

4FJ

FISH SMART

A GUIDE TO
**BIGGER,
BETTER
CATCHES**



This booklet was produced by cChange in collaboration with the Fiji Locally-Managed Marine Area Network and partners, including the Fiji Ministry of Fisheries, Wildlife Conservation Society-Fiji, Conservation International, Biospherics, the Locally-Managed Marine Area Network and the Pacific Community (SPC).

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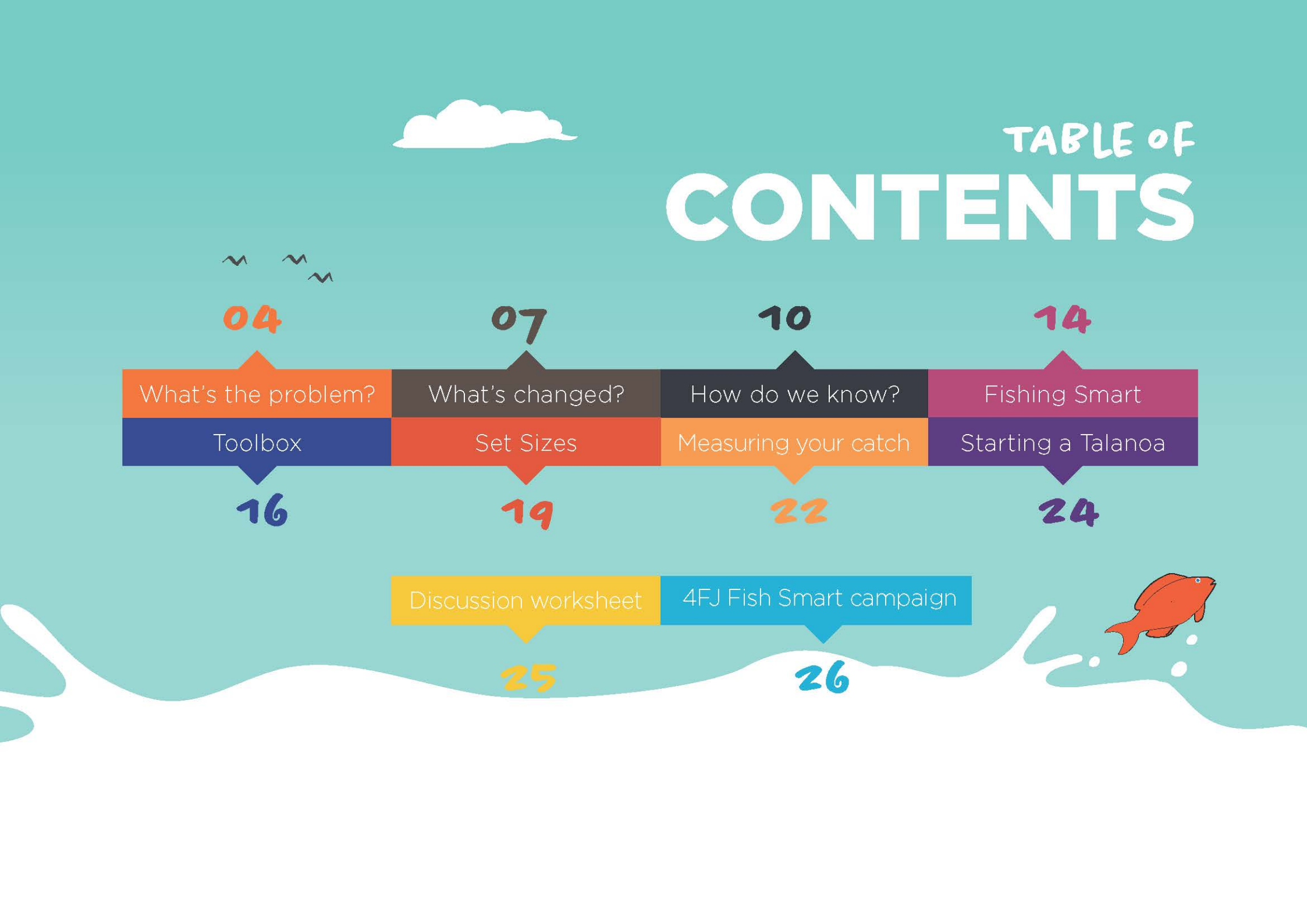
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When we start talking about fisheries management in Fiji, here are the kinds of responses we hear most often.

What's the problem?

WE CAN NEVER RUN OUT OF FISH, THE OCEAN IS BIG.

HOW DO YOU EXPECT US TO FEED OUR FAMILY?

HOW DO YOU KNOW THEY ARE LESS? DO YOU GO UNDERNEATH THE WATER & COUNT THE FISH?

GOD GAVE US THESE FISH, WE SHOULD EAT THEM.



But if you ask people how their catches have changed over the years, here is what you find.

1980

THESE
FISH CAN
FEED
MY KORO.



2000

THESE
FISH CAN
FEED
MY FAMILY.



2020

ISA...



What's the problem?

It's also taking us more time and costing us more money to catch fish and other marine species than it did in the past.

What's the problem?

I'M GOING TO
TELL MY KIDS
TO STICK TO
GARDENING.



1980



2000

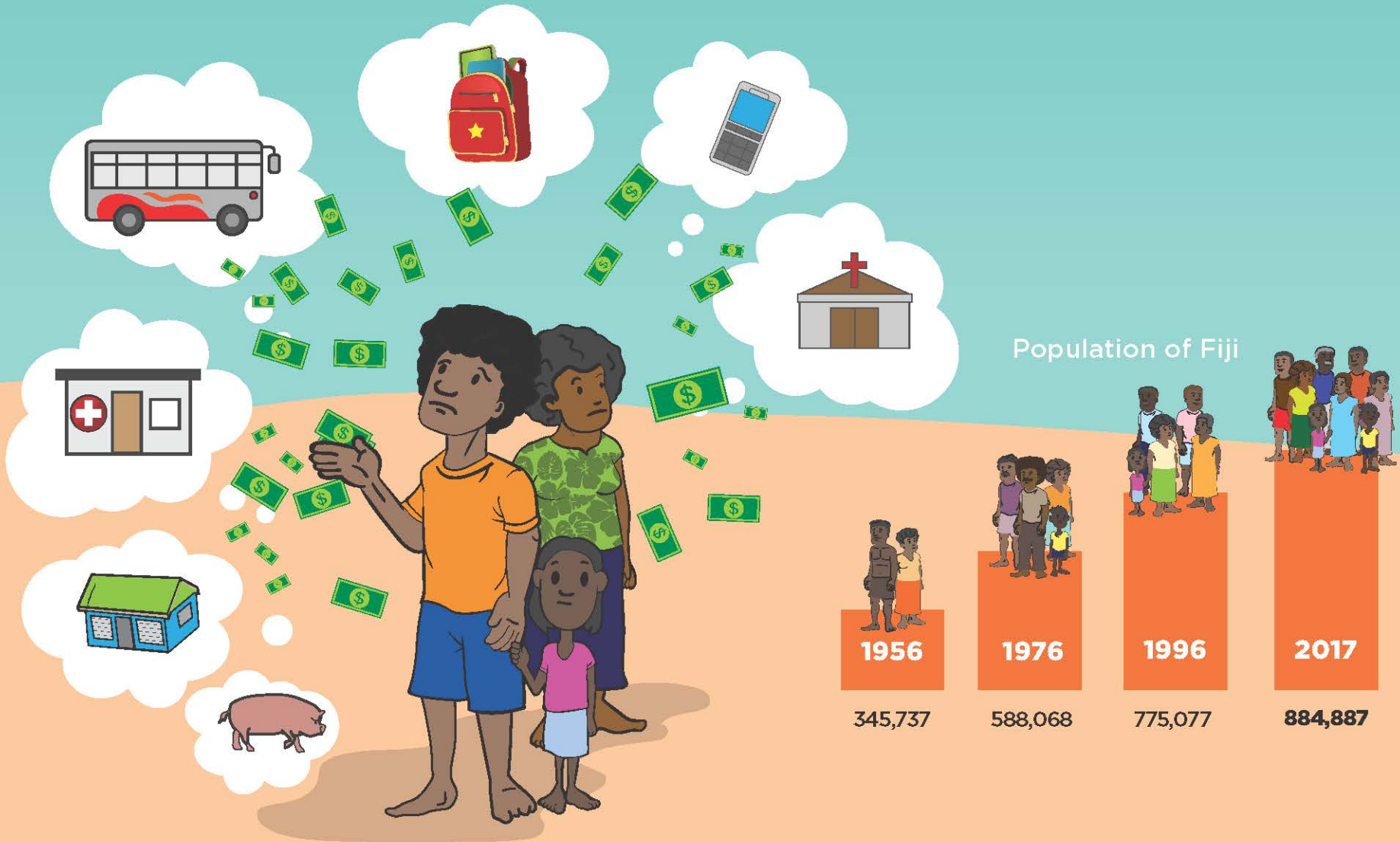


2020



So why has fishing changed so much?

We are fishing more than ever, because we have more mouths to feed and we have more needs today than ever before.



What's changed?

AS OUR NEEDS HAVE INCREASED, THE GOOD NEWS IS WE HAVE MORE OPPORTUNITIES TO SELL OUR CATCHES AND EARN MONEY.

AUSTRALIA
NEW ZEALAND
EUROPE
ASIA

LABASA

USA

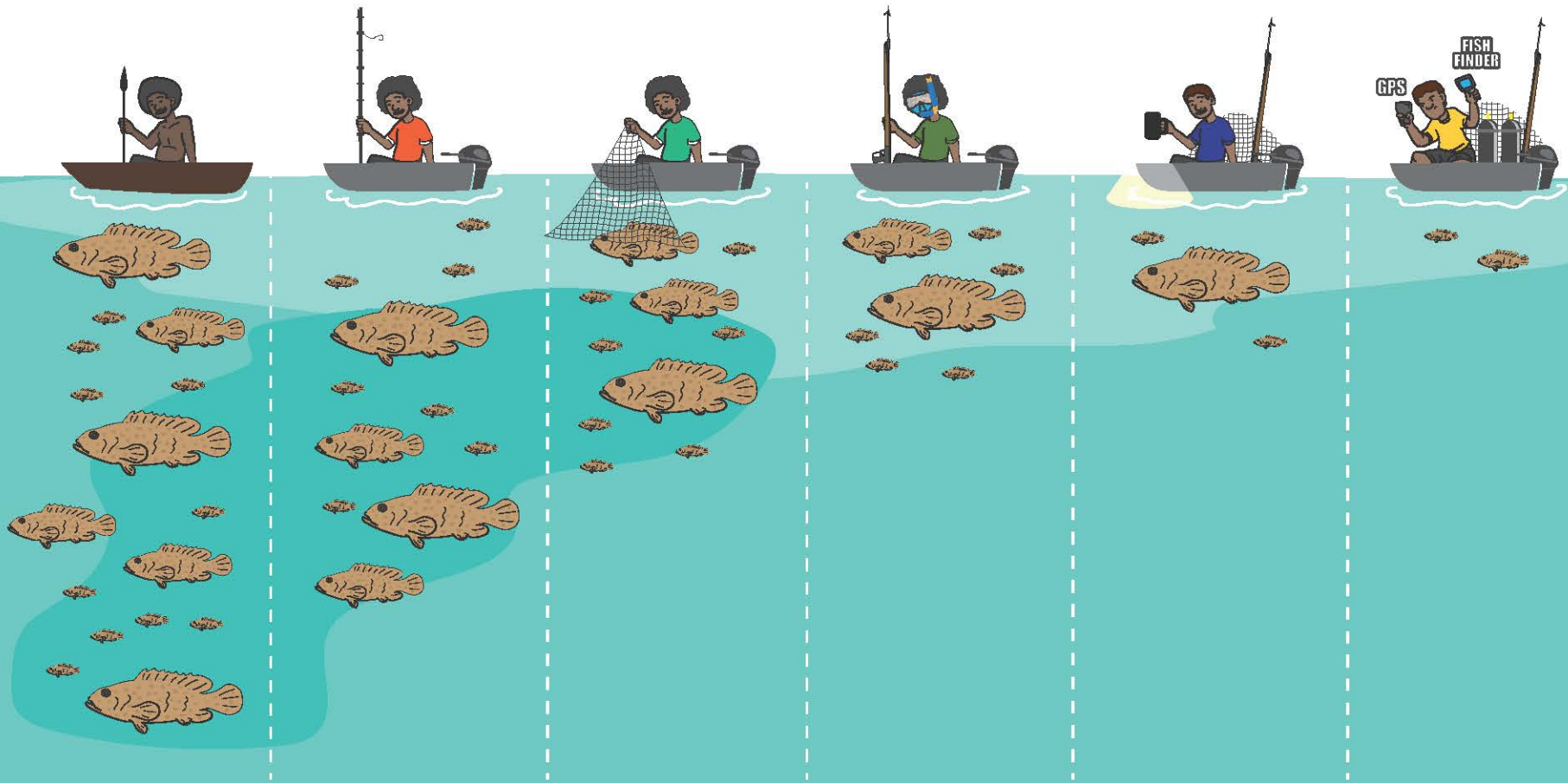
NADI

SUVA

What's changed?



BUT AS OUR ABILITY TO SELL OUR CATCHES HAS IMPROVED, SO HAS OUR FISHING GEAR, ALLOWING US TO CATCH MORE FISH THAN EVER BEFORE, LEAVING VERY FEW BEHIND.



What's changed?

SO HOW DO WE KNOW?

One way is to talk to fishers.

BEFORE IT USED TO TAKE A SHORT WHILE TO FISH AND WE'D GET BIG FISH EASILY. NOW WE HAVE TO GO FAR AND THE FISH ARE SMALLER.

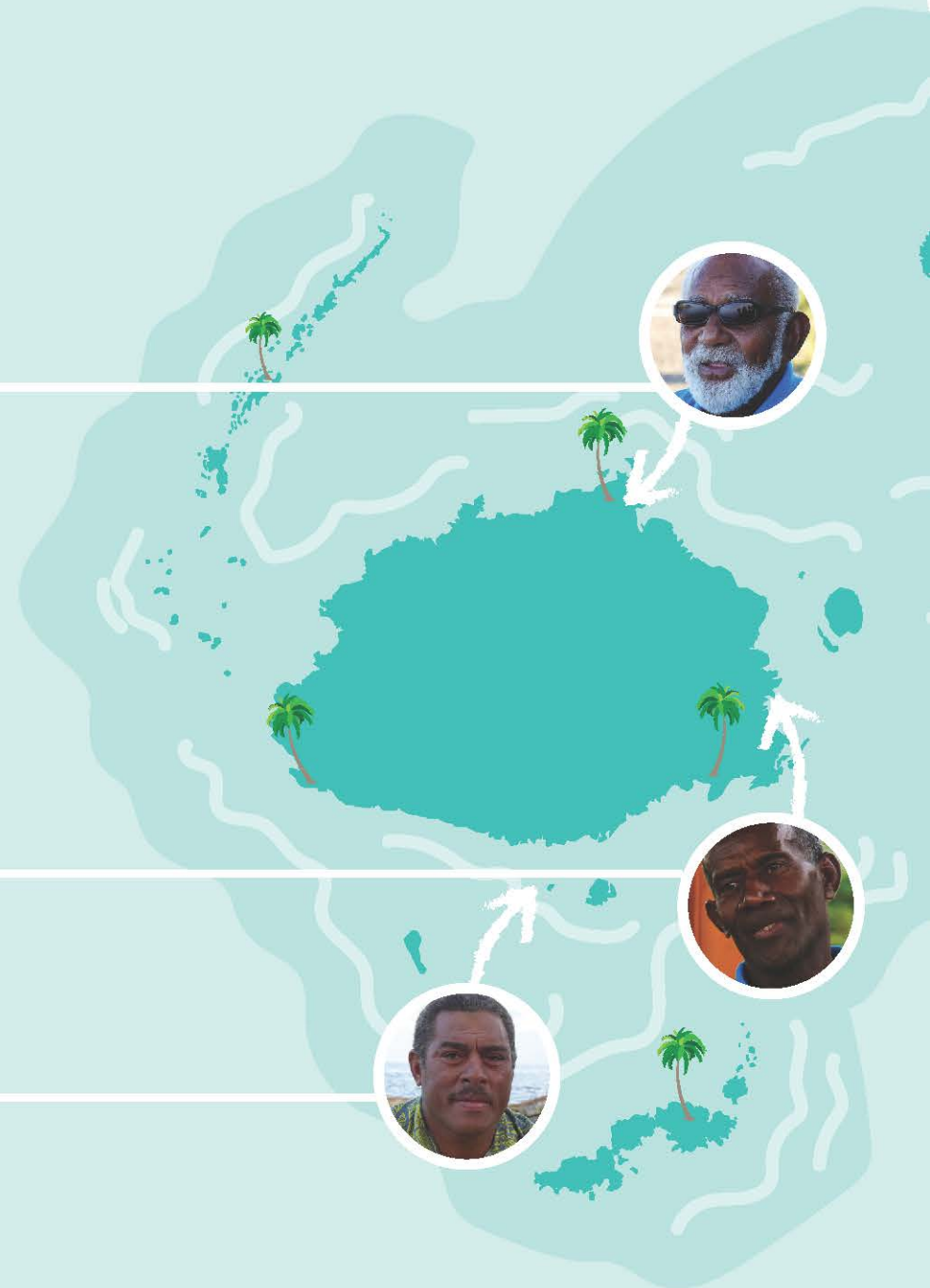
Sikeli Naitura, Ra

THE NUMBER OF LARGE FISHES THAT WE USED TO CATCH HAS REALLY DECREASED. JUST SMALL FISH NOW.

Jona Ravasakula, Tailevu

WE ARE NOW CATCHING LESS BIGGER FISH AND MORE SMALLER ONES COMPARED TO WHEN I WAS YOUNGER FISHING WITH MY FATHER. WE WOULD OPEN OUR NETS AGAIN TO LET GO OF SOME FISH BECAUSE IT WAS TOO MUCH.

Anaiasa Tavaga, Serua Island





OUR YEARLY FISHING TRADITION IN THE RIVER HAS STOPPED BECAUSE THOSE SPECIAL FISH HAVE GONE.

Akanisa Lewasaro Loaloo, Bua



I HAVE SEEN THE SIZES OF THE FISH GETTING SMALLER NOW. THE BIG ONES ARE NOW HARD TO FIND. MAYBE WE ARE JUST CATCHING ALL THE MOTHERS EVERY YEAR.

Melaia Feccia, Savusavu, Cakaudrove



WHEN I WAS IN PRIMARY SCHOOL WE WOULD EAT FISH DAILY BUT NOW AS A GRANDFATHER WE CAN HAVE IT ONLY ON SUNDAYS. FISH HAVE BECOME SCARCE NOWADAYS.

Ratu Saki Kaunisela, Koro, Lomaiviti

How do we know?

WHAT'S THE STORY IN YOUR COMMUNITY?

It's important for communities to talk about the changes and challenges they are facing. Can you sit together in small groups and talk about what kind of changes have you seen?

ARE YOUR CATCHES DECLINING?

ARE YOU GOING FURTHER AND TAKING LONGER TO CATCH FISH?

WHY HAS FISHING CHANGED?

How do we know?

But if you ask people how their catches have changed over the years, here is what you find.

1980 2000 2020

THESE FISH CAN FEED MY KORO.

THESE FISH CAN FEED MY FAMILY.

ISA...

What's the problem?

It's also taking us more time and costing us more to money to catch fish and other marine species than it did in the past.

What's the problem?

I'M GOING TO TELL MY KIDS TO STOP TO GARDENING.

1950 2000 2020

So why has fishing changed so much?
We are fishing more than ever, because we have more mouths to feed and we have more needs today than ever before.

Population of Fiji

What's changed?

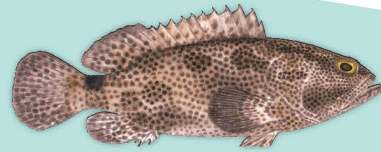
BUT AS OUR ABILITY TO SELL OUR CATCHES HAS IMPROVED, SO HAS OUR FISHING GEAR, ALLOWING US TO CATCH MORE FISH THAN EVER BEFORE, LEAVING VERY FEW BEHIND.

What's changed?

PHASES OF OVERFISHING

Overfishing typically happens in the same way everywhere.

First, the biggest, most valuable fish, disappear. Then it goes right down the food chain.



PHASE 1

Big is best, and first to go



PHASE 2

High value, for market and culture, go next



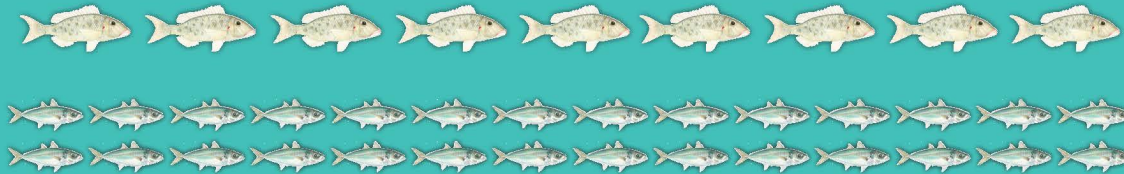
PHASE 3

Easy to catch are next group to go



PHASE 4

Eventually only fish no-one wants are left



How do we know?

Fish illustrations reproduced with permission of the Pacific Community (SPC) and cChange.

SO ARE YOU STILL CATCHING THE BIG FISH THAT EVERYONE LOVES, OR ARE YOU CATCHING FISH FURTHER DOWN THE FOOD CHAIN?

What's on your plate can tell you a lot about the health of your fishing grounds.

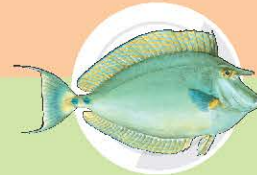
SO, WHAT'S
FOR
DINNER?



THESE?

SEASONAL BAN
1st June - 30th Sept
LEGALLY PROTECTED

Kawakawa and donu are already at risk and fishing and sale are banned for four months each year to protect their peak breeding months.



Varivoce and kalia are already so at risk and fishing and sale of these fish is legally banned (varivoce) or restricted (kalia) year-round.

ARE YOU STILL CATCHING THE BIG FISH?

Or are you further down the food chain?



Fishing Smart

FISHERIES MANAGEMENT TOOLBOX

So what should you do if you do find your catches declining, or you are worried about losing a certain species?

To help reverse declines in catches, the 4FJ Fish Smart campaign is promoting the best practices, what we call Fish Smart practices, to help ensure our fishing grounds remain productive.

1

Establish tabu areas to help create space for fish to grow and breed each year. The fish in tabu areas help restock all the fishing grounds. Tabu areas can also be placed on important habitat that fish need. Please note small tabu areas will not fully protect fish that swim over large areas.



2

Establish size limits to ensure fish reach Set Sizes and restock your fishing grounds.

You can also use bigger hooks and bigger mesh size in nets, to ensure the little ones get a chance to grow before you catch them.



What about land-use? The 4FJ tools focus on rules for Fishing Smart. Sometimes, communities will also need to look at how they use the land, as things like excessive runoff that smothers coral or mangrove clearing, which are both critical fish habitat, can reduce fish numbers, too.

3

Ban harmful gear that leaves too few fish behind.

Poison root fishing, night diving & scuba spearfishing are examples of practices communities have banned. Small net sizes too, particularly in fish nursery grounds.



6

Fish Aggregation Devices

are used to attract deep water fish to one location, to make it easier to catch them. FADs are used to reduce fishing pressure on more overfished inshore areas.

Toolbox

4

Limit fishing permits/licences to reduce the total fish caught each year.

Give priority to fishers from the village, if stocks are declining.



5

Create bans to protect key breeding sites or breeding seasons, like kawakawa and donu.



SO WHAT'S THE RIGHT FISH SMART SOLUTIONS FOR YOU AND YOUR COMMUNITY? THE ANSWER CAN DEPEND ON THE HEALTH OF YOUR FISHING GROUNDS AND WHAT YOUR GOALS ARE.

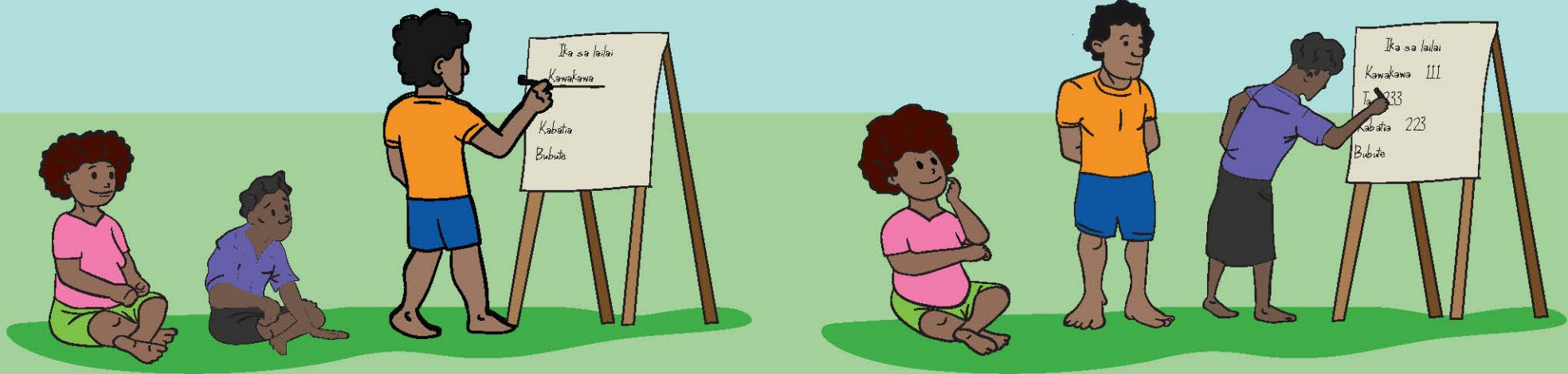
A good first step is to sit down with your family, fellow fishers and your community and talk about the fish and marine species you are most concerned about losing. Here are two exercises to complete:

1

What fish have you seen change the most, for example, the sizes decreasing, it's becoming harder to catch them and you are traveling farther to catch them? List all the fish that are declining.

2

Using the same list, ask yourself, if your community was to have a type of fish taken away, which would be the worst to lose? Have each person rank the top 3 fish they are worried about losing, by writing 1, 2 and 3, next to those fish, in order of importance to you. The top fish are the ones you will likely measure.



It's ok to keep this discussion going beyond your first meeting. You want to get agreement on the ones you are most concerned about so everyone helps measure them.

Once you have your fish list, you can take a look at the sizes of your catch, to get an idea of what action is needed. For that, we have some good news.

Over the past four years, the Ministry of Fisheries, in partnership with leading experts, and local fishers, have conducted research in Fiji to determine the sizes our fish should be to ensure they are producing enough new fish year after year to sustain good catches.

THAT'S WHAT WE CALL SET SIZE.



IF YOUR FISH ARE
SET SIZE OR BIGGER,
THEN TODAY &
TOMORROW IS SET!

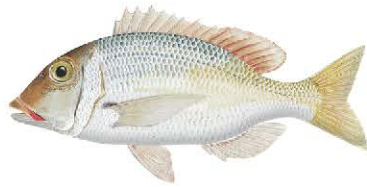
Set Sizes are not legally enforceable. But they are the recommended sizes if we want to keep enjoying these species.

HERE ARE THE SET SIZES OF OUR MOST COMMONLY CAUGHT FISH.

Take a look at the fish you like or are concerned about and measure your catch over time.

IF TOO FEW FISH GET BIG ENOUGH TO BREED AND RESTOCK OUR FISHING GROUNDS, OUR FISH WILL STEADILY DECLINE.

SABUTU

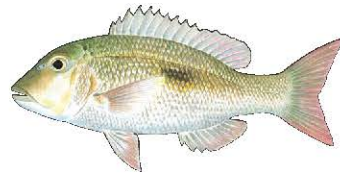


Pacific yellowtail emperor
Lethrinus atkinsoni

Set Size: 25cm+

Age of Maturity: 3 years
Legal Size: 20cm+

KABATIA

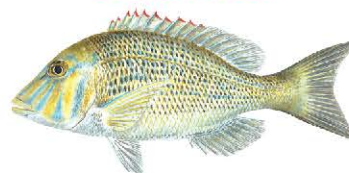


Thumbprint emperor
Lethrinus harak

Set Size: 25cm+

Age of Maturity: 3 years
Legal Size: 15cm+

KAWAGO *DOKONIVUDI



Spangled emperor
Lethrinus nebulosus

Set Size: 55cm+

Age of Maturity: 4 years
Legal Size: 25cm+

SABUTU DAMU, DAMU, TAEA

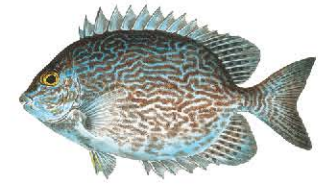


Humpback snapper
Lutjanus gibbus

Set Size: 35cm+

Age of Maturity: 3 years
Legal Size: 30cm+

NUQA, VOLACA



Vermiculated spinefoot
Siganus vermiculatus

Set Size: 25cm+

Age of Maturity: 3 years
Legal Size: 20cm+

RAWARAWA, BUBUTE (SMALL)



Surf parrotfish
Scarus rivulatus

Set Size: 35cm+

Age of Maturity: 3 years
Legal Size: 25cm+

ULAVI



Pacific longnose parrotfish
Hipposcarus longiceps

Set Size: 45cm+

Age of Maturity: 3 years
Legal Size: 25cm+

ULURUA

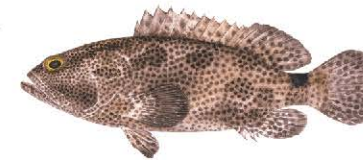


Steephead parrotfish
Chlorurus microrhinos

Set Size: 45cm+

Age of Maturity: 4 years
Legal Size: 25cm+

KAWAKAWA, KASALA



Camouflage grouper
Epinephelus polyphekadion

Set Size: 55cm+

Age of Maturity: 6 years
Legal Size: 25cm+

SEVASEVA



Harlequin sweetlips
Plectorhinchus chaetodonoides

Set Size: 55cm+

Age of Maturity: 4 years
Legal Size: NONE

Also called Many spotted sweetlips

DELABULEWA
*SOISOI



Brown marbled grouper
Epinephelus fuscoguttatus

Set Size: 90cm+

Age of Maturity: 6 years
Legal Size: 25cm+

BATISAI
*DONU, DONU DAMU

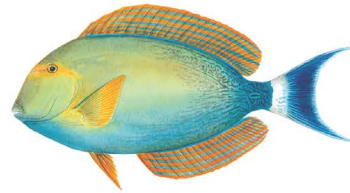


Squaretail coral grouper
Plectropomus areolatus

Set Size: 55cm+

Age of Maturity: 3 years
Legal Size: 25cm+

BALAGI



Yellowfin surgeonfish
Acanthurus xanopterus

Set Size: 35cm+

Age of Maturity: 5 years
Legal Size: 20cm+

TA, LELE, JIVIJIVI

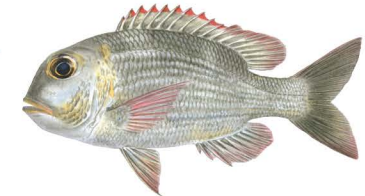


Bluespine unicornfish
Naso unicornis

Set Size: 45cm+

Age of Maturity: 4 years
Legal Size: 30cm+

MAMA, BU



Humpnose bigeye bream
Monotaxis grandoculis

Set Size: 45cm+

Age of Maturity: 4 years
Legal Size: NONE

TEVULU

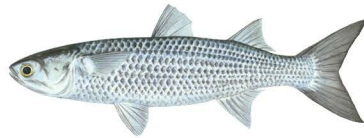


Chinamanfish
Symphorus nematophorus

Set Size: 45cm+

Age of Maturity: 6 years
Legal Size: NONE

KANACE



Fringelip mullet
Mugil crenilabis

Set Size: 35cm+

Age of Maturity: 2 years
Legal Size: 20cm+

OGO

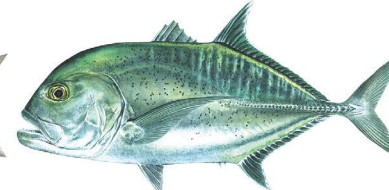


Great barracuda
Sphyræna barracuda

Set Size: 70cm+

Age of Maturity: 2 years
Legal Size: 30cm+

SAQA



Giant trevally
Caranx ignobilis

Set Size: 70cm+

Age of Maturity: 6 years
Legal Size: 30cm+

SAQA BUI DROMO



Brassy trevally
Caranx papuensis

Set Size: 45cm+

Age of Maturity: 3 years
Legal Size: 30cm+

WALU



Narrow-barred Spanish mackerel
Scomberomorus commerson

Set Size: 90cm+

Age of Maturity: 3 years
Legal Size: NONE

Fish that are similar to pictured fish and have same Set Size.

Set Size

The size our fish need to be to ensure we have fish today and tomorrow.

Age of Maturity

The number of years it takes each fish to reach maturity and start breeding.

LOCAL NAME/S
*RED FISH NAME/S

Common name
Species name

Set Size: cm+

Age of Maturity: years

Legal Size: cm+

Legal Size

The current Fiji Minimum Size Limits.

Fiji's current legal minimum sizes for fish were set in 1942 and at the time, there was no research from Fiji. So the sizes were based on fish from other areas. Most of Fiji's current sizes are too small and won't sustain our fisheries.

SO WHAT NOW?

Pick the fish you value the most or are most concerned about losing and measure your next 100 fish caught.

The more you measure, the more accurate your results. It's ok if it's done over a few weeks or a month. If that's too hard, try for 50. Then see where your catch measures up.



SET SIZE FORMULA

To calculate percentage of fish Set Size or bigger, just take the number of fish at or above Set Size and divide that number by the total number of fish measured. Then times the result by 100.

For example, let's say you found 30 fish Set Size or above out of 50 fish measured.

$$1 \quad \frac{30}{50} = 0.6$$

$$2 \quad 0.6 \times 100 = 60\%$$

**Less
than 10%**

Between 10% and 50%

RED

If 10 percent or less of your catch is reaching the Set Size, your fishery is likely about to collapse, as too few, if any, are getting big enough to breed and restock the reef. Urgent action is required.

ORANGE

If between 10% and 50% of your catch is below the Set Size, you don't have enough fish breeding, and your stocks are going to decline year after year. How many under the Set Size will tell you how fast they will disappear. Management actions are advised here.

GOOD THINGS COME TO THOSE WHO WAIT

As fish get closer to mature adults, they grow faster. Like teenagers do. So if you let them grow a little longer, you get more fish in years to come, but also bigger fish, with more meat on them, straightaway.

What about non-fish species? The new research was primarily on fish sizes, but more research is being done on other marine species to provide communities with Set Sizes. For now, you can use the current legal sizes to measure your catches. For mud crab, for example, that's 12.5cm.



More than 50%

GREEN

Ideally, you are seeing 80 to 90 to 100 percent of your catch is Set Size or greater. If so, you can be sure your catch is sustainable. At minimum, more than half of your fish are Set Size or bigger.



Measuring your catch

SO WHAT HAPPENS IF YOU FIND SOME OF YOUR FISH ARE IN TROUBLE?

So that's a lot of information. We suggest rereading this booklet over time so you can really think through all the information. In addition, to reverse the decline of our fishing grounds, everyone needs to be involved.

1

Start talking about the problem

Is it getting harder to fish today? What's changed? Are there specific fish you are worried about most? Can you start measuring them to see how many are Set Size or not?

2

Agree on Rules/Actions

You have a toolbox full of things (see pages 16-18) you can do to revive your fishing grounds. Build consensus around one or a combination of tools.

3

Assess whether your rules are helping

So are fish catches improving? Can you measure the fish again? See if things have got better. If not, consider changing your approach or adding more management rules.

WHICH FISH ARE
WE MOST
WORRIED ABOUT?



COMMUNITY DISCUSSION WORKSHEET

So that's a lot of information. Where to start? We suggest rereading this booklet over time so you can really think through all the information. As you do, have discussions in your community, to get everyone involved. In other words, spend a good deal of time on Step 1. We include Step 2 and Step 3 to show you where you are going. As you get closer to taking action, reach out for more 4FJ tools.

START A TALANOA

Start with small groups then work your way up to village level discussions. Use the booklet to explain the issues, and then ask questions to help people think through changes in your community.

A HOW HAS FISHING CHANGED?

Is our catch the same today? Do we catch the same fish we did before? Same sizes? Does it take longer?

B WHY HAS FISHING CHANGED?

Do we have more mouths to feed? Do we have more income needs now? Has the gear changed? Are there more people fishing today?

C ARE YOU FISHING DOWN THE FOOD CHAIN?

Do you still catch large, fish like kawakawa? Or are you seeing your catch move down to fish that used to be less desirable? Is this a concern?

D CAN YOU MEASURE THE FISH YOU ARE MOST CONCERNED ABOUT?

What fish are we most worried about losing and can we measure 50 to 100 to see whether most of our fish are Set Size or not?

You can review pages 4-15 with your family and friends to help facilitate your discussions

AGREE TO RULES/ACTIONS

Once you decide if there is an overfishing issue you want to address, there is a toolbox of management actions (page 16-18). Whatever you decide you want to do, you need to talk it through with all stakeholders. Here are some questions to ask:

A DISCUSS PAST ACTIONS: Has your community taken any management actions already? What were they and are people happy with the results?

B WHAT OTHER INFORMATION DO YOU NEED TO ACT? What more do you need to know to take the right actions? Are there any partners who can help?

C WHO NEEDS TO BE A PART OF THE DECISION? Who needs to approve the rules? Who needs to be consulted to ensure any new rules are fully supported?

D HOW TO ORGANISE: Do you need to form a committee or assign this task to an existing village committee? Who will monitor compliance with new rules? Who will assess if it's working?

ASSESS: ARE THE RULES HELPING?

Whether it's 12 months from now or more, you need to assess whether the actions you took are helping improve your fish catches. If not, you need to adjust your approach. But be aware some fish will take years to really recover if overfishing is bad.

A ASK YOUR FISHERS: A good way to do that is to talk to your fishers, and ask if their catches are improving. At first, they might see bigger fish, and later they can see more fish as the stocks get enough time to breed and the resulting baby fish get a chance to get big enough for you to catch. Perhaps they are also spending less time catching fish.

B MEASURE YOUR FISH AGAIN: It's a good idea to measure your catch again to see if your numbers have improved. Be sure to share what you find with all stakeholders.

C REPORT BACK: Take what you learn and report back to all your key stakeholders and discuss your next steps.

Change has to start in the community, so don't wait for someone from the outside to start this process. Get started and seek help if you have challenges.

WHERE TO FROM HERE

This booklet is just the start of your journey to revive your fishing grounds! Hopefully it will lead to good discussions and reflections. As you get more organised and get ready to take action, you may need to learn more. We like to say, you need to Get Smart to Fish Smart.

So here's a few things you can do, **to stay connected and get your hands on additional information and tools.**

FOLLOW US ON FACEBOOK!



facebook.com/4fjmovement

Where we share stories, videos, podcasts and new tools.

TUNE INTO FBC RADIO FIJI ONE 'QOLI VAKAMATAU SHOW'

Listen to fishers and experts discuss challenges and share practical, local solutions.

DOWNLOAD THE 4FJ FISH SMART APP

Have easy access to Fiji's national fishing regulations.

Download via Google Play or the Apple Store.

CALL, TEXT, REACH OUT ON MESSENGER



@ 4FJ MOVEMENT



761 5679
9767 156

CONTACT THE MINISTRY OF FISHERIES!

Get access to more information on how to revive your fishing grounds!

CENTRAL DIVISION: 3476587 / 9908101
EASTERN DIVISION: 3361122 / 9966752
NORTHERN DIVISION: 8811234 / 9966770
WESTERN DIVISION: 6665899 / 9906539



A CAMPAIGN FOR BIGGER, BETTER CATCHES

The 4FJ Fish Smart campaign was launched by the Ministry of Fisheries, is coordinated by cChange and funded by Pacific-European Union Marine Partnership (PEUMP) programme with guidance from the Pacific Community and the Locally-Managed Marine Area Network International, and also funded through the Bloomberg Philanthropies Vibrant Oceans Initiative.

Key local partners for implementation include the Wildlife Conservation Society, the Fiji Locally Managed Marine Area Network and Conservation International.



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Sweden
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Partnership for the Pacific Region

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