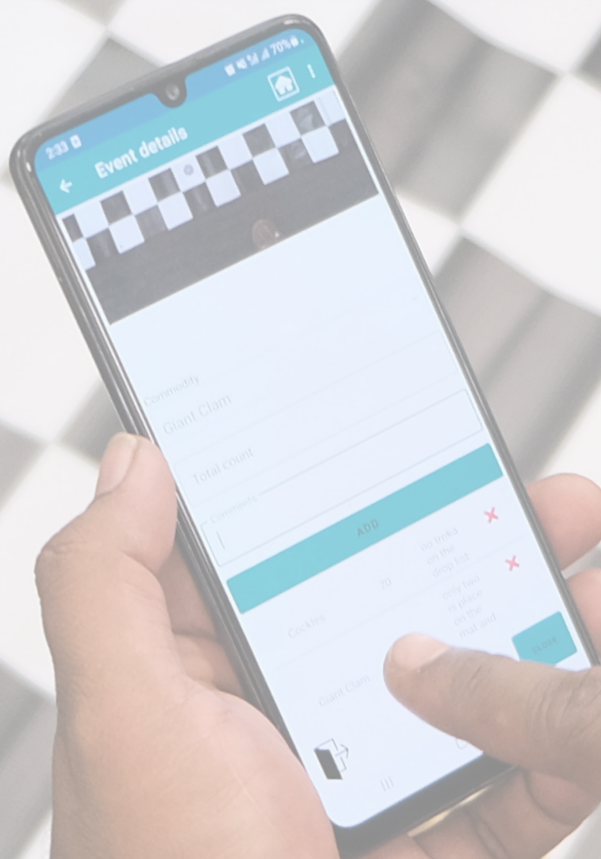


IKASAVEA COMMUNITY SURVEY



Technical Manual for Data Collectors

Version 1.2, January 2024



1

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INTRODUCTION TO THE MANUAL

Technical Manual for Data Collectors

This manual is one of three designed to support the use of the Ikasavea Community Survey:

1. **Technical Manual for Data Collectors**
2. *Workshop Manual for Data Coordinators*
3. *Data Management Manual for Data Coordinators*

This technical manual is a step-by-step guide for data collectors 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 data collectors are part of a larger CBFM team that either is a part of, or is in direct collaboration with, national government.

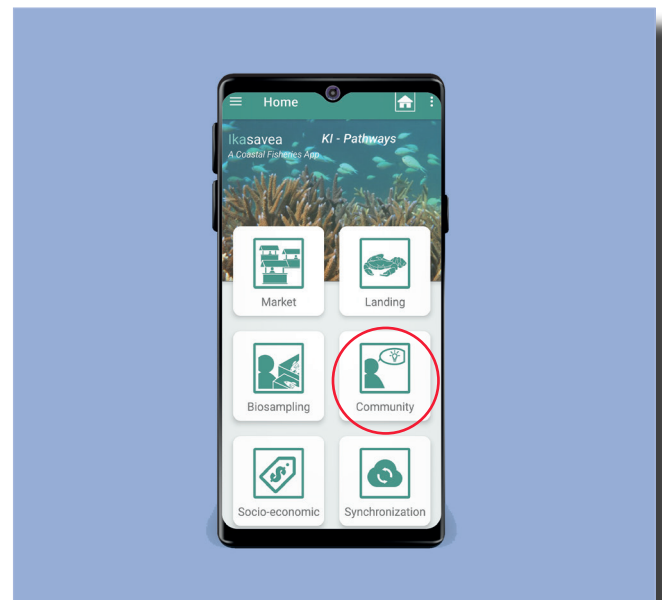
This manual therefore also serves as a process reference document for catch monitoring coordinators or other supervising staff.

The **catch monitoring approach described in this manual** is based on a pilot catch monitoring program 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**
- **Catch survey**
- **Fishing context survey**

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 data collector on the beach.



Ikasavea launch screen.

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

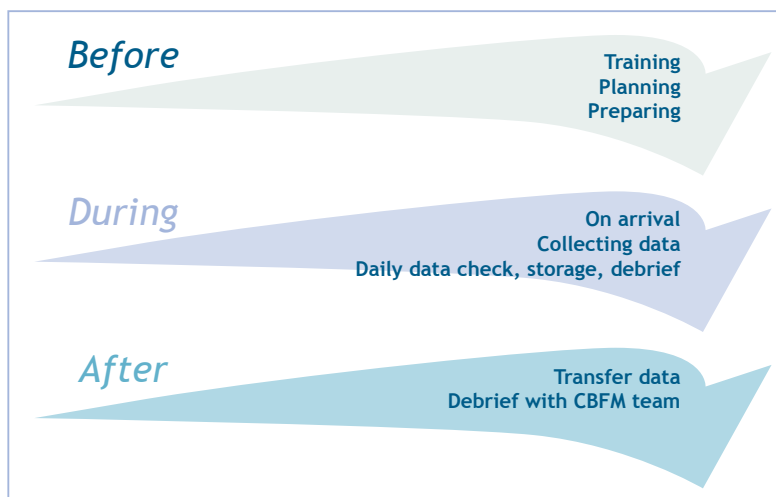


Figure 1. Stages of catch monitoring data collection

CBFM optimised fishery monitoring program

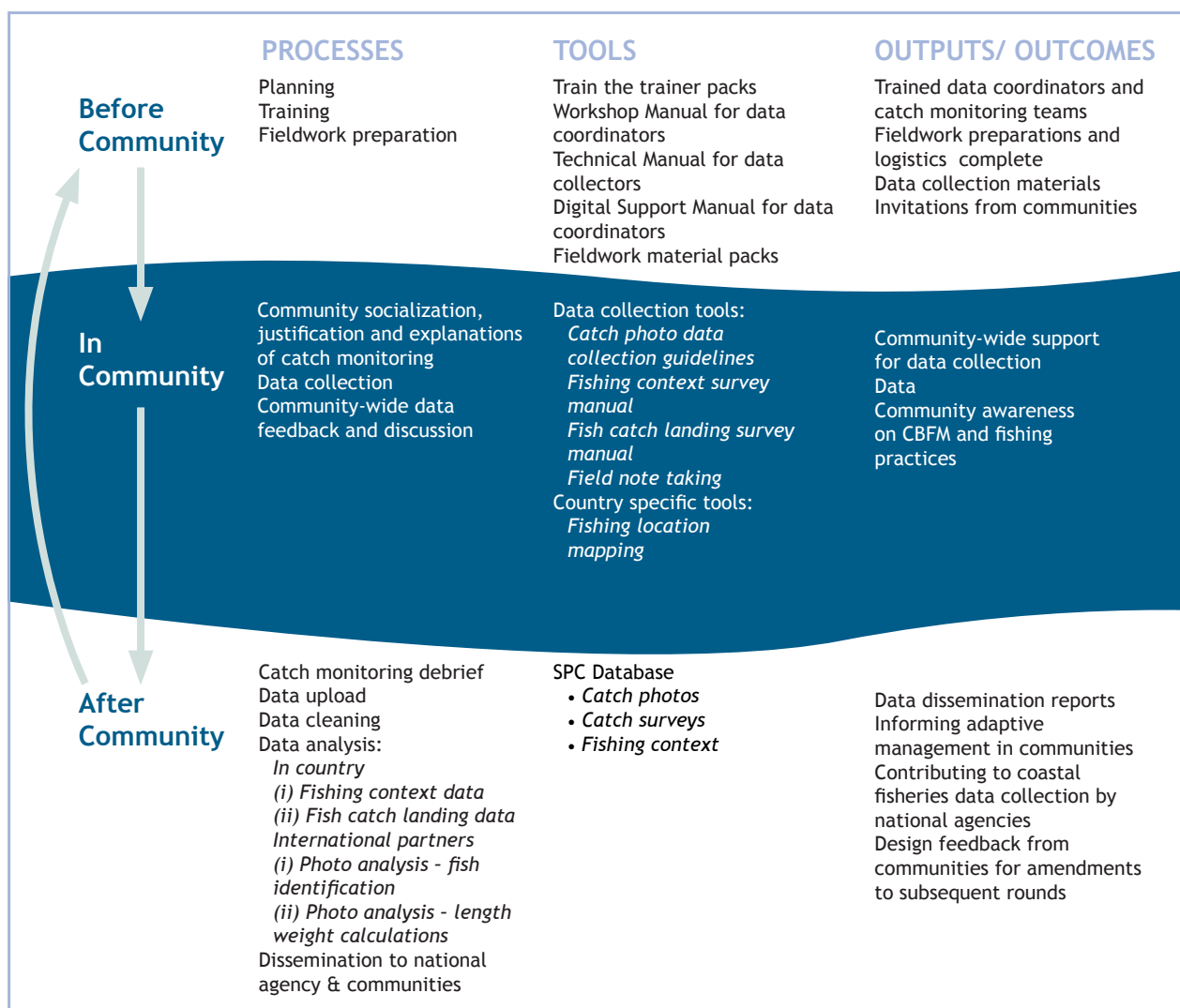


Figure 2. CBFM optimised catch monitoring programme



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

*“[They] really care a lot,
[thus the aesthetic arrangement of this photo].”*

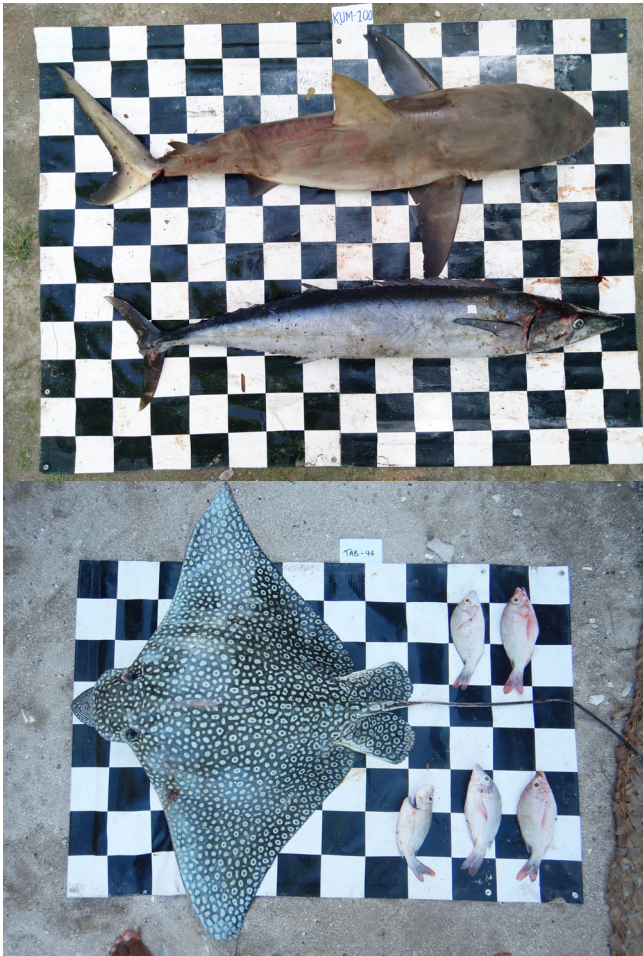
We asked people to please lay the fish out as neatly as possible so that we could measure them as accurately as possible using the 10x10cm grids as a reference.

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 program 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 Grey Reef Shark (*Carcharhinus amblyrhynchos*) and a Spotted Eagle Ray (*Aetobatus narinari*).

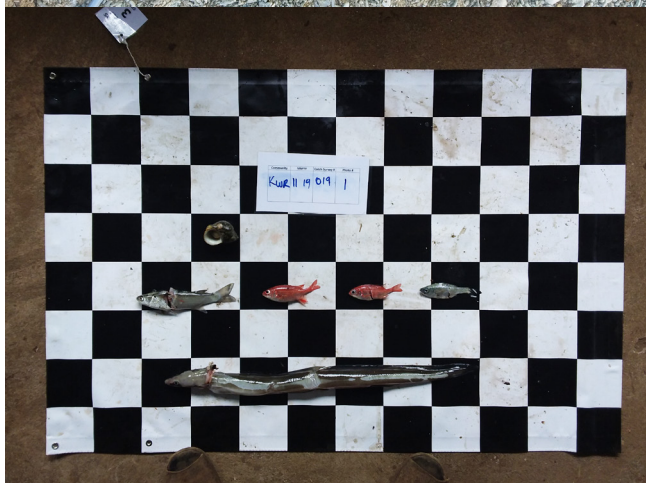


Tremendous diversity:

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 programs 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 the Ikasavea community survey app via:

1. A catch survey;
2. A fishing context survey;
3. Photos of catch; and,
4. Data collector 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 data collectors

Data collectors have one of the most important jobs in a catch monitoring program. 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 programs.

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 data collectors travel to a particular community or group of communities to collect daily fisheries catch data.

Catch monitor training

This manual assumes that data collectors have already received their basic data collector training.

See Workshop 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, data collectors 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 data collectors available for a given survey trip.

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

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

For example, female fishers and invertebrate collectors may feel more comfortable talking to female data collectors for personal or

cultural reasons. In this case, data collection would be most effective with either one or two female data collectors, or with one male and one female data collector. The reverse may be true for male fishers and invertebrate collectors, who may feel more comfortable talking to a male data collector.

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, data collectors 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, data collectors should make sure that all of the materials they need for the survey trip are gathered, organised and, if necessary, labelled.

Data collectors 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.

Systems check

Please ensure that each device is running the Ikasavea community survey smoothly before taking/sending them out into the field. As a data collector, please:

1. Make sure that the device has been set to the correct survey and surveyors for this trip: Home > Settings. [**“Settings - survey selection - Noumea test”**; **“Settings - surveyor selection”** and **anonymise**]
2. Run through both the catch and fishing context surveys using a “test survey” created by your data coordinator to ensure they operate smoothly:
 - a. Make sure that photos can be checked
 - b. Make sure that survey answers can save, and can be both reviewed and adjusted
 - c. Make sure that data can be recorded in all relevant fields*
 - d. Make sure your data coordinator can back up and synchronise the data from your tablet to the SPC-FAME servers

**It is strongly recommended that you perform Step 2 while the tablet is connected to the internet. This way the staff at SPC are notified immediately when an error occurs.*

If you encounter errors and issues, **please ask your data coordinator** to do the following:

- Check to see that Ikasavea has been updated to the most recent version
- Try updating and restarting the device
- Try re-installing Ikasavea (i.e. uninstall it, and then re-install it)

If you keep experiencing any issues, we suggest you ask your data coordinator to reach out to SPC-FAME for assistance.

It will be most helpful if your **data coordinator** can provide the particularities of your device (i.e. brand, model number etc.), the name of the

DEDICATED BAG OR BACKPACK FOR CARRYING SUPPLIES:

- Catch mats (as illustrated in Appendix F.)
- Plastic tarpaulin(s) to protect fishers’ catch
- Tablets **fully charged** and synced to the correct survey form
- Chargers, battery back-ups and cables for tablets
- Field notes form or notebook
- Clipboard
- Something to store tablets in so they stay dry and organised
- 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)

ALSO CONSIDER THE FOLLOWING AS BACK-UPS IN CASE TABLETS FAIL:

- Catch photo label for Catch mat
- Pens and/or pencil with eraser and sharpener or spare lead
- Paper survey forms as back-up: ~100 copies per form for each community (assuming no printer in communities)

A checklist for materials to bring is in Appendix A. Catch mats and measurements are in Appendix F.



Image: An example of numbered and labelled materials that teams in Kiribati have brought with them on catch monitoring data collection trips. Beia Nikiari, 2022.

survey created and synchronised to the tablet(s) with the issue, and the authority that created the survey.

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

DURING DATA COLLECTION IN COMMUNITIES

During

On arrival
Collecting data
Daily data check, storage, debrief

On arrival in communities, data collectors 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 surveys that you are about to use

This section briefly covers engaging with community members prior to beginning data collection, followed by detailed instructions on how to fill out the surveys, 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.

On arrival in communities

On arrival in communities, one or more members of the data collecting 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 data collectors 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 data collectors. Data collectors should be prepared to answer questions and respond to concerns and suggestions.

If data collectors 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.

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 data collectors one more time to make sure everyone is aware of what the plan is, that everyone has the appropriate equipment, and where each data collector will be stationed etc.

Collecting data in communities

Data collectors 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 **Ikasavea community survey app**, via three streams:

- A **fishing context survey**, which collects longer range data outside of the field trip;
- **Catch survey(s)**, which focus on surveying fishers/collectors as they come in from the beach or from the sea with their catch;

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*:

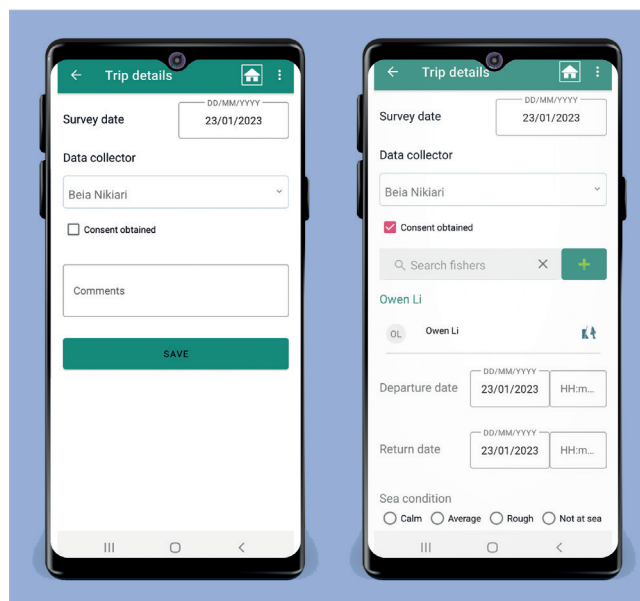
- Why you would like to collect data;
- Briefly, what data you would like to collect;
- Why the voluntary participation of fishers and invertebrate collectors is an important part of the success of the community fisheries management plan and of understanding more about fishing activities in their community;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

- **Photographs of the catch** on a gridded Catch mat; and
- **Data collector 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 data collector directly (in the ‘first person’).

For further resources on data collection training, also refer to the **Workshop Manual**.

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



Left, the page view when consent has NOT been obtained, and, right, after consent has been obtained.

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 portion of the app

There are many examples of different catch surveys 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. Length and species data is collected using the photos taken using the app, and the questions focus on answering details about habitats, fishing locations, economic costs or markets.

The full list of questions for the catch survey is found in Appendix B.

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)** must also be asked to answer the **fishing context survey (p21)**.

Immediately after completing the surveys, check, and double-check to make sure all sections of the surveys 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.

MOST IMPORTANTLY:

Fill out all fields on the catch survey.

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

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

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

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

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

Collector details

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.

Consent obtained:

The data collector must ask each fisher/collector to confirm that they agree to take part in the survey. If they give their consent to participate, select yes. If they do not agree, the Ikasavea app will prevent you from proceeding.

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

Survey date:

The departure date and time field are where you enter when the fisher first left to go on their trip.

The return date and time field is where you enter when they came back from their trip - the time recorded here might be earlier than the time that the survey is actually being conducted. That is completely fine.

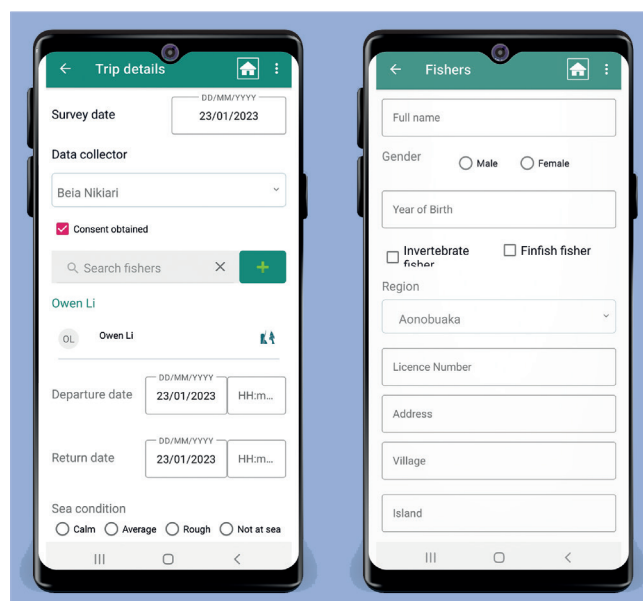
Fisher/Collector name:

If the community has been surveyed before, the app automatically carries a list of fishers who have been surveyed there previously.

Once you start typing a name, a list of suggestions will appear in the drop-down below. Only add a fisher, if their name does NOT appear in the drop-down. Otherwise, simply tap their name to select that fisher.

Enter the first **and** last name 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.



Left, consent obtained and, right, adding a fisher.

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 year of birth: The year of birth is sufficient, no need for the month or date, or to calculate age.

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.

Fishing trip details

Departure date:

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

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.

Data collectors should fill out **one survey** per **fishing trip** per **person**.

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.

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: Chose the option that most reflects the conditions faced by the fisher/collector.

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 events: Each fishing event corresponds to a single method and single habitat. Each time your fisher/collector uses a different method, or visits a different habitat, you will need to count it in the box marked “How many fishing events...” and push “add event” to fill in another form.

Screen showing fishing trip details.

Boat type: Click one. Select ‘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.

Examples:

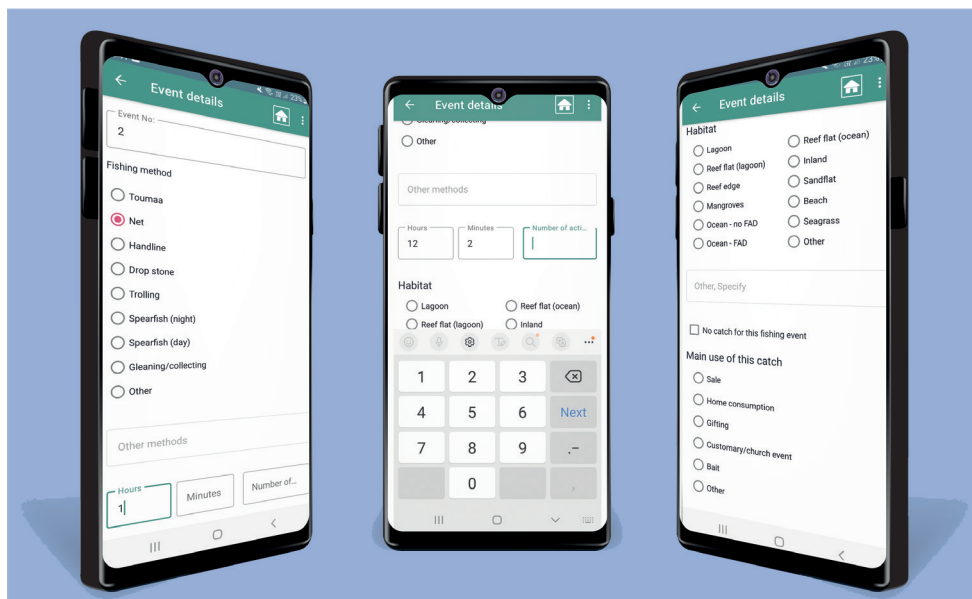
If a fisher does handlining and trolling on the same fishing trip (See fishing method definition, next page).

Traveling to or from a primary fishing site with a trolling line in the water also 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: Tick only one of the options: More difficult; about the same; easier.

Comments: Please record any extra information here that you do not feel is captured by the survey in its present version.



Screen showing event details.

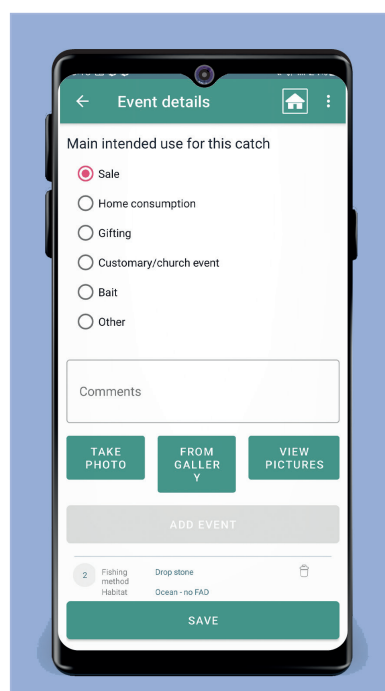
FILL OUT A NEW ‘EVENT’ SECTION FOR EACH FISHING METHOD USED IN A SINGLE FISHING TRIP.

The number of ‘fishing method’ sections filled in per survey should be the same as the number of methods written in the TRIP DETAILS 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 complete a catch survey with 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.



Record events, even if there are zero catches.

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.

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

Fishing method used:

Select one method used to harvest catch. If 'other' is selected, type the method used.

The app will only allow you to select one method per fishing event. Please ensure that only those fish/invertebrates harvested using that method are on the mat and in the photos taken for that specific event.

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 methods'. 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 and/or minutes, 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, select '0' hours and type in the number of minutes.

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

For more on different scenarios, see [Workshop Manual](#).

Number of active fishers: Type 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.

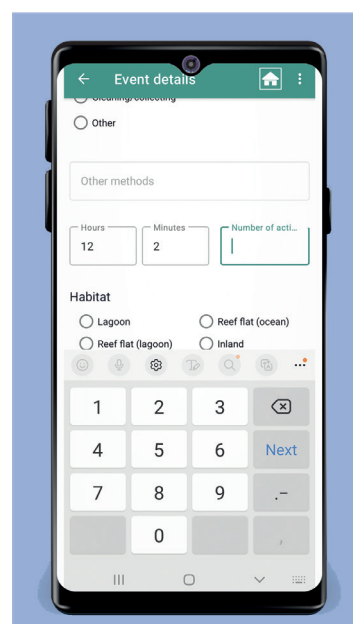
Sometimes the specific fisher you are surveying may have been out in a boat with multiple people. When this happens it may mean that the catch you are now surveying is larger than if the fisher had been out fishing alone.

It may also have taken 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:

Choose 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.



Time spent fishing should be recorded in hours and/or minutes.

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

Push **save**, then **take a photo** of the catch displayed on the mat.

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, please make sure to tick the box marked 'No catch for this fishing event' in the catch survey.

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.

Type what the challenge was and how you tackled it in the comments box. If the same situation arises again, be consistent and do the same thing again.

Debrief with your fellow data collectors, and if necessary your data 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



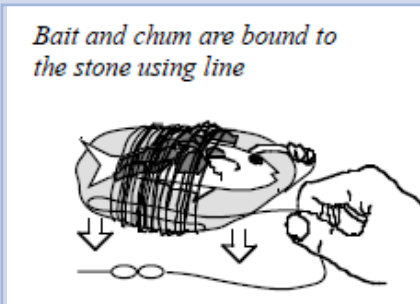
Cast netting



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



Trolling



Spearfishing (hand and gun)



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 catch mat and then carefully taking a 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 data collectors to identify, measure and weigh the 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 the Workshop Manual.

HOW TO USE THE CATCH MAT FOR CATCH SAMPLING

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

1. Lay the gridded Catch 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.

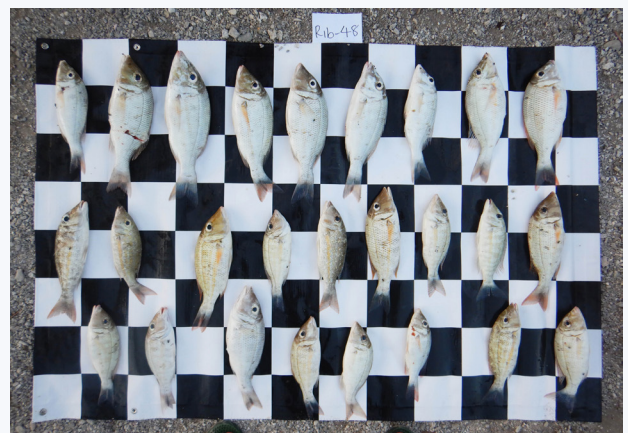
2. For each unique 'fishing method' event (see definitions in the section starting p.10.) place all fish, shells, etc. caught on the mat.

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, all four corners of the mat are 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 images 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.

**For tricky catch photo situations, see 'Tips for tricky photo situations'.

HOW TO USE THE CATCH 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 data collectors to come up with a consistent solution, and check in with your data coordinator if possible. Make detailed notes about what you did.

If you are using an SPC mat, then please ensure at least four of the symbols are visible, without three of the four symbols visible on a single side. See examples below.

Also see [Tips for tricky photo situations, following.](#)



Example 1: INCORRECT

- Four (4) registration dots need to be visible
- If only four (4) dots are visible, three (3) of the registration dots cannot be on the same side of the catch mat



Example 2: INCORRECT

- Four (4) registration dots need to be visible
- If only four (4) dots are visible, three (3) of the registration dots cannot be on the same side of the catch mat



Example 3: CORRECT

- Four (4) registration dots are visible
- The dots are on multiple sides of the catch mat

To see catch mat options and measurements see Appendix F.

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

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!

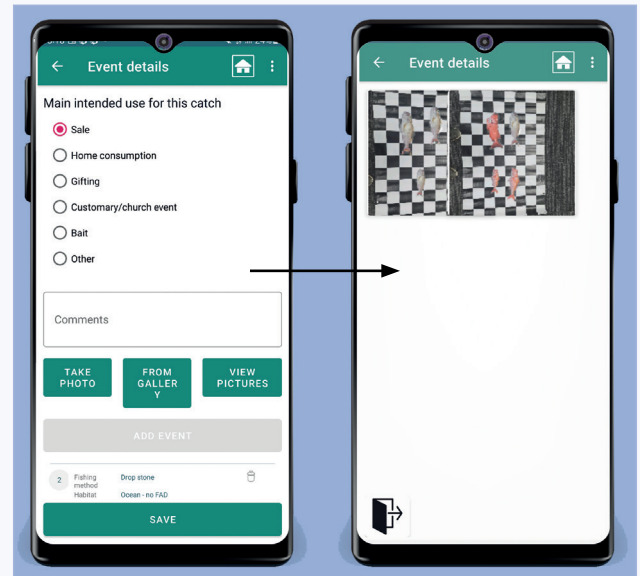
There may be more than one catch photo for a single fishing trip. For example, a fisher may have used handline AND trolling methods in the same trip. **This means you will need to take two photos.**

In some cases, for example when catches from a specific fishing method have too many fish to fit on one mat or in one photo, you may need to take multiple photos of the same fishing method.

The Ikasavea app will allow you to take several photos. Make sure you save after taking each photo, and then review them by pushing the "view pictures" button.

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

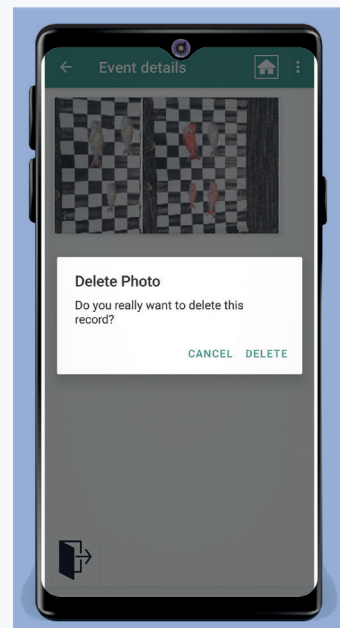
Do select the box marked 'no catch for this fishing event' if the method is associated with zero catch.



Reviewing photos on the app.

5. Deleting a photo.

To delete a photo you do not wish to keep, click on the 'view images' button, and press and hold the image you wish to delete. Once you are absolutely sure, push the delete option. Then go back to the 'Event details' and push save again before moving on.



Deleting a photo.

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.

This is a catch photo taken in the best possible way. It is a good photo because:

- The mat is laid flat, and all four corners of the mat are visible
- 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



A good example of a catch photo, within the app.

Here are some examples of 'poor' photos:

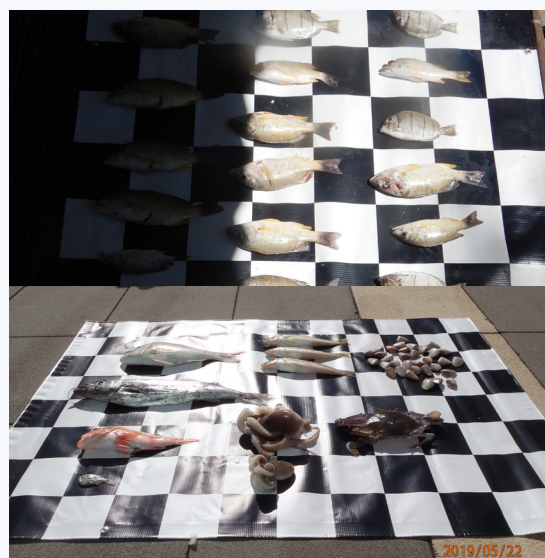
This photo has been taken in an area partly shaded from bright sunlight.

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
- Two of the corners have been left out of the photo. This makes it impossible for the AI to measure and identify any of the fish accurately



Two examples of a 'Poor' catch photo. The top example has a significant shadow across the mat and the bottom example is taken on an angle, with glare, and two corners of the mat are missing.

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).

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, please do the following:

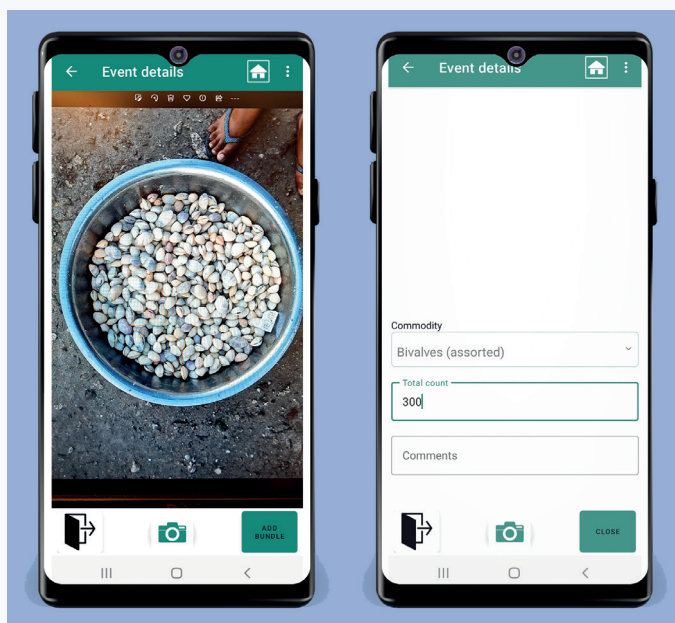
These animals **do not** need to be separated and laid out individually on the mats as most finfish will be. Please select **add bundle** (e.g. giant clam; assorted gastropod; Goldspot herring; Oysters; Sardines; Silversides; Sipunculid worms; Strawberry conch etc.) and enter the details accordingly before taking the photo.

In instances where the catch is in an opaque container, please remove a few of the animals and photograph them alongside the container for size reference.

If the container cannot be opened (e.g. live crabs), there are fields for you to enter a count, and any further notes.

Be aware, the animals recorded as bundles may differ from country to country. **We suggest you familiarize yourself with the appropriate animals before going into the field.**

1. Select "add bundle" on the app
2. Enter the required information
3. Take a random selection of small animals and lay them on the mat
4. Include the remaining animals in an open container in the photo
5. 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.
6. Take the width, length, and depth measurements of the container as well as the estimated container weight and type these into the survey comments



The app showing how to add bundles.

Very large animals:

It is possible that fish may be so large that they do not fit on a catch mat. This will NOT be an issue so long as squares on each corner of the catch mats (or at least four of the icons on an SPC issue mat, so long as those icons are distributed across at least 3 sides) are visible in the photo (see instructions p.23).

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 from 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). 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.

You might wish to take photos using a camera other than the one on your tablet, and upload those photos later - The app does have that function.

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!

Aggregated 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.

Please follow steps 1-6 as outlined for “very small animals”.

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 aggregated units and invertebrate catches that community data collectors 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.

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. Select of type **N/A** if not applicable.

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

Fishing context

Keeping track of fishers:

The Ikasavea app keeps a list of fishers from the community you are surveying, and will populate that list as you go. Before ‘adding’ a fisher/collector, please make sure that they are not already on the list from last time.

A fisher selected from the list will show in green on the app.

If the fisher/collector has already done a fishing context survey this trip, please do not fill in another.

If however, they have filled in a catch survey with someone other than yourself, but not a fishing context survey, please ask them who they did the survey with, and when, and record those details in the “Data collector’s notes” field.

Only add a new fisher/collector’s name if it is not already on the drop-down list

When adding a fisher, you have the ability to select whether that fisher is primarily an invertebrate fisher, or a finfish fisher. These are not mutually exclusive. Please select both, if the person fishes for both.

Once a fisher has been selected or added, push “next” to move on to Question 1.

‘In the last 7 days’ questions

Select the applicable options, unless a number (Question 1) or weight (Question 5) is required. Be aware that

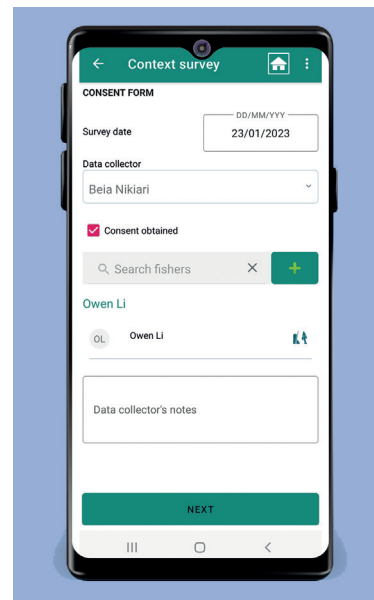
Do not include the day of the interview in the 7 days:

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).

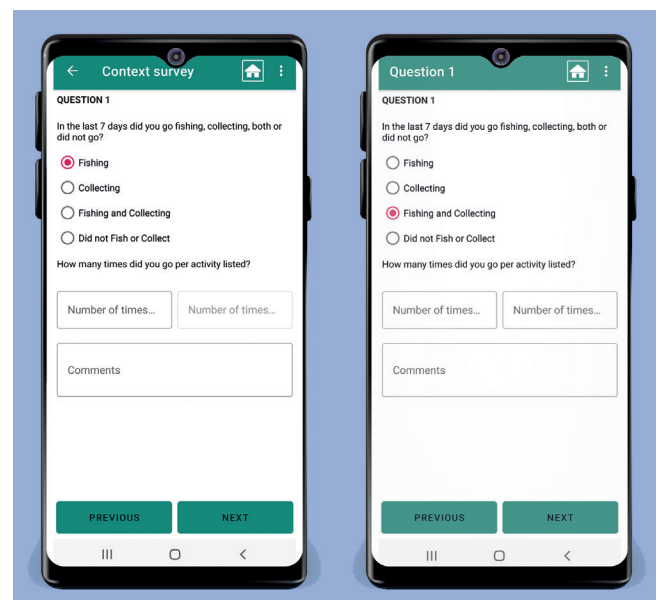
If the fisher/collector has any comments or if you want to add an explanation or clarification, put it in the comments.

Identify all days fished in last 7 days (Question 2): Starts from the day before the day of the survey.

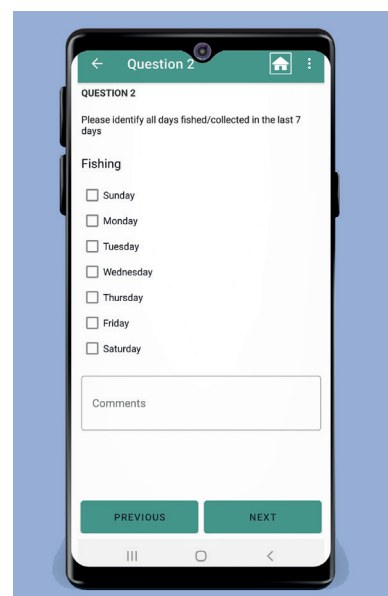
This question is designed to pick up patterns of fishing in the week before a fisher or collector is surveyed. This fishing activity could be marked as a tick for a day where fishing/collecting took place. Include any details or explanations that the fisher/collector gives you in comments.



Consent and adding fishers.



Context question 1.



Context question 2.

Catch (in kg) in last 7 days (Question 5):

An estimate of the total catch weight, in kg, for a particular method. This will probably involve adding a few numbers together on a notepad.

Question 7:

Type in 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, type it in the comments.*

'Since the last CBFM catch survey' questions

Question 8:

Select one option that most applies.

If answering YES to whether a fisher/collector has changed their most visited fishing/collecting location, you must type an explanation from the fisher/collector of why the answer is yes in the comments.

Questions 9a,b and c:

For the questions asking about fish and/or invertebrates or fishing and/or collecting, select one option under each heading.

Question 10:

In this question, 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.

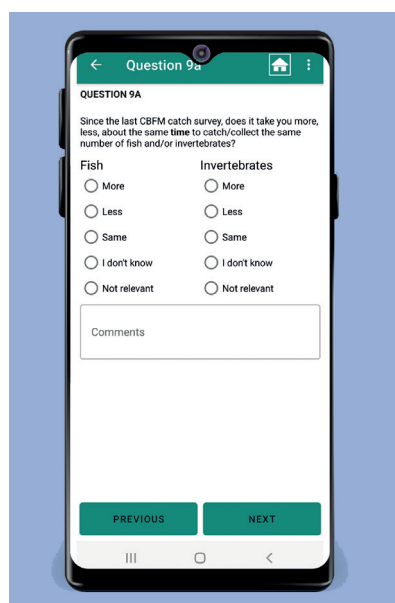
Question 11:

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.

Select 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, type this in the comments.

Question 12: Tick/shade yes or no. If yes, clearly type what the concerns are in the comments. 'Fisheries resources' and 'concerns' are purposefully vague words to try and capture a potentially wide range of issues.



Context, question 9.

Data collector field notes

As a data collector recording information about community fisheries, you will have a first-hand view of what is being studied. It is therefore important that you note 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”.

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

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 3

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

There may be multiple data collectors 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 surveys that you were responsible for to check that there are no mistakes or blank responses. 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 the spelling of fishers' names, and ensure one single consistent spelling is used per fisher in each community.

Write in your field notes journal - see **Field notes section p.27.**

Organise and safely store data

IT IS VERY IMPORTANT that the tablets you are responsible for remain safe and functional, and that the surveys saved on each of those tablets remain there until you return the tablet to your data coordinator. You do not want to lose data after all that hard work!

Also, check that one of the three scenarios is true for each of the fishers you have surveyed:

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** surveys) 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** surveys 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.

Daily debrief among collection team

Debrief with fellow data collectors 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 data collector
- Activities or events of note that may affect data collection

With your fellow data collectors, 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.

If your data coordinator is with you, this might also be a good time for the data coordinator to back the data up from each tablet.

AFTER DATA COLLECTION IN COMMUNITIES

After

Transfer data
Debrief with CBFM team

Once data collectors 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 data collectors 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:

- Tablet issued to you
- Any data backups
- 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 data coordinator and your fellow data collectors 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.

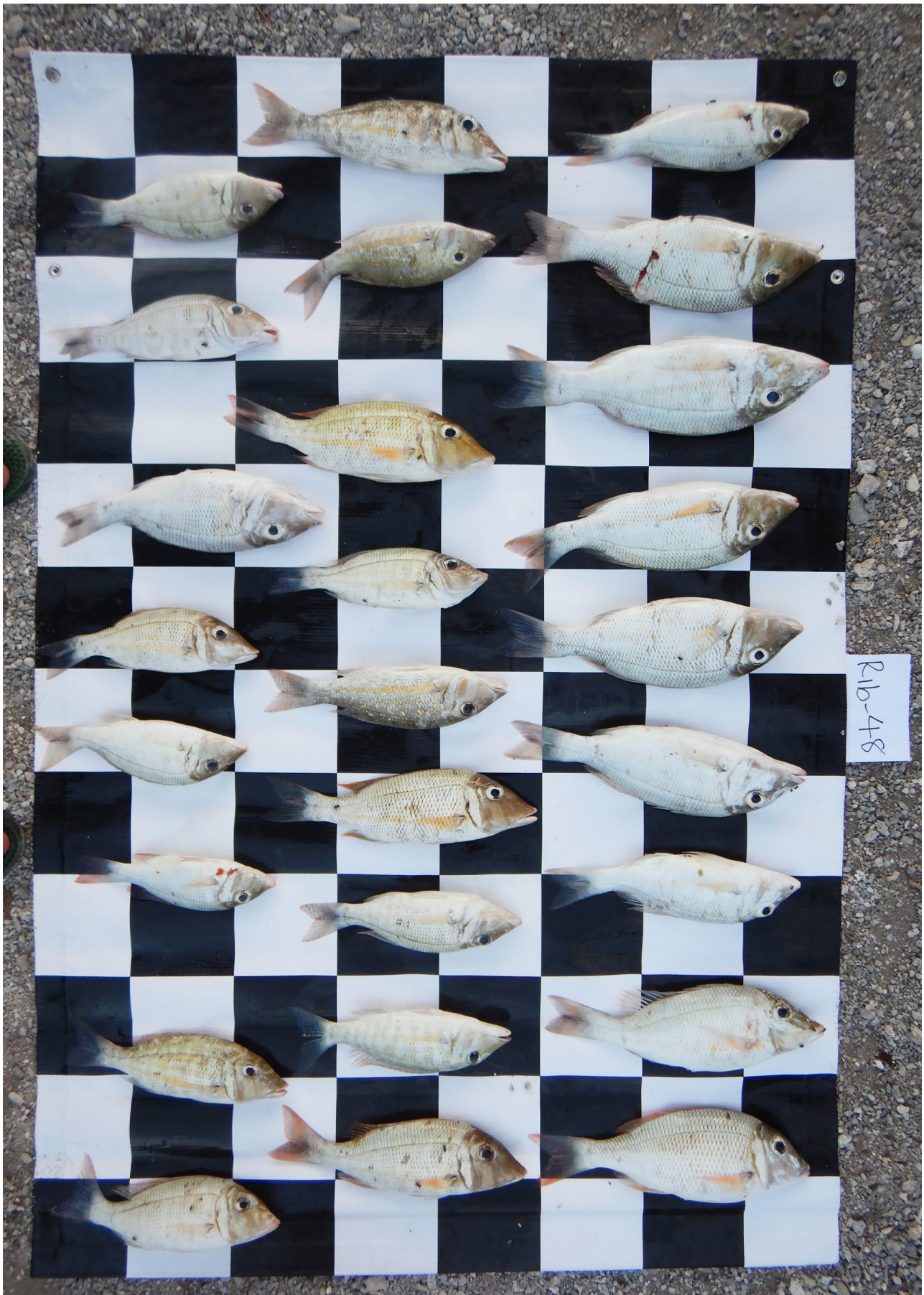
Next steps

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 data collector is complete (for now), but you may be called upon to clarify data entered into surveys.

Emergency resources

In case electronic equipment fails in the field, we have provided some resources that will still allow you to gather data during your trip.

In [Appendices B, C and E](#) you will find paper survey forms containing the questions from the 2023 version of the Ikasavea surveys and paper photo labels used to make sure we can keep track of the specific photos taken for each survey.



APPENDICES: DATA COLLECTION INSTRUMENTS

A: Checklist of materials to bring on data collection trips

- Dedicated bag or backpack for carrying supplies
- Synchronised tablet with chargers and battery backup - *for taking photos and conducting surveys*
- Something to store tablets in so they stay dry
- Catch mat with 10cm² grid
- Plastic tarpaulin(s)
- Pens and/or pencil with eraser and sharpener or spare lead
- Paper survey forms (just in case) - *~100 copies per form for each community (assuming no printer in communities)*
- Field notes form or notebook
- Clipboard
- Credit for phone/internet to stay in contact with CBFM team in the office
- Flashlight/torch and spare batteries
- Small umbrella and/or raincoat (optional)
- Catch photo label for Catch mat (just in case)

B: Catch Survey

CATCH SURVEY DETAILS			
Data collector name:	<input type="text"/>	Survey code:	<input type="text"/>
Survey date (DDMMYY):	<input type="text" value="/ /"/>	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 year of birth:	<input type="text"/>	Consent Obtained (circle)?	<input type="text" value="YES"/>

FISHING TRIP DETAILS			
Departure date:	<input type="text" value="/ /"/>	Return date:	<input type="text" value="/ /"/>
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="More difficult"/>	<input type="text" value="About the same"/>	<input type="text" value="Easy"/>
Please note any special events:	<input type="text"/>		

FISHING EVENT DETAILS			
Fishing event #:	<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"/>
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:"/>	
Was there catch from this method (circle)?	<input type="text" value="Yes"/>	<input type="text" value="No"/>	Approx weight (kg): <input type="text"/>
Main use of this catch?:	<input type="text" value="Sale"/>	<input type="text" value="Home consumption"/>	<input type="text" value="Gifting"/>
	<input type="text" value="Bait"/>	<input type="text" value="Customary/Church event"/>	
	<input type="text" value="Other:"/>		
Photo number(s):	<input type="text"/>		
General comments:	<input type="text"/>		

C: Fishing Context Survey

FISHING CONTEXT SURVEY			
Data collector name:	<input style="width: 95%;" type="text"/>	Survey number:	<input style="width: 95%;" type="text"/>
Survey date (DDMMYY):	<input style="width: 25%;" type="text"/> / <input style="width: 25%;" type="text"/> / <input style="width: 25%;" type="text"/>	Linking catch survey number:	<input style="width: 95%;" type="text"/>
Island:	<input style="width: 95%;" type="text"/>	Community/village:	<input style="width: 95%;" type="text"/>
Fisher/Collector name:	<input style="width: 95%;" type="text"/>	Fisher/Collector gender:	<input style="width: 95%;" type="text"/>
Fisher/Collector year of birth:	<input style="width: 95%;" type="text"/>	Fisher/Collector contact details:	<input style="width: 95%;" 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

Are you a: Invertebrate fisher Finfish fisher

QUESTIONS - ASK EVERY TIME	RESPONSE		
<p>1a <i>In the last 7 days, did you go fishing, collecting, both, did not go?</i></p>	<p><input type="checkbox"/> Fishing <input type="checkbox"/> Collecting <input type="checkbox"/> Fishing AND Collecting <input type="checkbox"/> Did not Fish or Collect</p>		
<p>1b <i>In the last 7 days, how many times did you go per activity listed (#)?</i></p>	<p>Times per activity(#): <input style="width: 40px;" type="text"/> Fishing <input style="width: 40px;" type="text"/> Collecting</p>		
<p>2 Please identify all days fished/collected in the last 7 days:</p>	<p><input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday <input type="checkbox"/> Thursday <input type="checkbox"/> Friday <input type="checkbox"/> Saturday <input type="checkbox"/> Sunday</p>		
<p>3 <i>In the last 7 days, what were the 4 main fish/ invertebrate types you caught?</i></p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Fish:</p> <p><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 style="width: 100%;" type="text"/> <input type="checkbox"/> Other seafood (specify)</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Invertebrates:</p> <p><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</p> </td> </tr> </table>	<p>Fish:</p> <p><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 style="width: 100%;" type="text"/> <input type="checkbox"/> Other seafood (specify)</p>	<p>Invertebrates:</p> <p><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</p>
<p>Fish:</p> <p><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 style="width: 100%;" type="text"/> <input type="checkbox"/> Other seafood (specify)</p>	<p>Invertebrates:</p> <p><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</p>		

QUESTIONS - ASK EVERY TIME cont.

RESPONSE

4 *In the last 7 days, what were the 3 main fishing methods (can be less than 3) you used for fishing?*

- Toumaa
- Net
- Handline
- Drop stone
- Trolling

- Spearfish (night)
- Spearfish (day)
- Gleaning/ collecting
- Other (specify)

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

 kg

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

- Yes
- No

- I don't know
- There are no local areas closed to fishing

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

Hours

Minutes

Comments

QUESTIONS - ASK EVERY TIME cont.

RESPONSE

For questions 8-11 answer if *since the last CBFM survey (in the last 12 months if first village survey)*

8 Have you changed your *main* fishing/collecting location? (If yes, see 8b and 8c)

If yes, is the new location closer, farther, about the same distance from your village than your previous location(s)?

- Yes
- No
- Closer
- Further
- Same

If yes, explain why you have changed locations:

9a Does it take you more, less, about the same time to catch/collect the same number of fish and/or invertebrates?

Comments

- | Fish | Invertebrates |
|---------------------------------------|---------------------------------------|
| <input type="checkbox"/> More | <input type="checkbox"/> More |
| <input type="checkbox"/> Less | <input type="checkbox"/> Less |
| <input type="checkbox"/> Same | <input type="checkbox"/> Same |
| <input type="checkbox"/> I don't know | <input type="checkbox"/> I don't know |
| <input type="checkbox"/> Not relevant | <input type="checkbox"/> Not relevant |

9b Are you catching/collecting more, less, about the same *total* number of fish and/or invertebrates?

Comments

- | | |
|---------------------------------------|---------------------------------------|
| <input type="checkbox"/> More | <input type="checkbox"/> More |
| <input type="checkbox"/> Less | <input type="checkbox"/> Less |
| <input type="checkbox"/> Same | <input type="checkbox"/> Same |
| <input type="checkbox"/> I don't know | <input type="checkbox"/> I don't know |
| <input type="checkbox"/> Not relevant | <input type="checkbox"/> Not relevant |

9c Are you catching/collecting larger, smaller, about the same *size* of fish and/or invertebrates?

Comments

- | | |
|---------------------------------------|---------------------------------------|
| <input type="checkbox"/> Larger | <input type="checkbox"/> Larger |
| <input type="checkbox"/> Smaller | <input type="checkbox"/> Smaller |
| <input type="checkbox"/> Same | <input type="checkbox"/> Same |
| <input type="checkbox"/> I don't know | <input type="checkbox"/> I don't know |
| <input type="checkbox"/> Not relevant | <input type="checkbox"/> Not relevant |

10 Since community-based fisheries management was implemented in your village/community, has fishing/collecting improved, gotten worse, about the same?

- | Fish | Invertebrates |
|---------------------------------------|---------------------------------------|
| <input type="checkbox"/> Improved | <input type="checkbox"/> Improved |
| <input type="checkbox"/> Worse | <input type="checkbox"/> Worse |
| <input type="checkbox"/> Same | <input type="checkbox"/> Same |
| <input type="checkbox"/> I don't know | <input type="checkbox"/> I don't know |
| <input type="checkbox"/> Not relevant | <input type="checkbox"/> Not relevant |

11 In your village, are there local restrictions on how to fish? (Species, areas, methods, gear etc.)

- Yes (see next, 'if yes')
- No

If yes, are people following these fishing restrictions? (circle one).



Write any comments.

12 Do you have any concerns about your *local* fisheries resources? Yes (if yes, please comment) No

Do you have any more comments?

D: Data Collector Field Notes Observation Form

As a data collector recording information about community fisheries, you will have a first-hand view of what is being studied. It is therefore important for you to note 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.

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):

E: Catch photo labels

Use these if your camera/tablet is malfunctioning or to keep track of photos taken before catch surveys are done.

COMMUNITY	DD/MM/YY	FISHERS' NAME	PHOTO #

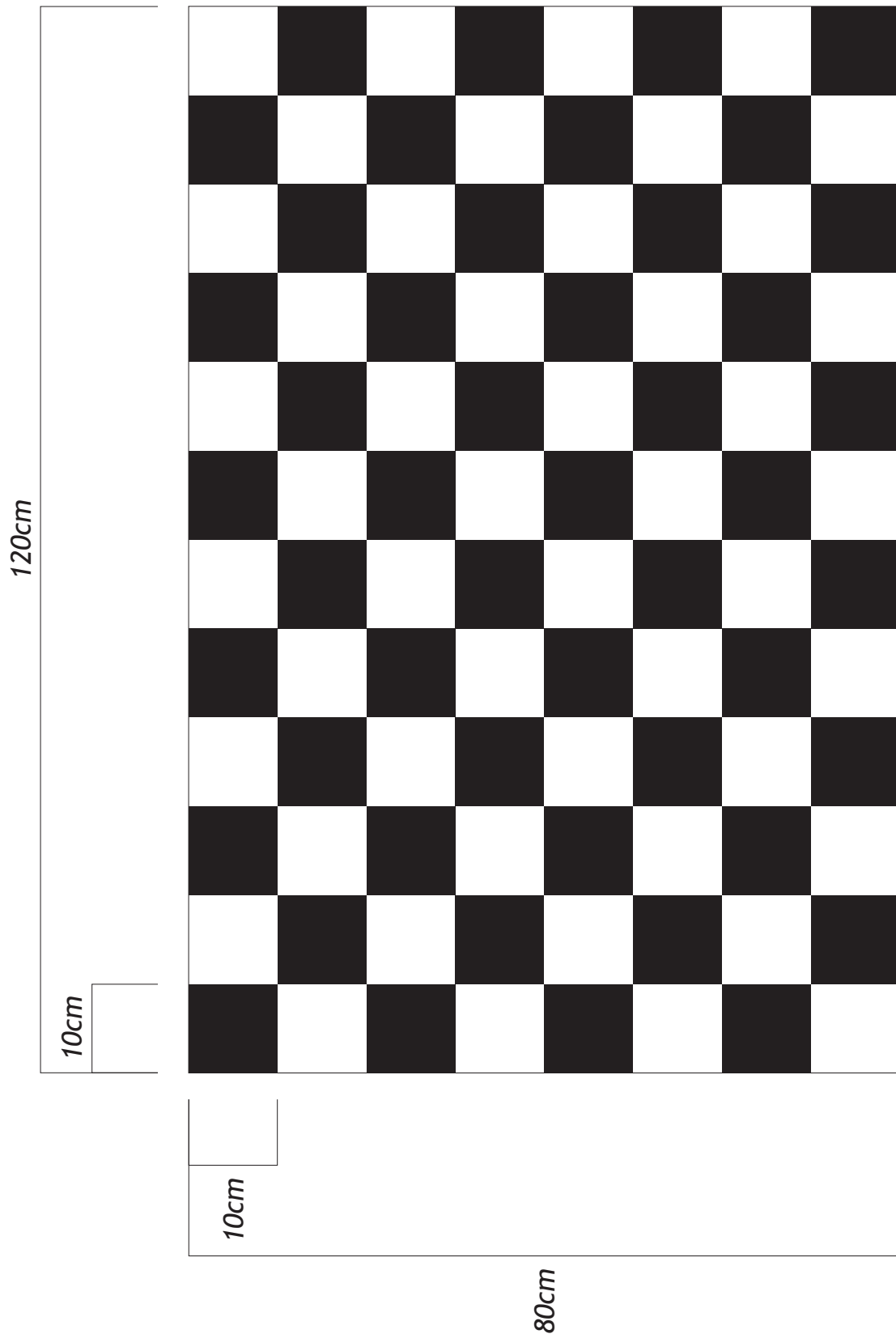
COMMUNITY	DD/MM/YY	FISHERS' NAME	PHOTO #

COMMUNITY	DD/MM/YY	FISHERS' NAME	PHOTO #

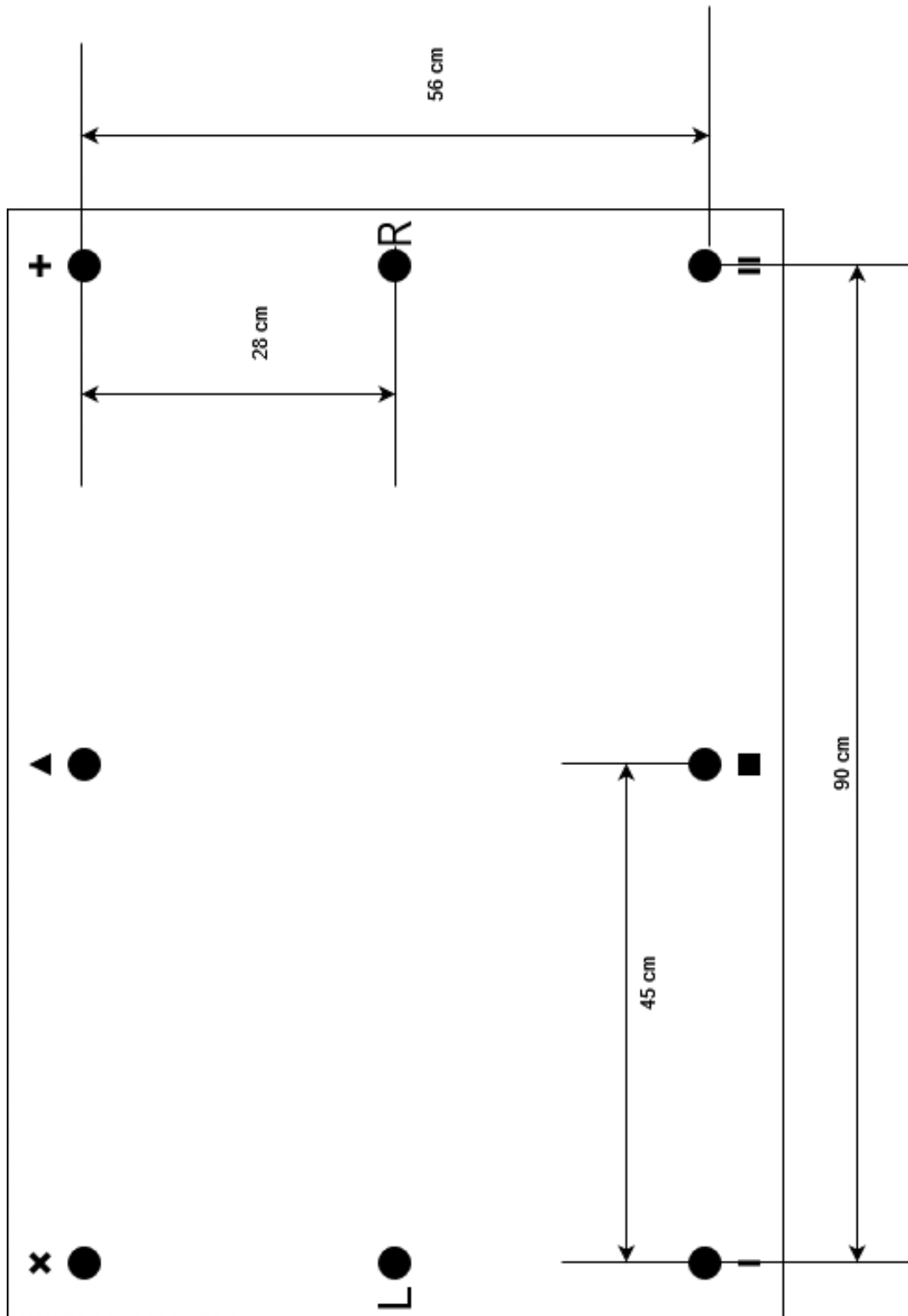
F: Catch mats

There are three types of catch mat, see the following figures i), ii) and iii).

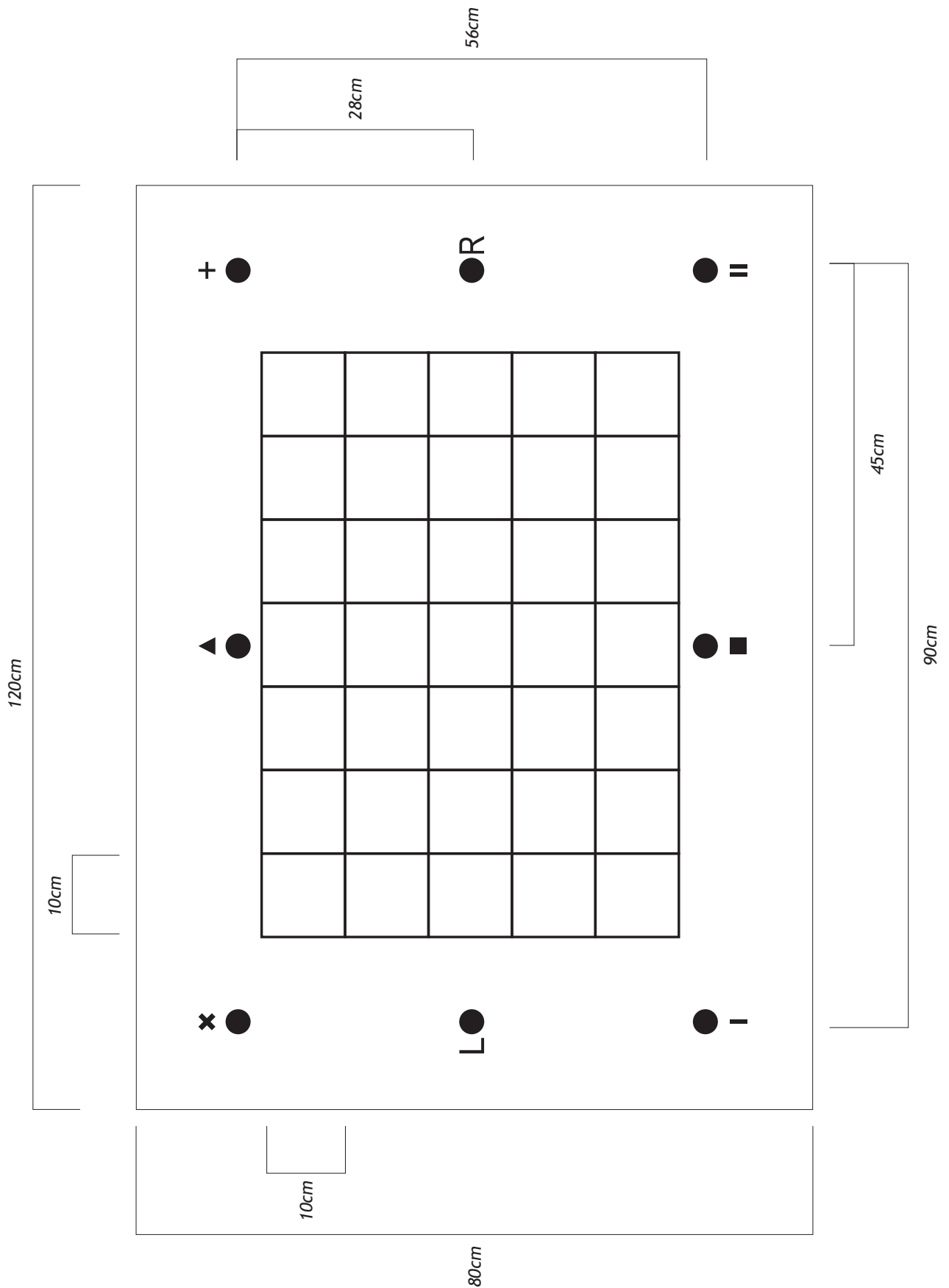
i. Checkerboard mat



ii. SPC catch mat



iii. Hybrid catch mat





Community	MMYY	Catch Survey #	Photo #