Credit for phone/internet to stay in contact with CBFM team in the office
- Flashlight/torch and spare batteries
- Stapler and staples (optional)
- Small umbrella and/or raincoat (optional)

A checklist for materials to bring is in Appendix A.

DURING DATA COLLECTION IN COMMUNITIES

During

On arrival
Collecting data
Daily data check, storage, debrief

On arrival in communities, catch monitors have a few steps to complete before starting data collection. These steps include:

- Engaging with members of the community;
- Updating data collection plans based on new information; and,
- Taking the time to re-familiarise yourself with the survey forms that you are about to use

On arrival in communities

On arrival in communities, one or more members of the catch monitoring team should notify community representatives that they have arrived. They may also wish to, or be requested to, give a short introductory presentation to members of the community about:

- Why catch monitors are there in the community;
- For how long;
- What data they would like to collect and who they want to survey; and
- Why data collection activities are of value to the community.

These presentations also provide an opportunity for community members to ask questions, raise concerns, or provide suggestions to catch monitors. Catch monitors should be prepared to answer questions and respond to concerns and suggestions.

If catch monitors are in a community on a repeat visit, these presentations also provide an opportunity to report back to communities about past trips. Reporting back activities are not covered in this manual.

This section briefly covers engaging with community members prior to beginning data collection, followed by detailed instructions on how to fill out survey forms, including troubleshooting and key definitions.

It also covers in detail how to take catch photos, with some troubleshooting hints, as well as taking field notes to support and help explain survey data.

Following this direct engagement with communities, new information may be revealed to catch monitoring teams that can help teams to refine data collection strategies for that particular community.

For example, a team may learn that fish are landed most often at a particular beach so they plan to make sure that there is someone collecting data at that location all day.

or

A team may learn that there is a temporary fishing tabu in place for a week while they are in communities but that shellfish collection is still permitted. With this information, they know to focus their efforts on shellfish collectors that week and to make a note of this special event on their survey forms.

Before beginning data collection, it is also useful to coordinate with your fellow catch monitors one more time about the distribution of numbered surveys among different catch monitors in order to make sure no surveys share the same ID numbers or codes.

Collecting data in communities

Catch monitors are responsible for collecting catch data from as many fishers and invertebrate collectors as they can during a survey trip in a community. Data are collected using the following tools:

- **A catch survey**, which focuses on surveying fishers/collectors as they come in from the beach or from the sea with their catch;
- **A camera and a gridded fish mat or tarpaulin** with a ruler or item with a known scale/size;
- **A fishing context survey**, which can be

asked at the same time as the catch survey or at a different time of the day, depending on the time that the fisher/collector has available; and

- Catch monitor **field notes**.

The following sections explain in detail how to collect data using these tools. These sections are written as if to explain to a catch monitor directly (in the 'first person').

For further resources on data collection training, also refer to **Module A: Catch monitoring training manual**.

Approaching people to collect data

When you first approach a fisher and/or invertebrate collector to collect data from them about their catch, **before any data collection takes place**, you must *first explain*:

- Why you would like to collect data;
- Briefly, what data you would like to collect;
- Why the voluntary participation of fishers and invertebrate collectors is an important part of the success of the community fisheries management plan and of understanding more about fishing activities in their community; and
- That the name of the fisher/collector will not be used in any analysis or reporting.

You must *also* answer any questions that fishers/collectors have to their satisfaction before you begin the survey.

After this step, the fisher or collector **must give their consent to participate** in the survey before data collection begins.

If they do not agree to participate, you must respect their choice and move on to another fisher/collector. Do not try to force them to participate.

How to fill out the catch survey form

There are many examples of different catch survey forms around the Pacific Islands region. While these forms share common features, they have differences too. This is because they are designed to answer slightly different questions.

The catch survey described in this manual chooses to focus on fish and invertebrates landed in communities only. It chooses not to collect length data, or to focus on answering detailed questions about habitats, fishing locations, economic costs, or markets.

This section goes through the catch survey in sections and explains how to fill it out in detail.

The *same* fisher/collector can be surveyed *multiple times* in the same survey trip using the **catch survey**.

Any fisher/collector who has their **catch surveyed (this section) and photographed (p.17)** should also be asked to answer the **fishing context survey (p21)**.

The full survey tool is found in Appendix B.

MOST IMPORTANTLY:

Fill out all spots on the catch survey form.

There should be no blank spaces, except in spaces where comments are optional.

Write 'N/A' if 'not applicable'.

If 'other' is the selected option, always write what 'other' means.

If you're not sure about something or have noticed something unusual, write it in the comments.

There is **no such thing as 'too much' information** in the comments.

Immediately after completing the surveys, check, and double-check to make sure all sections of the survey forms are filled out, particularly the fisher's full name and gender, and the record of consent.

If you still miss a section after checking, **do not guess**, and make a note of the forgotten response in the comments.

CATCH SURVEY DETAILS

| | | | |
|--------------------------|--|-----------------------------------|----------------------------------|
| Data collector name: | <input type="text"/> | Survey code: | <input type="text"/> |
| Survey date (DDMMYY): | <input type="text"/> / <input type="text"/> / <input type="text"/> | Island: | <input type="text"/> |
| Fisher/Collector name: | <input type="text"/> | Community/village: | <input type="text"/> |
| Fisher/Collector gender: | <input type="text"/> | Fisher/Collector contact details: | <input type="text"/> |
| Fisher/Collector age: | <input type="text"/> | Consent Obtained (circle)? | <input type="text" value="YES"/> |

Data collector name:

Your full name (first and last).

This helps identify who collected the data in case there are any follow up questions from data entry officers or analysts.

Survey date:

The date that the survey was given in the community, in day/month/year format.

This date also doubles as the date of arrival for landing catch if a fishing trip was multi-day.

Fisher/Collector name:

Full name (first and last) of the fisher/collector that you are surveying.

Record the full name. Only recording a partial name makes it hard to keep track of which/how many people have been surveyed in a specific community. Their name will be kept confidential in any reporting.

Fisher/Collector gender:

Typically recorded as 'male' or 'female', but may be 'other'.

This helps identify the fisher/collector and helps data analysts identify fishing/collecting trends by gender.

Fisher/Collector age: The numeric age of the fisher. If they don't want to give their age, write 'none given'.

Survey Code:

Written as a whole number, in sequence. This number must be *unique* within each community in each survey trip. **This is very important.**

For example, there should not be two catch surveys numbered '002' in the same survey trip to the same Community.

Making sure this does not happen will require prior planning and preparation with the other catch monitors in the team (see [Data collection planning p.7](#) and [Preparing for survey trips p.8](#)).

The data entry officer will use this code to create a 'unique ID' for the specific paper survey by combining other catch survey details.

Island: The name of the island on which the community is located, that is most commonly found on maps.

Communities may not always have unique names - knowing the island helps to identify the specific community.

Community/village: The location where you are collecting catch data.

Fisher/collector contact details: Either a phone number or an email address. If the fisher/collector does not have a phone, find out what the easiest way to contact them is. For example, a relative or a local office.

Contact details help locate a person for follow-up questions or to let them know about survey trips or reporting activities if this is not being done through community representatives. These details should be kept confidential and accessible to the CBFM team only.

Consent obtained: Catch monitor must ask fisher/collector to confirm that they agree to take part in the survey. If they give their consent to participate, circle yes. If they do not agree, do not proceed.

Participant consent is an important part of responsible data collection practices.

| FISHING TRIP DETAILS | | | | |
|---|--|--|---------------------------------------|---|
| Date of departure: | <input type="text" value=" / /"/> | | | |
| Time of departure: | <input type="text"/> | Time of return: | <input type="text"/> | |
| Sea condition (circle one): | <input type="button" value="Calm"/> | <input type="button" value="Average"/> | <input type="button" value="Rough"/> | <input type="button" value="Not at sea"/> |
| Boat type (circle one): | <input type="button" value="No boat"/> | <input type="button" value="Motor"/> | <input type="button" value="Paddle"/> | <input type="button" value="Sail"/> |
| How many (#) different fishing methods were associated with this fishing trip?: | <input type="text"/> | | | |
| Was it <i>more difficult</i> to fish/collect today than usual?: | <input type="button" value="Yes"/> | | <input type="button" value="No"/> | |
| Please note any special events: | <input type="text"/> | | | |

Date of departure:

The date the fisher/collector left to go fishing/collecting, in day/month/year format.

If the fishing trip took *multiple days* this date will be *before* the survey date. If the trip took place *within a 24-hour period*, the date will be *the same* as the survey date.

KEY DEFINITION

Fishing trip: A single journey that a fisher or collector takes to catch fish/collect invertebrates over a defined period of time, i.e. has a distinct departure time/date and arrival time/date.

The fisher/collector may or may not use a boat on a fishing trip.

If a fisher/collector goes fishing for a couple of hours, comes home with or without catch, then goes back out again in the same day, this is two trips.

Catch monitors should fill out **one survey** per **fishing trip** per **person**.

Time of departure/return:

The time that fishers/collectors left and came back from fishing/collecting, using am/pm. An estimate is fine.

Sea condition: Circle one that most reflects the conditions faced by the fisher/collector.

Boat type: Circle one. Circle 'no boat' if the person was fishing/collecting on foot from shore, on reef flat etc.

How many fishing methods: the number of different gears used in a particular way to harvest fish or invertebrates.

For example, if a fisher does handlining and trolling on the same fishing trip, you would write '2'. See **fishing method** definition, next page.

Traveling to or from a primary fishing site with a trolling line in the water counts as a separate fishing method.

IMPORTANT: If a fisher/collector uses a certain method but is unsuccessful at catching anything, you should **still count this method** as having been used.

Fishing difficulty: Circle yes or no. 'More...than usual' refers to the fisher/collector's idea of a typical fishing day.

Special events: Some activities might affect what is caught and how much in a community, for example major celebrations, deaths, tabu opening/closing, transport or cargo vessel arrival, particularly bad weather etc. These should be noted.

| FISHING METHOD DETAILS | | | |
|--|-----------------------------|--------------------|--|
| Fishing method #: | <input type="text"/> | | |
| Fishing method used (circle one): | Casting nets | Gillnetting | Beach seine netting |
| | Drop-stone fishing | Handlining | Rod |
| | Spear (day) | Spear (night) | Hand collecting |
| | Scoop netting | Trolling | |
| | Other: <input type="text"/> | | |
| Approx. time spent actively fishing (hrs): | <input type="text"/> | Number of fishers: | <input type="text"/> |
| Was there catch from this method (circle)? | Yes | No | Approx weight (kg): <input type="text"/> |
| Habitat fished (for the method): | Lagoon | Reef flat (Lagoon) | Reef flat (Ocean) |
| | Reef edge | Ocean - no FAD | Ocean - FAD |
| | Mangroves | | |
| | Other: <input type="text"/> | | |
| Photo number(s): | <input type="text"/> | | |
| General comments: | <input type="text"/> | | |

KEY DEFINITION

Fishing method: A discrete fishing event in which *one* kind of fishing gear is used in a particular way to catch fish or invertebrates, for example handlining or hand collecting.

There may be one or multiple **fishing methods** used in a single **fishing trip**.

In this survey, a single fishing method is also associated with the habitat type fished, for example hand collecting on a reef flat.

Examples of multiple fishing methods follow below, as do tips for tricky situations.

FILL OUT THE 'FISHING METHOD DETAILS' SECTION OF THE SURVEY FORM FOR EACH FISHING METHOD USED IN A SINGLE FISHING TRIP.

The number of 'fishing method' sections filled on a form should be the same as the number of methods written in the FISHING TRIP section.

For example, if you wrote '2' in 'How many fishing methods', you will fill out two FISHING METHOD DETAILS sections.

If a fisher/collector has zero catch either for a particular method or for the whole, trip it is still really important to catch survey them (assuming they are willing).

Zero catches might be part of a bigger story about community fisheries resources that is hard to detect but important to know about.

Multiple fishing methods should be recorded:

- Where there was a change in fishing method used during a fishing trip, even when targeting the same species
- Where there was a change in habitat fished, implying a significant change in location

Examples:

- Trolling then drop-stone fishing for tuna in the open ocean would be two different fishing methods
- Hand collecting to collect different invertebrate species in two different habitats would be two different fishing methods

For more on different scenarios, see Module A: Catch monitoring training manual.

Fishing method #:

A whole number, in sequence.

For example, if you wrote '2' in 'How many fishing methods', and you know you will need to fill out two fishing method sections, you will write '1' in the first section and '2' in the second one.

Fishing method used:

Circle one method used to harvest catch. If 'other' is selected, write the method used.

The circled method may represent all harvested catch or only a portion of the catch. For example, a fisher may have used more than one method to harvest their entire catch. Or, a fisher may have used a method but not caught anything. This method should be recorded as well!

Not every single method is used in every community and some may not be relevant to your country - this is OK!

If someone uses a method that is not listed, note it down in 'other'. Images of methods listed on the catch survey form are included on page 16.

Approx. time spent actively fishing (hrs):

The estimated time, in hours, that a fisher/collector spent using a specific fishing method to fish/collect. Does not include travel time to or from the fishing site.

If less than one hour, you may write how many minutes, but write 'minutes' beside the number, or convert to decimal hours (e.g., 0.5 for 30 min). Be consistent in your approach.

Traveling to or from a primary fishing site with a trolling line in the water counts as active fishing (and as a separate method!)

Number of fishers: Write the number of fishers that were in the same boat as the fisher who you are now surveying. If you are surveying a collector without a boat, include the number of other people (e.g., youth) that may have accompanied this person and helped to contribute to the harvest.

Sometimes the specific fisher you are surveying may have been out in a boat with multiple people. When this happens it may mean that the catch you are now surveying is larger than if the fisher had been out fishing alone. Perhaps also it took less time to catch all those fish because there were more people fishing. These are important details to know because it tells us about how much effort is being used to catch fish as well as what strategies different communities are using.

Was there catch: Circle yes or no.

Knowing that someone tried to fish/collect and was unsuccessful tells an important story about possible changes over time in the difficulties in fishing/collecting. These difficulties often have nothing to do with the skill of the individual fisher/collector.

Approx. weight of catch (kg): An estimate of the total catch weight, in kg, for a particular method.

This will probably involve adding a few numbers together in the margins of the survey. Work with something of 'known' weight and relate that to the catch weight.

For example, a 1-litre plastic bottle full of water roughly equates to 1 kg.

Habitat fished: Circle the general habitat type where the fishing method was used. If habitat used is not represented in the options, select 'other' and *write the habitat used*.

Photo numbers: A whole number, or possibly the whole ID from the catch photo label that identifies the catch photo associated with the fishing method.

See Catch Survey in Appendix B

Ideally, there is only **one** catch photo per method, but in some cases there may be **two or more** photos.

If the method is associated with zero catch, write 'no catch' in the photo number spot on the survey. *Do not* leave the photo number spot blank because this may cause confusion and lead data entry officers to search for a photo that does not exist!

TIPS FOR TRICKY CATCH SURVEY SITUATIONS

There are a few examples where associating catch to specific fishing methods can be tricky. Some situations that have come up in the approach described in this manual are:

- When the *same* method is used to catch the *same* species in *different* habitats
- When the *different* methods are used to catch the *same* species in the *same* habitat
- When the *same* method is used to catch the same species in the *same* habitat BUT there is significant travel time between fishing sites within this *same* habitat

All of these examples above should be counted as *two or more* separate fishing methods *if at all possible*.

However, it is sometimes difficult in practice to distinguish what fish/invertebrates are attributable to a given fishing method. This means that estimating catch per method and sorting the catch by method for catch photos can sometimes be a challenge.

In these rare cases, work with the fisher(s) to see if it is possible to split the catch into different methods. If this is not possible, ensure that each method used to catch fish is included in the survey and that all fish are included in one or more catch photos.

Write in the survey comments what the challenge was and what you did to tackle it. If the same situation arises again, be consistent and do the same thing again.

Debrief with your fellow catch monitors, and if necessary your catch monitoring coordinator, to come up with a common solution in case they also experience the same challenge.

EXAMPLES OF FISHING METHODS INCLUDED IN THE CATCH SURVEY



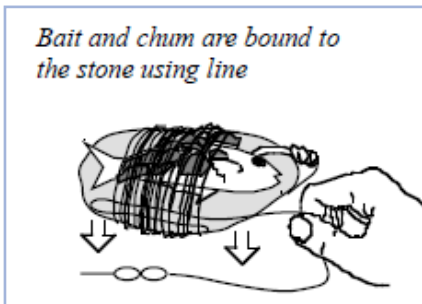
Cast netting



Beach seine netting
(also called a bait net)



Scoop netting
(also called a dip net)



Drop-stone fishing



Handlining



Gillnetting



Trolling



Spearfishing (hand and gun)



Hand collecting



Rod

Image credits:

Trolling: courtesy of UOW Media unit

Spearfishing, gillnetting, handlining: courtesy of WorldFish

Dropstone fishing diagram: courtesy of the Pacific Community.

Cast netting, beach seine netting and hand collecting images: courtesy of ANCORS staff (Q. Hanich, R. Davis)

Scoop netting: courtesy of SPC

Rod: courtesy of W. Sokimi, Pacific Community

Taking photos of landed catch

You will need to take a photo of each group of fish/invertebrates caught using a different fishing method during a single fishing trip at the same time that you are collecting data from the fisher/collector using the catch survey.

This is done by placing the catch by fishing method on a gridded mat or tarpaulin and then carefully taking a labelled photo. More than one photo may be taken of a fisher/collector's total catch.

Taking a good, clear photo is extremely important because it is replacing the need for catch monitors to identify, measure and weigh fish in the field. Data analysts will do this work instead, so they need a good photo to work with.

The photo-taking process is explained in detail below. It is also explained in Module A: Catch monitoring training manual.

HOW TO USE THE GRIDDED MEASURING MAT FOR CATCH SAMPLING

Once you have identified with the fisher/collector which catch came from which fishing method**:

1. Lay the gridded measuring mat or tarpaulin down on a flat and even surface.

For example, make sure the mat is not bunched up, or in a hole, or does not have a big rock underneath.

If it is windy, you may need to use something to weigh the edges of the mat/tarp down.

Otherwise, try to take photos in a location that is more sheltered from the wind.

If you are using a tarpaulin, place a ruler, or another item with a defined scale the tarp and make sure this entire item is clearly visible when photographed from above.

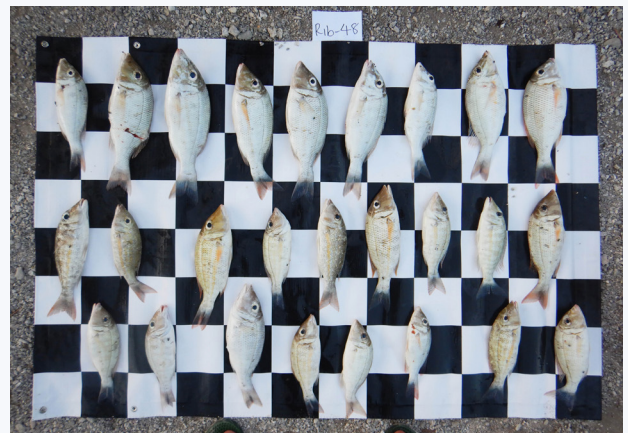
2. For each unique 'fishing method' event (see definitions in the section starting p.10.) place all fish, shells, etc. caught on the mat.

BEFORE YOU TOUCH THE CATCH: Seek permission first from the fisher/collector to handle their catch, otherwise ask for their assistance for this step.

When you lay the fish, shells etc. on the mat (see images), make sure that:

- Each individual* fish, shell etc. is laid out as flat as possible;
- Each individual* fish, shell etc. is laid side-by-side with no overlaps; and,
- At least one square on the mat has all of its edges visible and/or the ruler is clearly visible.

Laying the fish out in this way on the mat is important to do because fish will be identified and measured by data analysts back in the office and they need to be able to do this as accurately as possible.



An example a GOOD catch photo: The photo is well lit, there is an ID label visible, it has been taken from directly above the catch mat, and the fish are not obscuring one another. The fish in this photo will be easy to count, identify and measure.



This image is an example a POOR catch photo. Fish are crowded close together and there are a number of overlapping fish that obscure heads and tails (red circles). This makes identifying and measuring fish using this photo difficult or impossible.

HOW TO USE THE GRIDDED MEASURING MAT FOR CATCH SAMPLING *cont.*

*Note about laying out fish and invertebrates individually: While it is most informative to lay out individual animals for identification and measurement, there may be circumstances where you will need to use your judgement about whether measuring individuals is practical or desirable or if some group measuring approach might be more appropriate.

For example, catches may be of many small fish or shells, or they may already be tied in strings

or shucked in buckets. Another example is if the fisher/collector does not have the time for you to lay individuals out on the mat.

Work with fellow catch monitors to come up with a consistent solution, and check in with your catch monitoring coordinator if possible. Make detailed notes about what you did

Also see Tips for tricky photo situations, following.

3. Fill out a photo catch ID label and place it on the mat, making sure the entire label is clearly visible and your writing is clear.

This label is the only way to uniquely identify each photo and to link it to its corresponding catch survey information. This information is critical for data entry and analysis stages.

This means that you must write a new photo # each time that you place catch associated with a different method (but same survey) on the mat (**Figure 3**).

| COMMUNITY | MMYY | CATCH SURVEY # | PHOTO # |
|-----------|------|----------------|---------|
| Kuma | 0719 | 2 | 1 |

Figure 3: Catch photo label with worked example. This label tells the data analyst that the catch photo came from the community of Kuma in July 2019, and that it is photo #1 associated with catch survey #2. There may be more than one photo associated with catch survey #2.

4. Take *one* catch photo for *each* fishing method used in a fishing trip.

Try to be quick and efficient - these fish/invertebrates are someone's livelihood and you don't want them to get spoiled or damaged!

There may be more than one catch photo for a single fishing trip. For example, a fisher may have used handline AND trolling methods in the same trip. This means you will need to take two photos.

In some cases, for example when catches from a specific fishing method are larger than will fit on one mat or in one photo, you may need to take

multiple photos of the same fishing method. In this case, make sure to label each photo uniquely, and to make a note of this occurrence on the corresponding survey.

Don't take empty mat photos of 'Zero' catches where a method was used but nothing was caught.

Do write 'no catch' in the photo number spot on the survey (*don't leave it blank*).

HOW TO TAKE GOOD CATCH PHOTOS IN THE BEST LIGHTING POSSIBLE:

- ☐ Take a photo of the catch from straight above the mat (not on an angle)
- ☐ Avoid shadows crossing over mat that will make it difficult to see/identify species
- ☐ Make sure all caught species are laid out as described in the mat section above.
- ☐ Make sure that your camera settings are not set to capture low-resolution photos only.

Photos need to be a minimum of 2MB in size in order for photos to be clear enough for ID and analysis, or for post-processing image brightening to possibly be effective

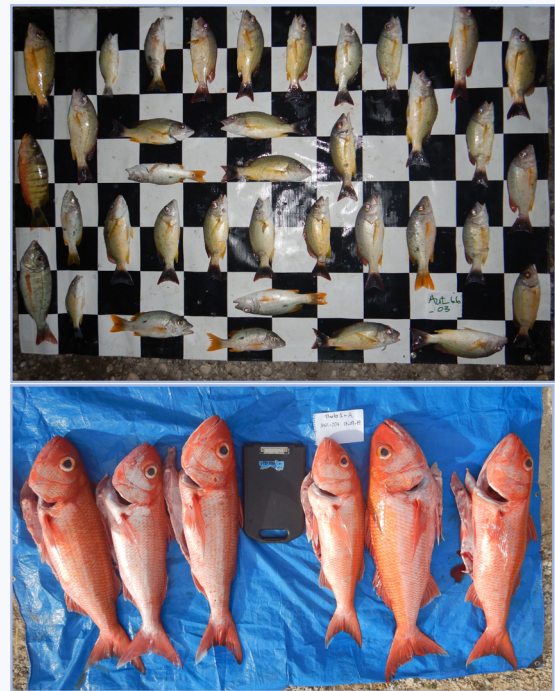
Images should also be <5MB, as this has consequences for file sharing and storage.

Top right is a catch photo taken during the night in the best possible way. An additional light source was used, and held high above the mat. It is a good photo because:

- The mat is laid flat, and mat squares are of a known size
- The photo is clear and taken from directly above
- There is good, even lighting and no shadows covering the catch
- All fish are laid out as flat as possible, wholly on the mat, and are clearly identifiable
- They are spaced out so no individuals are overlapping
- The photo label is clear and easy to read

The example to the right uses a tarpaulin and an item of known scale (i.e., the clipboard at 41cm length).

It is a good photo for the same reasons as above. *(The label is easy to read when the photo is looked at in a larger size).*



Two examples of a 'good' catch photo. The top example uses a gridded 10cm² mat and the bottom uses a tarpaulin and an item of known scale.

Here are some examples of 'poor' photos:

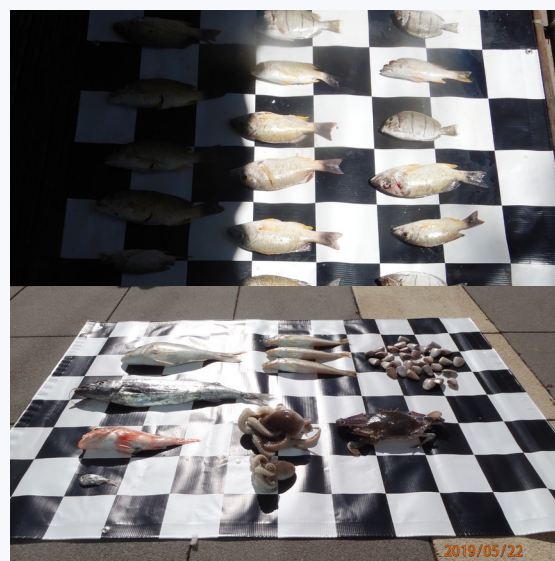
This photo has been taken in an area partly shaded from bright sunlight.

The top image is a poor photo because:

- There is a significant shadow crossing the mat, making species identification and measuring difficult

The image below is a poor photo because:

- It is taken on an angle, causing the fish to be foreshortened. This makes identification difficult and measuring impossible
- The glare of the sun makes identification difficult or impossible
- There is no photo label or it is not clearly visible and easy to read, meaning it is impossible to attribute this catch to a specific community, survey or fishing method



Two examples of a 'Poor' catch photo. The top example has a significant shadow across the mat and no label and the bottom example is taken on an angle, with glare, and no label.

TIPS FOR:

Tricky photo situations:

When recording and taking photos of a fisher/collector's catch, there will be tricky situations that you will come across from time to time. This section describes ways to troubleshoot some of the more common situations that have arisen using the data collection approach in this manual.

In all cases, always take notes about how you tackled your particular 'tricky situation', and be sure to debrief with the wider CBFM team.

Lots of very small animals (fish or invertebrates) or a few very large animals

Sometimes you will find a fisher or collector with a boat or a container full of very small animals (*e.g., small fish or shellfish*).

Very small animals:

It is most informative to lay out very small animals individually for identification and measurement. However, there may be circumstances where a grouped measuring approach might be more appropriate. If a grouped approach becomes necessary, one possible suggestion is:

1. Take a random selection of small animals and lie them on the mat
2. Include the remaining animals in an open container in the photo
3. Estimate the total number of animals remaining in the container with help from the fisher/collector as well as the estimated total weight, *minus the container weight*.
4. Take the width, length, and depth measurements of the container as well as the estimated container weight and write these in the survey comments

Very large animals:

It is possible that fish may be so large that they do not fit on a fish mat. If this is the case, you may lie the fish on a larger tarp beside an item of known scale, for example a ruler, a standard sized-clipboard, or something else that you have measured.

Make sure the whole animal (tip of nose to end of fork) is included in a single photo and that the photo is not taken on angle.

Catch that is difficult or impossible to distinguish by fishing method

In rare cases, it may not be possible to distinguish which catch came for which method (see *Tricky situations* p.15).

Do the best you can, without guessing, with help from the fisher. If it is not possible to distinguish between catches by method, the catch that cannot be distinguished together on the mat and take one (or more if necessary) catch photo(s), with labels. Explain what happened and what you did in the survey comments.

Photos in challenging light conditions

It is likely that you will come across a situation where light levels can make taking good photos difficult.

As a rule, digital 'point and shoot' cameras take the most usable photos when there is a uniform source of light

If it is dusk or dark:

- Put your camera in night mode.
- Get someone to hold a flashlight over the catch, making sure not to over-expose some species while leaving others in darkness, or making shadows that cross over the mat.
- Take the photo holding your arms as still as possible so there is little or no blurriness when you take the photo - too blurry and the species will be hard to identify!

Non-standard units or other animals:

Sometimes fishers will present you with catch that is organised into a different unit other than individual, for example a string of fish, a bucket of shucked clams, or a bowl of bivalves (e.g., image below). Fish may also sometimes be landed already gutted.

There is no single established way for addressing 'non-standard units'. You must work with your team to come up with a consistent way of recording and photographing these catches. In all cases, make a note of what you did in the survey comments.

For animals in bags, it is helpful to remove all animals from the bag for the photo if at all possible. If it is not possible, it is helpful to display a random selection of animals outside of

the bag and to make a note of the total number of animals inside the bag, both on the catch photo and in the survey notes.

For other invertebrates like octopus and sea cucumber, there are established ways of measuring and counting these animals. Octopus need to have their head/mantle clearly laid out and visible.

Sea cucumbers are more complicated to measure properly because they change dimensions and weight when they are out of the water. Depending on their information needs, CBFM teams may choose to use a different sampling and measurement approach for sea cucumbers based on other catch monitoring resource guides.



Examples of non-standard units and invertebrate catches that community catch monitors may come across.

Photos: Invertebrates in buckets from B. Moore. Checked mat from Pathways project team.

How to fill out the fishing context survey form

A catch survey form will tell you about what is caught on the day from the people who have been surveyed. While this is useful information, it represents just a short period in time and it only captures a little information about fishing activities in a community overall.

The fishing context survey is designed to capture more information about fisher/collector fishing habits outside of the catch survey time frame. It is also interested in better understanding how fishers and collectors perceive the status of their local fisheries resources and their awareness of the rules that may be used to manage them.

This survey form is to be filled out only once per person in the same survey trip.

If you have collected data from a fisher/collector using the catch survey form (*explained in section starting p. 10*) and you have taken a photo of their catch (*explained in section starting p. 17*), you need to ask them to take the fishing context survey too.

All fishers/collectors who do one or more catch surveys also need to do one fishing context survey.

ALSO

Fishers/collectors who have NOT done a catch survey can also be asked to do the fishing context survey, even if they not been fishing on the day you ask them.

You should try to survey as many fishers/collectors as you can in the community, even if that person was not fishing/gleaning that day.

Doing this gives a more complete story about community fishing practices and perspectives.

This means that it is possible for a fisher/collector to have taken the **fishing context survey** and **NOT** the **catch survey**.

When you get the fisher/collector to take the **fishing context survey** has some flexibility. The easiest to do would be for you to give the fishing context survey directly *after* the **catch survey**.

However, if the fisher/collector is short on time **OR** if you are asking someone who has not

taken the **catch survey**, you could give them the **fishing context survey** at any other time on that **same day**.

On your next survey trip to the same community, you can ask the same people to do the **fishing context survey** over again, *once* within this new trip time frame as well.

Survey forms for the same fisher/collector must be kept together for each survey trip. You may wish to staple these forms together.

The next few pages go through the survey in sections and explain its elements in detail.

See the complete survey form in Appendix C.

Make sure that you **fill in all the questions** in the survey. Write **N/A** if not applicable.

If you are **unsure about something**, make a note of what it is in the comments boxes.

FISHING CONTEXT SURVEY

| | | | |
|-----------------------------|--|---|--|
| Data collector name: | <input type="text"/> | Survey number: | <input type="text"/> |
| Survey date (DDMMYY): | <input type="text"/> / <input type="text"/> / <input type="text"/> | Linking catch survey number: | <input type="text"/> |
| Island: | <input type="text"/> | Community/village: | <input type="text"/> |
| Fisher/Collector name: | <input type="text"/> | Fisher/Collector gender: | <input type="text"/> |
| Fisher/Collector age: | <input type="text"/> | Fisher/Collector contact details: | <input type="text"/> |
| Consent obtained? (circle): | <input type="button" value="Yes"/> <input type="button" value="No"/> | First time answering this survey? (circle): | <input type="button" value="Yes"/> <input type="button" value="No"/> |

QUESTION - ASK FIRST TIME ONLY

- i What 3 main gears do you normally catch or collect with *now*?
- ii What 3 main species do you normally catch or collect *now*?
- iii How long have you been fishing and/or gleaning/collecting for?

RESPONSE

| | |
|---------|----------------------|
| 1. | <input type="text"/> |
| 2. | <input type="text"/> |
| 3. | <input type="text"/> |
| | |
| 1. | <input type="text"/> |
| 2. | <input type="text"/> |
| 3. | <input type="text"/> |
| | |
| Years: | <input type="text"/> |
| Months: | <input type="text"/> |

Data collector name, survey number, survey date, island, community, fisher/collector name, fisher/collector gender, fisher/collector age, fisher/collector contact details, consent are all recorded the *same way* as in the catch survey (*section starting p.10*)

Linking catch survey number: Enter the survey number used to identify an individual fisher/collector the first time that you surveyed them using the catch survey.

For example, this could be fishing context survey #005 but the same fisher could have done catch survey #003. So you would write '003' in the linking survey number box and '005' in the survey number box.

DO NOT LEAVE BLANK. If you are not sure if they have done the catch survey with another data collector, ask the fisher/collector. If they say yes, fill in the correct linking number later in the day during your debrief with other catch monitors.

If the particular fisher/collector has not done a catch survey, write N/A in the box.

First time answering survey: Circle yes or no.

This is important information because it gives the CBFM team insights into the size of the group participating in surveys in a community. It also helps to link the survey to past responses by the same person.

'Ask First time only' questions: there are 3 questions (i-iii) at the top of the form that you need to ask the individual *the very first time* that they ever take the **Fishing context survey**.

This means that if you are on your second trip to a certain community and you come across someone who was not surveyed in the first trip, you would ask them these questions.

After a person has done this survey once, they do not need to answer these three questions ever again, but they can if they indicate there are any changes from the last time that they were surveyed.

You will know that they have answered this survey before if they answer **YES to the first time answering this survey question**.

'Normally' means what happens regularly.

'Now' refers to the present; it does not have to mean the specific day that you are surveying them.

| QUESTION - ASK EVERY TIME | | RESPONSE | |
|---------------------------|---|---|--------------------|
| 1a | In the last 7 days, did you go fishing, collecting, both, did not go? | <input type="checkbox"/> Fishing <input type="checkbox"/> Collecting <input type="checkbox"/> Fishing AND Collecting <input type="checkbox"/> Did not Fish or Collect | <div>Comment</div> |
| 1b | In the last 7 days, how many times did you go per activity listed (#)? | Times per activity(#): <input type="text"/> Fishing <input type="text"/> Collecting | |
| 2 | In the last 7 days, what were the 4 main fish/ invertebrate types you caught? | Fish: <input type="checkbox"/> Tuna <input type="checkbox"/> Other pelagic/ deep sea <input type="checkbox"/> Deep sea bottom <input type="checkbox"/> Reef fish <input type="checkbox"/> Sharks and rays <input type="checkbox"/> Other fish (specify) <input type="text"/> <input type="checkbox"/> Other seafood (specify) <input type="text"/> | |

| QUESTIONS cont. | RESPONSE |
|--|---|
| <p>3 <i>In the last 7 days, what were the 3 main fishing methods you used for fishing?</i></p> | <div> <input type="checkbox"/> Net <input type="checkbox"/> Spearfish (night) </div> <div> <input type="checkbox"/> Handline <input type="checkbox"/> Spearfish (day) </div> <div> <input type="checkbox"/> Drop stone <input type="checkbox"/> Gleaning/ collecting </div> <div> <input type="checkbox"/> Trolling <input type="checkbox"/> Other (specify) </div> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
| <p>4 <i>In the last 7 days, how much catch (in kg) did you catch in total?</i></p> | <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <div></div> <div>kg</div> </div> |
| <p>5 <i>In the last 7 days, has a local closed area (e.g. tabu) been opened for fishing?</i></p> | <div> <input type="checkbox"/> Yes <input type="checkbox"/> I don't know </div> <div> <input type="checkbox"/> No <input type="checkbox"/> There are no local areas closed to fishing </div> |

'In the last 7 days' questions: Tick or shade in the applicable boxes, unless a number (Question 1b) or weight (Question 4) is required.

Do not include the day of the interview in the 7 days.

For example, if you interview a fisherman on a Monday, then ask them if they have gone fishing/collecting from last Monday to yesterday (Sunday).

Make sure that the answer on 'number of days gone fishing/collecting' in Question 1b is the same as the number of days you mark down in question 6. If these numbers are not the same, follow up with the fisher/collector to clarify.

If there is an 'other' option, write what 'other' means.

If the fisher/collector has any comments or if you want to add an explanation or clarification, put it in the comments.

Catch (in kg) in last 7 days (Question 4): An estimate of the total catch weight, in kg, for a particular method.

This will probably involve adding a few numbers together in the margins of the survey.

Try to figure out how much one day's worth of catch from that fisher/collector would weigh, then for each of the remaining 6 days estimate with them whether the weight of the catch was more or less than that day. Work with something of 'known' weight and relate that to the catch, e.g., a 1-litre plastic bottle full of water roughly equates to 1 kg.

| QUESTIONS cont. | RESPONSE | | |
|---|--|--|--|
| <p>6 <i>In the last 7 days, please identify all days fished/collected.</i></p> <p>If you did not fish or glean/collect, leave the day and activity blank.</p> | <div>DAY</div> <div>Monday</div> <div>Tuesday</div> <div>Wednesday</div> <div>Thursday</div> <div>Friday</div> <div>Saturday</div> <div>Sunday</div> | <div>Fishing</div> <div>Collecting</div> | <div>Comments</div> <div style="border: 1px solid black; height: 150px; width: 100%;"></div> |

| QUESTIONS cont. | | RESPONSE | |
|-----------------|---|--------------------------------|----------------------|
| 7 | How long does it take you to travel to your main fishing/collecting ground? | Hours | <input type="text"/> |
| | | Minutes | <input type="text"/> |
| | | <div>Comment</div> <div></div> | |

Identify all days fished in last 7 days: Starts from the day before the day of the survey. This question is designed to pick up patterns of fishing in the week before a fisher or collector is surveyed. This fishing activity could be marked as a tick for a day where fishing/collecting took place. Include any details or explanations that the fisher/collector gives you in comments.

Question 7: Write the hours and minutes that it took for the fisher/collector to travel to the fishing/collecting ground that they regularly go to. **NOTE:** Travel time does not include the time spent actively fishing or the time spent at fishing grounds. An estimate is fine. If any explanation of travel habits is given, write it in the comments.

| QUESTION - ASK EVERY TIME | | RESPONSE | |
|---|---|--|---|
| For questions 8-11 answer if <i>since the last survey (in the last 12 months if first village survey)</i> | | | |
| 8a | Have you changed your <i>main</i> fishing/collecting location? | <input type="checkbox"/> Yes (If yes, see 8b and 8c) <input type="checkbox"/> No | 8c If yes, explain why you have changed locations in the comments. |
| 8b | If yes, is the new location closer, farther, about the same distance from your village than your previous location(s)? | <input type="checkbox"/> Closer <input type="checkbox"/> Further <input type="checkbox"/> Same | <div></div> |
| 9 | Does it take you more, less, about the same time to catch/collect the same number of fish and/or invertebrates? | Fish <input type="checkbox"/> More <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant | Invertebrates <input type="checkbox"/> More <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant |
| 10 | Are you catching/collecting more, less, about the same <i>total number</i> of fish <i>and/or</i> invertebrates? | <input type="checkbox"/> More <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant | <input type="checkbox"/> More <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant |
| 11 | Are you catching/collecting larger, smaller, about the same <i>size</i> of fish <i>and/or</i> invertebrates?? | <input type="checkbox"/> Larger <input type="checkbox"/> Smaller <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant | <input type="checkbox"/> Larger <input type="checkbox"/> Smaller <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant |
| 12 | Since community-based fisheries management was implemented in your village/ community, has fishing/collecting improved, gotten worse, about the same? | <input type="checkbox"/> Worse <input type="checkbox"/> Improved <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant | <input type="checkbox"/> Worse <input type="checkbox"/> Improved <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant |

‘Since the last survey/in last 12 months’ questions:

Question 8a and 8b: Tick or shade *one* box that most applies.

If answering **YES** to **Question 8b**, you *must* write an explanation from the fisher/collector of why the answer is yes in **Question 8c**.

Questions 9-12: For the questions asking about fish and/or invertebrates or fishing and/or collecting, tick or shade *one* box under *each* heading.

For example, if the person you are surveying only fishes and does not collect, tick or shade the relevant box under the **FISH or FISHING** heading and tick/shade ‘not relevant’ under the **INVERTEBRATES or COLLECTING** heading.

In **Question 12**, it is possible for a fisher to not collect invertebrates, but to still have an opinion on the status of collecting them in their community. In this case, tick/shade the opinion that they give you.

Question 13a: Tick/shade yes or no. ‘Local restrictions’ include CBFM plan rules, may include tabus/closed areas, and may be formal or informal.

It is possible that some people in the community will not know about CBFM plan rules. This question helps the CBFM team know if there is a need for further information/awareness activities in the community.

Question 13b: Circle a number from 1 to 5, where ‘1’ is no restrictions followed by people and ‘5’ is all restrictions followed by people. A ‘3’ would mean that people generally follow half the restrictions. If there is any explanation given by the fisher/collector, write this clearly in the comments.

Question 14: Tick/shade yes or no. If yes, clearly write what the concerns are in the comments and/or margins of the form. ‘Fisheries resources’ and ‘concerns’ are purposefully vague words to try and capture a potentially wide range of issues.

| QUESTION - ASK EVERY TIME cont. | RESPONSE |
|--|---|
| 13a In your village, are there local restrictions on how to fish? (Species, areas, methods, gear etc.) | <input type="checkbox"/> Yes (if yes, see 13b) <input type="checkbox"/> No |
| 13b If yes, are people following these fishing restrictions? (circle one). Write any comments. | <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">1</div> <div style="margin-right: 10px;">2</div> <div style="margin-right: 10px;">3</div> <div style="margin-right: 10px;">4</div> <div>5</div> </div> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">None followed</div> <div style="flex-grow: 1; border-bottom: 1px solid black; position: relative;"> <div style="position: absolute; left: 0; top: -5px;">●</div> <div style="position: absolute; right: 0; top: -5px;">➔</div> </div> <div style="margin-left: 10px;">All followed</div> </div> <div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div> |
| 14 Do you have any concerns about your local fisheries resources? | <input type="checkbox"/> Yes (if yes, please comment) <input type="checkbox"/> No <div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div> |
| 15 Do you have any more comments? | <div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div> |

Catch monitor field notes

As a catch monitor recording information about community fisheries, you will have a first-hand view of what is being studied. It is therefore important that you write down anything that you think could affect the collection and interpretation of fisheries data during the survey trips (both positive and negative!). These valuable observations help your team better understand the ‘story’ in the collected data when it comes time to analyse it.

OBSERVATION EXAMPLE 1

You ask village/community members if there are any special events taking place during, just before or just after we collect fishery information in a village/community.

Examples of ‘special events’

Transport/cargo ship arrival; community events like births, deaths, marriages; religious events or holidays; large numbers of people away from the village/community; spawning time for fish; bad weather; fishing boats broken down; new fishing ban/tabu.

Writing your Observation

If the unusual/special event is “transport/cargo ship arrival”, you would write this event in your notes and then explain how this event might affect data collection: “arrival of transport ship means that more fishing/collecting is occurring than usual in the past few days in order to send more fish to central market”.

Taking field notes is a helpful way of remembering and recording behaviours, events, settings, and observations that took place during your visit to a village/community. Some of your notes will describe things that are a **fact**, for example the weather, the date, or the behaviours of a surveyed fisherman. Other notes will record your **thoughts, ideas, questions, and concerns** that you have while you are watching what is happening as you collect data in communities.

This unusual or uncommon event could affect how much fishing/collecting is taking place, what gear is used or species are caught/collected, or the number of people available to be surveyed.

This information might help explain why there is a sudden increase in the amount of fish caught in a particular village/community in a certain time period. There may be other unusual/special events as well, or no events at all, which is also important to note!

OBSERVATION EXAMPLE 2

You see that fishers are avoiding you when you try to survey them by landing somewhere else.

Your **field notes** may overlap occasionally with, or contribute to, the information provided for the survey trip reports but they are not the same thing. Field notes should largely focus on observations around data collection activities specifically, not for the trip on the whole.

See the field notes form in Appendix D

OBSERVATION EXAMPLE 3

You have a concern that a group of fishers or collectors are not answering a particular survey question truthfully.

There may be multiple catch monitors involved in your survey trip. It is important that each of you write your own field notes, not just one set of notes to share between you all. This is because even though you might all be doing the same activity, your observations might be completely different from someone else’s!

Daily data check, safe data storage, and debrief

A catch monitor's work is not quite done after they have finished collecting data for the day. There are still a few more steps left to complete even if it is the last day of a survey trip.

Check for data collection errors

At the end of every day of data collection:

Review the survey forms that you were responsible for to check that there are no mistakes or blank responses and that your writing is clear enough for the data entry officers to read later. It is easier to correct errors on the day they happened.

Only fill in blank responses where you are certain of the response but have forgotten to enter it, for example the date, fisher/collector gender, or sea condition.

DO NOT GUESS.

Also double check that you have avoided accidental survey number duplication (e.g., two surveys being labelled "25").

Write in your field notes journal - see [Field notes section p.27](#).

Organise and safely store forms

IT IS VERY IMPORTANT to make sure that all survey forms completed for one specific fisher/collector are kept *together*.

Option 1

One **Catch Survey** AND one **Fishing Context Survey**

If you have surveyed the catch of a fisher/collector and taken photos, they should have a **minimum of 2** survey forms) linked to them.

Option 2

TWO+ **CATCH SURVEY** AND ONE **FISHING CONTEXT SURVEY**

If you have surveyed their catch *more than once in the same survey trip*, they will have a **minimum of 3** survey forms linked to them.

Option 2

ONE **FISHING CONTEXT SURVEY**

If a fisher/collector has only taken the **Fishing Context Survey**, it is possible for a fisher/collector to have only one survey linked to them.

Make sure all forms related to a specific fisher/collector are stapled or secured together so that they are not easily separated.

It is also important to store these forms in a secure, clean, and dry location for transport back to the office. You do not want to lose data after all that hard work!

Daily debrief among collection team

Debrief with fellow catch monitors about what went well that day, and what might need to change in terms of data collection strategies.

Subjects that you may wish to discuss include:

- Troubleshooting catch photos and survey data
- Troubleshooting survey strategies and techniques
- Issues raised by community members
- Issues that you would like to raise as a catch monitor
- Activities or events of note that may affect data collection

With your fellow catch monitors, compile a list of who has been surveyed that day in order to help keep track of who has been surveyed and who hasn't and to use as a checklist to help keep track of survey forms. Keep this list in a safe location where it cannot be lost.

If necessary and if connectivity allows, you may check in with the data coordinator back in the office and troubleshoot any issues with them.

AFTER DATA COLLECTION IN COMMUNITIES

After

Transfer data
Debrief with CBFM team

Once catch monitors return from communities back to the office, there are a few more important steps to complete before the catch monitoring work is handed over to other members of the CBFM team. This section briefly describes the final steps for catch monitors once they return to the office.

Transfer data and final debrief with CBFM team

Hand over the following materials to the CBFM catch monitoring coordinator:

- Completed survey forms
- Remaining blank survey forms (with/without pre-filled areas)
- Camera/tablet containing catch photos
- A copy of your field notes (keep the original as a backup)
- Materials brought with you to communities like mats or tarps for cleaning and storage

Once back in the office, meet with your survey trip leader or catch monitoring coordinator and your fellow catch monitors from the same survey trip (if you are not the only one).

Talk about your experiences on the survey trip, including things that you think went well, and things that could be improved for next time. Identify areas where troubleshooting was needed and what decisions were made to address these issues.

Assist the survey trip leader to complete the survey trip report, if you have not already done so in communities.

Next steps

Data collection for this round of catch monitoring is now complete. Other CBFM team members can now start data entry, analysis, and report preparation activities. Your work as a catch monitor is complete (for now), but you may be called upon to clarify data entered into survey forms.

APPENDIX: DATA COLLECTION INSTRUMENTS

A: Checklist of materials to bring on data collection trips

- ☐ Dedicated bag or backpack for carrying supplies
- ☐ Fish mat with 10cm² grid AND/OR plastic tarpaulin(s)
- ☐ A ruler OR an item with a defined scale to put in photos
- ☐ Catch photo label for Fish Mat
- ☐ Pens and/or pencil with eraser and sharpener or spare lead
- ☐ Paper survey forms: ~100 copies per form for each community (assuming no printer in communities)
- ☐ Field notes form or notebook
- ☐ Clipboard
- ☐ Something to store survey forms in so they stay dry and organised
- ☐ Tablet or camera with chargers and battery backup
 - For taking photos
 - No electronic data collection application for now
- ☐ Credit for phone/internet to stay in contact with CBFM team in the office
- ☐ Flashlight/torch and spare batteries
- ☐ Stapler and staples (optional)
- ☐ Small umbrella and/or raincoat (optional)

B (i): Catch Survey

CATCH SURVEY DETAILS

| | | | |
|--------------------------|--|-----------------------------------|----------------------------------|
| Data collector name: | <input type="text"/> | Survey code: | <input type="text"/> |
| Survey date (DDMMYY): | <input type="text"/> / <input type="text"/> / <input type="text"/> | Island: | <input type="text"/> |
| Fisher/Collector name: | <input type="text"/> | Community/village: | <input type="text"/> |
| Fisher/Collector gender: | <input type="text"/> | Fisher/Collector contact details: | <input type="text"/> |
| Fisher/Collector age: | <input type="text"/> | Consent Obtained (circle)? | <input type="text" value="YES"/> |

FISHING TRIP DETAILS

| | | | | |
|---|--|--------------------------------------|-------------------------------------|---|
| Date of departure: | <input type="text"/> / <input type="text"/> / <input type="text"/> | | | |
| Time of departure: | <input type="text"/> | Time of return: <input type="text"/> | | |
| Sea condition (circle one): | <input type="text" value="Calm"/> | <input type="text" value="Average"/> | <input type="text" value="Rough"/> | <input type="text" value="Not at sea"/> |
| Boat type (circle one): | <input type="text" value="No boat"/> | <input type="text" value="Motor"/> | <input type="text" value="Paddle"/> | <input type="text" value="Sail"/> |
| How many (#) different fishing methods were associated with this fishing trip?: | <input type="text"/> | | | |
| Was it <i>more difficult</i> to fish/collect today than usual?: | <input type="text" value="Yes"/> | | <input type="text" value="No"/> | |
| Please note any special events: | <input type="text"/> | | | |

FISHING METHOD DETAILS

| | | | |
|--|---|---|--|
| Fishing method #: | <input type="text"/> | | |
| Fishing method used (circle one): | <input type="text" value="Casting nets"/> | <input type="text" value="Gillnetting"/> | <input type="text" value="Beach seine netting"/> |
| | <input type="text" value="Drop-stone fishing"/> | <input type="text" value="Handlining"/> | <input type="text" value="Rod"/> |
| | <input type="text" value="Spear (day)"/> | <input type="text" value="Spear (night)"/> | <input type="text" value="Hand collecting"/> |
| | <input type="text" value="Scoop netting"/> | <input type="text" value="Trolling"/> | |
| | <input type="text" value="Other:"/> | | |
| Approx. time spent actively fishing (hrs): | <input type="text"/> | Number of fishers: | <input type="text"/> |
| Was there catch from this method (circle)? | <input type="text" value="Yes"/> | <input type="text" value="No"/> | Approx weight (kg): <input type="text"/> |
| Habitat fished (for the method): | <input type="text" value="Lagoon"/> | <input type="text" value="Reef flat (Lagoon)"/> | <input type="text" value="Reef flat (Ocean)"/> |
| | <input type="text" value="Reef edge"/> | <input type="text" value="Ocean - no FAD"/> | <input type="text" value="Ocean - FAD"/> |
| | <input type="text" value="Mangroves"/> | <input type="text" value="Other:"/> | |
| Photo number(s): | <input type="text"/> | | |
| General comments: | <input type="text"/> | | |

B (ii): Catch Survey Example

| CATCH SURVEY DETAILS | | | |
|--------------------------|---|-----------------------------------|--|
| Data collector name: | <input type="text"/> | Survey code: | <input type="text" value="PES-048"/> |
| Survey date (DDMMYY): | <input type="text" value="14/07/2020"/> | Island: | <input type="text" value="Malekula, Maskelyne"/> |
| Fisher/Collector name: | <input type="text"/> | Community/village: | <input type="text" value="Pescarus"/> |
| Fisher/Collector gender: | <input type="text" value="Male"/> | Fisher/Collector contact details: | <input type="text" value="(daughter)"/> |
| Fisher/Collector age: | <input type="text" value="45"/> | Consent Obtained (circle)? | <input checked="" type="radio"/> YES |

| FISHING TRIP DETAILS | | | |
|---|--|-------------------------------------|---|
| Date of departure: | <input type="text" value="14/07/2020"/> | | |
| Time of departure: | <input type="text" value="8 am"/> | Time of return: | <input type="text" value="3:30pm"/> |
| Sea condition: | <input checked="" type="radio"/> Calm | <input type="radio"/> Average | <input type="radio"/> Rough |
| | <input type="radio"/> Not at sea | | |
| Boat type (circle one): | <input type="radio"/> No boat | <input type="radio"/> Motor | <input checked="" type="radio"/> Paddle |
| | <input type="radio"/> Sail | | |
| How many different fishing methods were associated with this fishing trip?: | <input type="text" value="3"/> | | |
| Was it <u>more difficult</u> to fish/collect today than usual: | <input type="radio"/> Yes | <input checked="" type="radio"/> No | |
| Please note any <u>special events</u> : | <input type="text" value="for sale at Uda"/> | | |

| FISHING METHOD DETAILS | | | |
|--|---|--|---|
| Fishing method #: | <input type="text" value="1"/> | | |
| Fishing method used (circle one): | <input type="radio"/> Casting nets <input type="radio"/> Drop-stone fishing <input type="radio"/> Spear (day) <input type="radio"/> Scoop netting <input type="text"/> Other: | <input type="radio"/> Gillnetting <input type="radio"/> Handlining <input type="radio"/> Spear (night) <input type="radio"/> Trolling | <input type="radio"/> Beach seine netting <input type="radio"/> Rod and reel <input checked="" type="radio"/> Hand collecting |
| Approx. time spent actively fishing (hrs): | <input type="text" value="30 minutes"/> | Number of fishers: | <input type="text" value="4"/> |
| Was there catch from this method (circle)? | <input checked="" type="radio"/> Yes | <input type="radio"/> No | Approx. weight (kg): <input type="text" value="3"/> |
| Habitat fished (for this method): | <input type="radio"/> Lagoon <input type="radio"/> Mangroves <input type="radio"/> Reef flat (Ocean) <input type="text"/> Other: | <input checked="" type="radio"/> Reef flat (Lagoon) <input type="radio"/> Ocean - no FAD | <input type="radio"/> Reef edge <input type="radio"/> Ocean - FAD |
| Photo number(s): | <input type="text" value="1"/> | | |
| General Comments: | <input type="text" value="Good wheater."/> | | |

| FISHING METHOD DETAILS | | |
|--|--|----------------------------------|
| Fishing method #: | <u>2</u> | |
| Fishing method used (circle one): | <input type="checkbox"/> Casting nets <input checked="" type="checkbox"/> Gillnetting <input type="checkbox"/> Beach seine netting <input type="checkbox"/> Drop-stone fishing <input type="checkbox"/> Handlining <input type="checkbox"/> Rod and reel <input type="checkbox"/> Spear (day) <input type="checkbox"/> Spear (night) <input type="checkbox"/> Hand collecting <input type="checkbox"/> Scoop netting <input type="checkbox"/> Trolling <input type="text"/> Other: | |
| Approx. time spent actively fishing (hrs): | <u>4 hrs</u> | Number of fishers: <u>4</u> |
| Was there catch from this method (circle one)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Approx. weight (kg): <u>20.5</u> |
| Habitat fished (for this method): | <input type="checkbox"/> Lagoon <input type="checkbox"/> Reef flat (Lagoon) <input checked="" type="checkbox"/> Reef edge <input type="checkbox"/> Mangroves <input type="checkbox"/> Ocean - no FAD <input type="checkbox"/> Ocean - FAD <input type="checkbox"/> Reef flat (Ocean) <input type="text"/> Other: | |
| Photo number(s): | <u>2a, 2b, 2c</u> | |
| General Comments: | <u>Good Wheeler</u> | |

| FISHING METHOD DETAILS | | |
|--|--|---------------------------------|
| Fishing method #: | <u>3</u> | |
| Fishing method used (circle one): | <input type="checkbox"/> Casting nets <input type="checkbox"/> Gillnetting <input type="checkbox"/> Beach seine netting <input type="checkbox"/> Drop-stone fishing <input type="checkbox"/> Handlining <input type="checkbox"/> Rod and reel <input checked="" type="checkbox"/> Spear (day) <input type="checkbox"/> Spear (night) <input type="checkbox"/> Hand collecting <input type="checkbox"/> Scoop netting <input type="checkbox"/> Trolling <input type="text"/> Other: | |
| Approx. time spent actively fishing (hrs): | <u>30 min</u> | Number of fishers: <u>4</u> |
| Was there catch from this method (circle one)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Approx. weight (kg): <u>2.1</u> |
| Habitat fished (for this method): | <input type="checkbox"/> Lagoon <input type="checkbox"/> Reef flat (Lagoon) <input checked="" type="checkbox"/> Reef edge <input type="checkbox"/> Mangroves <input type="checkbox"/> Ocean - no FAD <input type="checkbox"/> Ocean - FAD <input type="checkbox"/> Reef flat (Ocean) <input type="text"/> Other: | |
| Photo number(s): | <u>3</u> | |
| General Comments: | <u>Good Wheeler</u> | |

C (i): Fishing Context Survey

| FISHING CONTEXT SURVEY | | | |
|-----------------------------|--|--|--|
| Data collector name: | <input type="text"/> | Survey number: | <input type="text"/> |
| Survey date (DDMMYY): | <input type="text"/> / <input type="text"/> / <input type="text"/> | Linking catch survey number: | <input type="text"/> |
| Island: | <input type="text"/> | Community/village: | <input type="text"/> |
| Fisher/Collector name: | <input type="text"/> | Fisher/Collector gender: | <input type="text"/> |
| Fisher/Collector age: | <input type="text"/> | Fisher/Collector contact details: | <input type="text"/> |
| Consent obtained? (circle): | <input type="button" value="Yes"/> | <input type="button" value="No"/> | |
| | | First time answering this survey?(circle): | <input type="button" value="Yes"/> <input type="button" value="No"/> |

| QUESTIONS - ASK FIRST TIME ONLY | RESPONSE |
|--|---|
| i What 3 main gears do you normally catch or collect with <i>now</i> ? | 1. <input type="text"/> 2. <input type="text"/> 3. <input type="text"/> |
| ii What 3 main species do you normally catch or collect <i>now</i> ? | 1. <input type="text"/> 2. <input type="text"/> 3. <input type="text"/> |
| iii How long have you been fishing and/or gleaning/collecting for? | Years: <input type="text"/> Months: <input type="text"/> |

| QUESTIONS - ASK EVERY TIME | RESPONSE | | |
|--|---|--|---|
| 1a <i>In the last 7 days, did you go fishing, collecting, both, did not go?</i> | <input type="checkbox"/> Fishing <input type="checkbox"/> Collecting <input type="checkbox"/> Fishing AND Collecting <input type="checkbox"/> Did not Fish or Collect | | |
| 1b <i>In the last 7 days, how many times did you go per activity listed (#)?</i> | Times per activity(#): <input type="text"/> Fishing <input type="text"/> Collecting | | |
| 2 <i>In the last 7 days, what were the 4 main fish/ invertebrate types you caught?</i> | <table border="0"> <tr> <td> Fish: <input type="checkbox"/> Tuna <input type="checkbox"/> Other pelagic/ deep sea <input type="checkbox"/> Deep sea bottom <input type="checkbox"/> Reef fish <input type="checkbox"/> Sharks and rays <input type="checkbox"/> Other fish (specify) <input type="text"/> <input type="checkbox"/> Other seafood (specify) <input type="text"/> </td> <td> Invertebrates: <input type="checkbox"/> Sea cucumber <input type="checkbox"/> Lobster <input type="checkbox"/> Crab <input type="checkbox"/> Clam <input type="checkbox"/> Trochus <input type="checkbox"/> Cockles <input type="checkbox"/> Octopus <input type="checkbox"/> Urchin <input type="checkbox"/> Snail </td> </tr> </table> | Fish: <input type="checkbox"/> Tuna <input type="checkbox"/> Other pelagic/ deep sea <input type="checkbox"/> Deep sea bottom <input type="checkbox"/> Reef fish <input type="checkbox"/> Sharks and rays <input type="checkbox"/> Other fish (specify) <input type="text"/> <input type="checkbox"/> Other seafood (specify) <input type="text"/> | Invertebrates: <input type="checkbox"/> Sea cucumber <input type="checkbox"/> Lobster <input type="checkbox"/> Crab <input type="checkbox"/> Clam <input type="checkbox"/> Trochus <input type="checkbox"/> Cockles <input type="checkbox"/> Octopus <input type="checkbox"/> Urchin <input type="checkbox"/> Snail |
| Fish: <input type="checkbox"/> Tuna <input type="checkbox"/> Other pelagic/ deep sea <input type="checkbox"/> Deep sea bottom <input type="checkbox"/> Reef fish <input type="checkbox"/> Sharks and rays <input type="checkbox"/> Other fish (specify) <input type="text"/> <input type="checkbox"/> Other seafood (specify) <input type="text"/> | Invertebrates: <input type="checkbox"/> Sea cucumber <input type="checkbox"/> Lobster <input type="checkbox"/> Crab <input type="checkbox"/> Clam <input type="checkbox"/> Trochus <input type="checkbox"/> Cockles <input type="checkbox"/> Octopus <input type="checkbox"/> Urchin <input type="checkbox"/> Snail | | |
| | <div>Comment</div> <input type="text"/> | | |

QUESTIONS - ASK EVERY TIME cont.

RESPONSE

3 *In the last 7 days, what were the 3 main fishing methods you used for fishing?*

- | | |
|-------------------------------------|---|
| <input type="checkbox"/> Net | <input type="checkbox"/> Spearfish (night) |
| <input type="checkbox"/> Handline | <input type="checkbox"/> Spearfish (day) |
| <input type="checkbox"/> Drop stone | <input type="checkbox"/> Gleaning/ collecting |
| <input type="checkbox"/> Trolling | <input type="checkbox"/> Other (specify) |

4 *In the last 7 days, how much catch (in kg) did you catch in total?*

 kg

5 *In the last 7 days, has a local closed area (e.g. tabu) been opened for fishing?*

- | | |
|------------------------------|---|
| <input type="checkbox"/> Yes | <input type="checkbox"/> I don't know |
| <input type="checkbox"/> No | <input type="checkbox"/> There are no local areas closed to fishing |

6 *In the last 7 days, please identify all days fished/ collected.*

If you did not fish or glean/ collect, leave the day and activity blank.

| DAY | Fishing | Collecting | Comments |
|-----|---------|------------|----------|
|-----|---------|------------|----------|

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

7 How long does it take you to travel to your main fishing/ collecting ground?

Hours

Minutes

Comment

| QUESTIONS - ASK EVERY TIME cont. | RESPONSE | | | | | | | | | | | | | | | | | | | |
|---|---|--|---------------------------------|--|--------------------------|-----------------------------------|--|--------------------------|-------------------------------|--|--------------------------|---------------------------------------|--|--------------------------|---------------------------------------|--|--------------------------|---------------------------------------|--|--------------------------|
| For questions 8-11 answer if <i>since the last survey (in the last 12 months if first village survey)</i> | | | | | | | | | | | | | | | | | | | | |
| 8a | Have you changed your <i>main</i> fishing/collecting location? (If yes, see 8b and 8c) | 8c If yes, explain why you have changed locations: | | | | | | | | | | | | | | | | | | |
| | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | | | | | | | | | | | |
| 8b | If yes, is the new location closer, farther, about the same distance from your village than your previous location(s)? | | | | | | | | | | | | | | | | | | | |
| | <input type="checkbox"/> Closer <input type="checkbox"/> Further <input type="checkbox"/> Same | | | | | | | | | | | | | | | | | | | |
| 9 | Does it take you more, less, about the same time to catch/collect the same number of fish and/or invertebrates? | <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%; text-align: left;">Fish</th> <th style="width: 33%;"></th> <th style="width: 33%; text-align: right;">Invertebrates</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> More</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Less</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Same</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> I don't know</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Not relevant</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> </tbody> </table> | Fish | | Invertebrates | <input type="checkbox"/> More | | <input type="checkbox"/> | <input type="checkbox"/> Less | | <input type="checkbox"/> | <input type="checkbox"/> Same | | <input type="checkbox"/> | <input type="checkbox"/> I don't know | | <input type="checkbox"/> | <input type="checkbox"/> Not relevant | | <input type="checkbox"/> |
| Fish | | Invertebrates | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> More | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Less | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Same | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> I don't know | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Not relevant | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| 10 | Are you catching/collecting more, less, about the same <i>total number</i> of fish and/or invertebrates? | <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 33%;"><input type="checkbox"/> More</td> <td style="width: 33%;"></td> <td style="width: 33%; text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Less</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Same</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> I don't know</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Not relevant</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> </tbody> </table> | <input type="checkbox"/> More | | <input type="checkbox"/> | <input type="checkbox"/> Less | | <input type="checkbox"/> | <input type="checkbox"/> Same | | <input type="checkbox"/> | <input type="checkbox"/> I don't know | | <input type="checkbox"/> | <input type="checkbox"/> Not relevant | | <input type="checkbox"/> | | | |
| <input type="checkbox"/> More | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Less | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Same | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> I don't know | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Not relevant | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| 11 | Are you catching/collecting larger, smaller, about the same <i>size</i> of fish and/or invertebrates? | <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 33%;"><input type="checkbox"/> Larger</td> <td style="width: 33%;"></td> <td style="width: 33%; text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Smaller</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Same</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> I don't know</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Not relevant</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> </tbody> </table> | <input type="checkbox"/> Larger | | <input type="checkbox"/> | <input type="checkbox"/> Smaller | | <input type="checkbox"/> | <input type="checkbox"/> Same | | <input type="checkbox"/> | <input type="checkbox"/> I don't know | | <input type="checkbox"/> | <input type="checkbox"/> Not relevant | | <input type="checkbox"/> | | | |
| <input type="checkbox"/> Larger | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Smaller | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Same | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> I don't know | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Not relevant | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| 12 | Since community-based fisheries management was implemented in your village/ community, has fishing/collecting improved, gotten worse, about the same? | <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 33%;"><input type="checkbox"/> Worse</td> <td style="width: 33%;"></td> <td style="width: 33%; text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Improved</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Same</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> I don't know</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/> Not relevant</td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> </tbody> </table> | <input type="checkbox"/> Worse | | <input type="checkbox"/> | <input type="checkbox"/> Improved | | <input type="checkbox"/> | <input type="checkbox"/> Same | | <input type="checkbox"/> | <input type="checkbox"/> I don't know | | <input type="checkbox"/> | <input type="checkbox"/> Not relevant | | <input type="checkbox"/> | | | |
| <input type="checkbox"/> Worse | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Improved | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Same | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> I don't know | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Not relevant | | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | |
| 13a | In your village, are there local restrictions on how to fish? (Species, areas, methods, gear etc.) | <input type="checkbox"/> Yes (if yes, see 13b) <input type="checkbox"/> No | | | | | | | | | | | | | | | | | | |
| 13b | If yes, are people following these fishing restrictions? (circle one). | <div style="display: flex; align-items: center; justify-content: space-between;"> 1 2 3 4 5 </div> <div style="display: flex; align-items: center; justify-content: space-between; margin-top: 5px;"> None followed ● ➔ All followed </div> | | | | | | | | | | | | | | | | | | |
| | Write any comments. | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| 14 | Do you have any concerns about your <i>local fisheries resources</i> ? | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| 15 | Do you have any more comments? | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |

C (ii): Fishing Context Survey Example

| Qualitative catch and effort monitoring survey TAK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--|--|---------|------------|-----------|--------|---|---|--------------------------------------|--------|---|---|---------|---|---|-----------|---|---|----------|---|---|--------|---|---|----------|---|---|--|
| Data collector name: [redacted] | | Survey number: 004 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Survey date (ddmmyy): 08/07/2020 | | Linking catch survey number: 005 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fisher/Collector name: S. [redacted] | | Island: N. E. FATE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fisher/Collector gender: MALE | | Community/Village: TAKARA | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fisher/Collector age: 53 | | Fisher/Collector contact details: [redacted] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Consent obtained (circle): Yes | | First time answering this survey (circle): Yes No | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q# | Question – ASK FIRST TIME ONLY | Response | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i | What 3 main gears do you normally catch or collect with? | 1. Gillnetting 2. Spear (night) 3. - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ii | What 3 main species do you normally catch or collect? | 1. Reef fish 2. - 3. - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| iii | How long have you been fishing and/or gleaning/collecting for? | Years: 39 Months: - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Q# | Question – ASK EVERY TIME | Response | Comment | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1a | In the last 7 days, did you go fishing, collecting, both, did not go? | <input checked="" type="checkbox"/> Fishing <input type="checkbox"/> Collecting <input type="checkbox"/> Fishing and Collecting <input type="checkbox"/> Did not Fish or Collect | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1b | In the last 7 days, how many times did you go per activity listed (#)? | Times per activity (#): <input checked="" type="checkbox"/> Fishing <input type="checkbox"/> Collecting | always fishing no Collecting | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | In the last 7 days, what were the 4 main fish/invertebrate types you caught? | FISH <input type="checkbox"/> Tuna <input type="checkbox"/> Other pelagic/ deep sea <input type="checkbox"/> Deep sea bottom <input checked="" type="checkbox"/> Reef fish <input type="checkbox"/> Sharks and rays <input type="checkbox"/> Other fish (<i>specify</i>) | INVERTEBRATES <input type="checkbox"/> Sea cucumber <input type="checkbox"/> Lobster <input type="checkbox"/> Crab <input type="checkbox"/> Clam <input type="checkbox"/> Trochus <input type="checkbox"/> Cockles <input type="checkbox"/> Octopus <input type="checkbox"/> Urchin <input type="checkbox"/> Snail <input type="checkbox"/> Other seafood (<i>specify</i>) <input checked="" type="checkbox"/> None caught | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | In the last 7 days, what were the 3 main fishing methods you used for fishing? | <input checked="" type="checkbox"/> Net <input type="checkbox"/> Handline <input type="checkbox"/> Drop stone <input type="checkbox"/> Trolling | <input type="checkbox"/> Spearfish (night) <input type="checkbox"/> Spearfish (day) <input type="checkbox"/> Gleaning/collecting <input type="checkbox"/> Other (<i>specify</i>) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | In the last 7 days, how much catch (in kg) did you catch in total? | 20 kg | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | In the last 7 days, has a local closed area (e.g. tabu) been opened for fishing? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <input type="checkbox"/> I don't know <input type="checkbox"/> There are no local areas closed to fishing | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | In the last 7 days, please identify all days fished/collected . If you did not fish or glean/collect, leave the day and activity blank. | <table border="1"> <thead> <tr> <th>Day</th> <th>Fishing</th> <th>Collecting</th> <th>Comments:</th> </tr> </thead> <tbody> <tr> <td>Sunday</td> <td>-</td> <td>-</td> <td rowspan="7">using gillnet all this times.</td> </tr> <tr> <td>Monday</td> <td>✓</td> <td>-</td> </tr> <tr> <td>Tuesday</td> <td>✓</td> <td>-</td> </tr> <tr> <td>Wednesday</td> <td>✓</td> <td>-</td> </tr> <tr> <td>Thursday</td> <td>✓</td> <td>-</td> </tr> <tr> <td>Friday</td> <td>✓</td> <td>-</td> </tr> <tr> <td>Saturday</td> <td>-</td> <td>-</td> </tr> </tbody> </table> | Day | Fishing | Collecting | Comments: | Sunday | - | - | using gillnet all this times. | Monday | ✓ | - | Tuesday | ✓ | - | Wednesday | ✓ | - | Thursday | ✓ | - | Friday | ✓ | - | Saturday | - | - | |
| Day | Fishing | Collecting | Comments: | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sunday | - | - | using gillnet all this times. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monday | ✓ | - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tuesday | ✓ | - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wednesday | ✓ | - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thursday | ✓ | - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Friday | ✓ | - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Saturday | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|-----|---|--|--|
| 7 | How long does it take you to travel to your <u>main</u> fishing/collecting ground? | <input checked="" type="checkbox"/> Hours <input checked="" type="checkbox"/> Minutes | Comment At the Shoreline he had to wait for low tide. |
| 8a | Since the last Pathways survey (in the last 12 months if first village survey), have you changed your <u>main</u> fishing/collecting location? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| 8b | If yes, is the new location closer, farther, about the same distance from your village than your previous location(s)? | <input type="checkbox"/> Closer <input type="checkbox"/> Further <input type="checkbox"/> Same | |
| 8c | If yes, explain why you have changed locations in the comments. | Explain why: | |
| 9 | Since the last Pathways survey (in the last 12 months if first village survey), does it take you more, less, about the same time to catch/collect the same number of fish and/or invertebrates? | FISH <input type="checkbox"/> More <input type="checkbox"/> Less <input checked="" type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant INVERTEBRATES <input type="checkbox"/> More <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input checked="" type="checkbox"/> Not relevant | |
| 10 | Since the last Pathways survey (in the last 12 months if first village survey), are you catching/collecting more, less, about the same total number of fish and/or invertebrates? | FISH <input checked="" type="checkbox"/> More <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant INVERTEBRATES <input type="checkbox"/> More <input type="checkbox"/> Less <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input checked="" type="checkbox"/> Not relevant | |
| 11 | Since the last Pathways survey (in the last 12 months if first village survey), are you catching/collecting larger, smaller, about the same size of fish and/or invertebrates?? | FISH <input type="checkbox"/> Larger <input type="checkbox"/> Smaller <input checked="" type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant INVERTEBRATES <input type="checkbox"/> Larger <input type="checkbox"/> Smaller <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input checked="" type="checkbox"/> Not relevant | |
| 12 | Since community-based fisheries management was implemented in your village/community, has fishing/collecting improved, gotten worse, about the same? | FISHING <input type="checkbox"/> Improved <input type="checkbox"/> Worse <input checked="" type="checkbox"/> Same <input type="checkbox"/> I don't know <input type="checkbox"/> Not relevant COLLECTING <input type="checkbox"/> Improved <input type="checkbox"/> Worse <input type="checkbox"/> Same <input type="checkbox"/> I don't know <input checked="" type="checkbox"/> Not relevant | |
| 13a | In your village, are there local restrictions on how to fish? (Species, areas, methods, gear etc.) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| 13b | If yes, are people following these fishing restrictions? (circle one of number 1-5, where 1 = None followed and 5 = All followed) | 1 2 3 4 5 | |
| | Write any comments. | | Taken area still restricted. |
| 14 | Do you have any concerns about your local <u>fisheries resources</u> ? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| | If yes, describe concerns in comments. | | |
| 15 | Do you have any more comments? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Taken area always improve the fisheries resources in Village livelihood. |
| | If yes, describe in comments section. | | |

D: Catch Monitor Field Notes Observation Form

As a catch monitor recording information about community fisheries, you will have a first-hand view of what is being studied. It is therefore important for you to write down anything that you think could affect the collection of fisheries data during the survey trips (positive and negative!). These observations help the project team to better understand the patterns in the data when it comes time to analyse it.

Your field notes may overlap occasionally with or contribute to the information provided for the field trip reports but they are not the same thing. Field notes should largely focus on observations around data collection activities specifically, not for the trip on the whole.

The following pages provide day-by-day diary for you to write your field notes. Please write something every day. If you have more to say than the space allows, extra pages are provided. Please write clearly to assist data analysts.

COPY FOLLOWING TEMPLATE AS REQUIRED FOR DAYS NEEDED.

D: Field Notes Daily Diary

ENUMERATOR NAME:

VILLAGE/COMMUNITY:

DAY 1 - Date:

Special event (and details):

DAY 2 - Date:

Special event (and details):

Field Notes Daily Diary

DAY 3 - Date:

Special event (and details):

DAY 4 - Date:

Special event (and details):

Catch photo labels

| | | | |
|-----------|-------|----------------|---------|
| COMMUNITY | MM/YY | CATCH SURVEY # | PHOTO # |
| | | | |

| | | | |
|-----------|-------|----------------|---------|
| COMMUNITY | MM/YY | CATCH SURVEY # | PHOTO # |
| | | | |

| | | | |
|-----------|-------|----------------|---------|
| COMMUNITY | MM/YY | CATCH SURVEY # | PHOTO # |
| | | | |

