

THE LOCAL GUIDE TO
BIGGER,
BETTER
CATCHES



This booklet was informed by local partners in New Ireland: Ailan Awareness, Lolieng Sustainable Program, West Coast Development Foundation and Wildlife Conservation Society.

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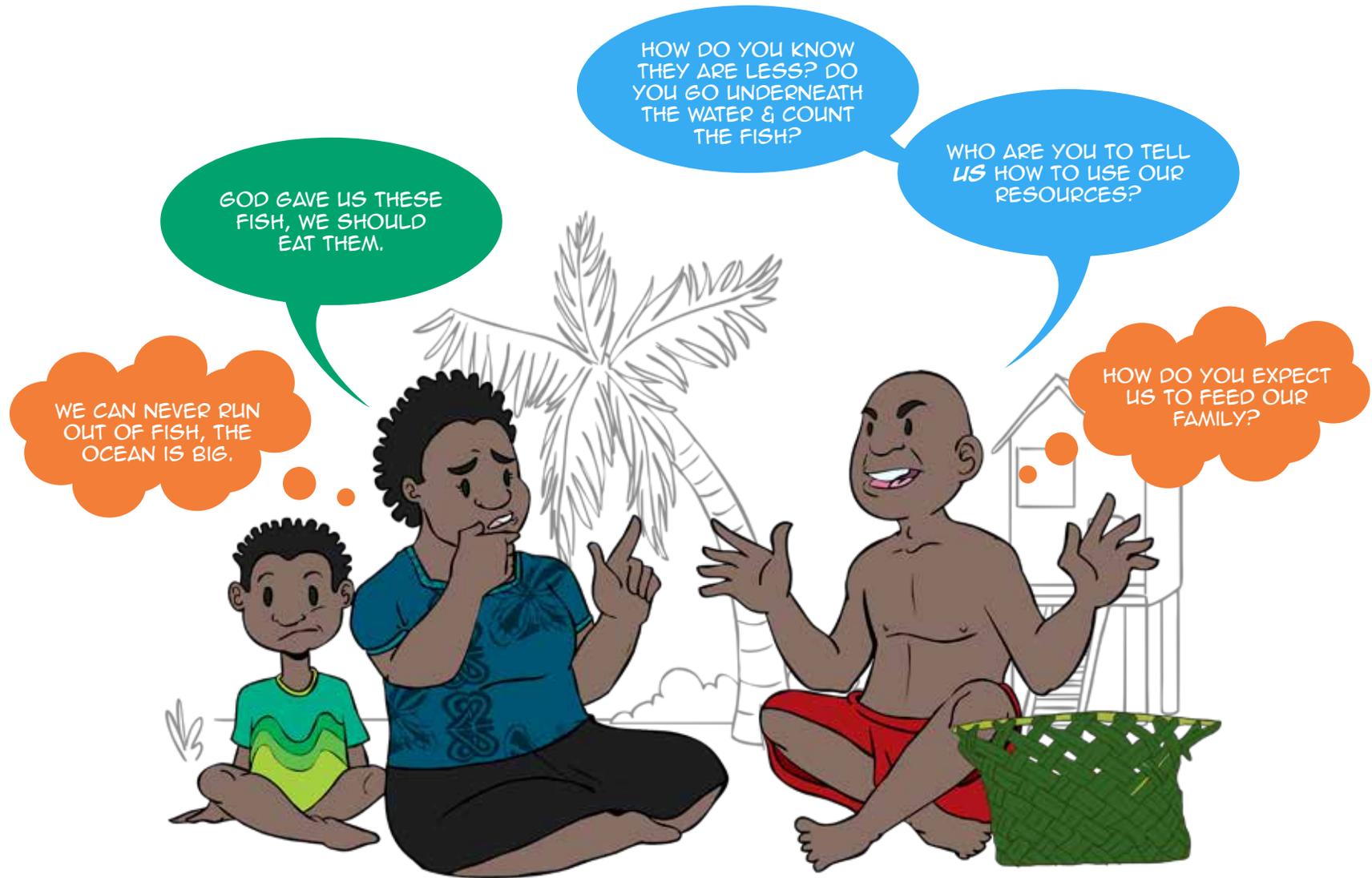
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PART 1

What's the Problem?



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



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

1980

WE HAVE PLENTY
OF FISH.



2000

WE HAVE
ENOUGH...

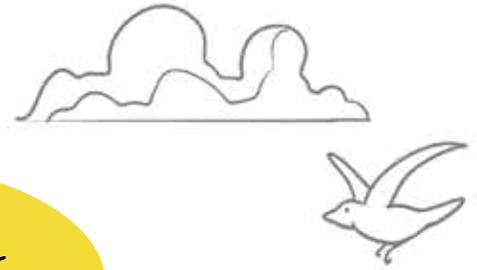


2020

NOW IT IS HARDER



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



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



1980



2000

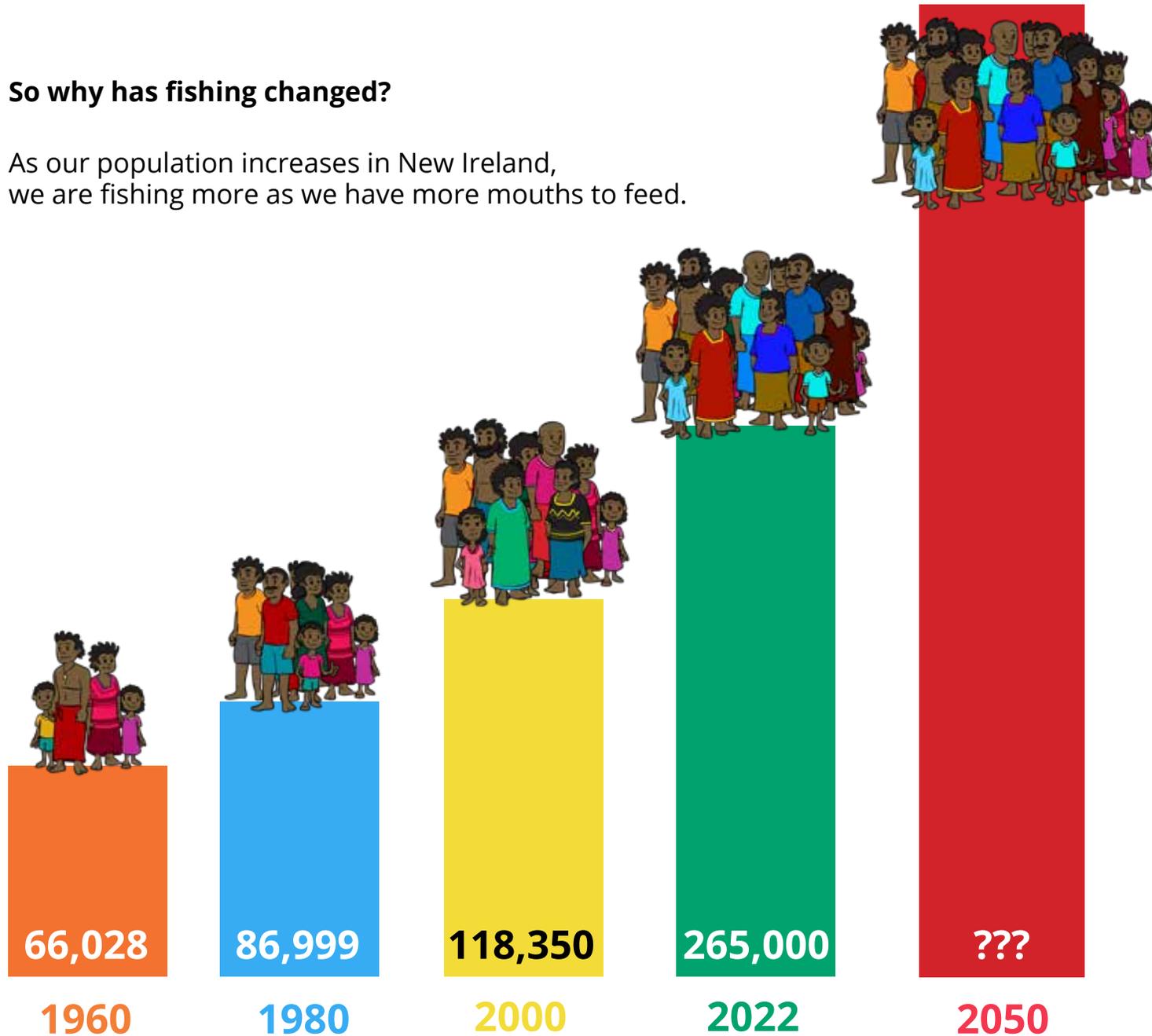


2020



So why has fishing changed?

As our population increases in New Ireland, we are fishing more as we have more mouths to feed.



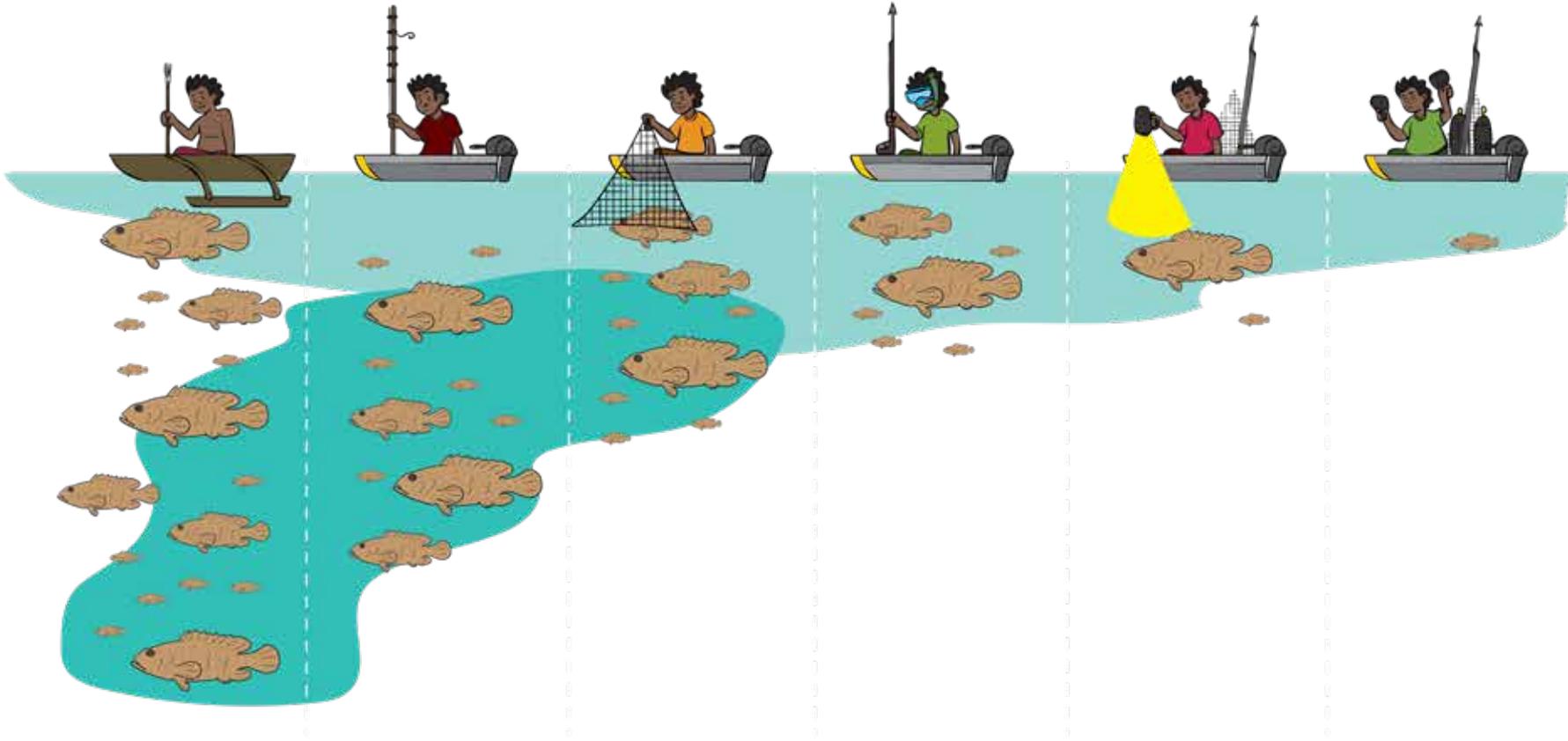
New Ireland Province population (source: PNG Census, 2011 and New Ireland Provincial Government)

As lifestyles have changed and with cost of things increasing, we are also fishing more for kina to pay for needs.



Fishing gear has also improved over the years, making it easier to catch more and more fish. Now too few fish are left behind to breed and restock our fishing grounds.

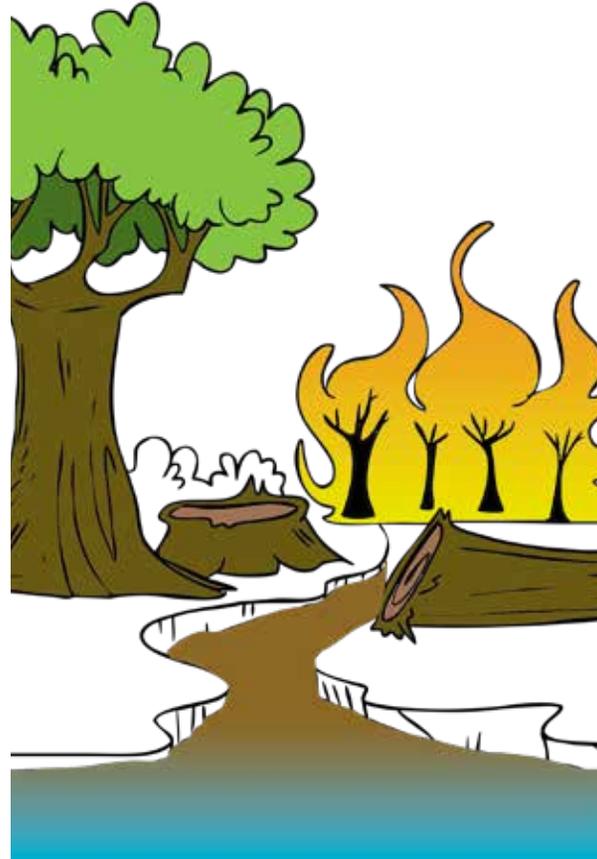
This is not good if we want good catches for food and some to sell, year after year.



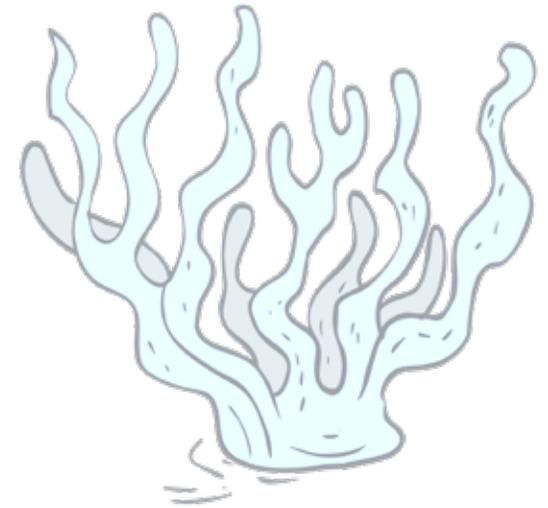
There are also threats to the places fish and other marine species need to thrive – their habitats.



Threats include clearing mangroves for firewood and building materials. Mangroves are critical habitat, particularly for young fish.

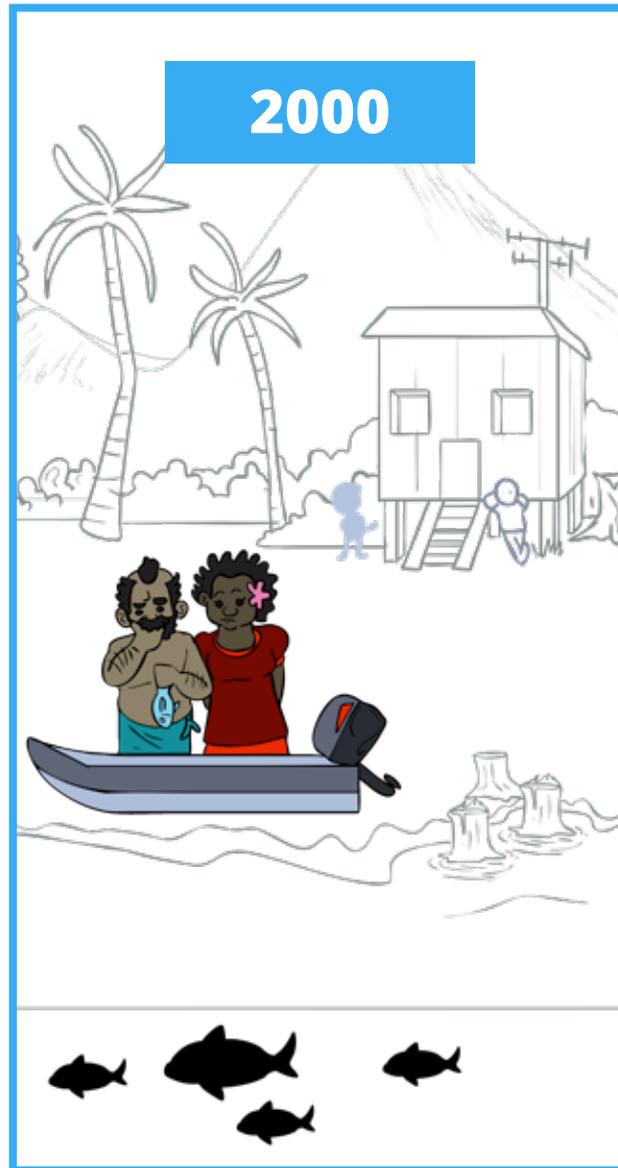


Clearing and burning forests, and intensive use of chemicals on land can cause runoffs and pollution that can harm critical habitats.



Warming seas and polluted water can kill coral. You can tell when they turn bleach white.

And the truth is, as our lives have changed, some of our traditions are being lost. This sometimes creates a free for all in the sea, where we take everything we can, instead of only what we need. This leads to overfishing too.



YUMI MAS TOKTOK

It's important for communities to talk about the changes they experience and the challenges they are facing.

Can you sit together in small groups and talk about the kind of changes you have seen?

ARE YOUR
CATCHES
DECLINING?

ARE YOU GOING
FURTHER AND
TAKING LONGER TO
CATCH FISH?

WHAT *OTHER*
CHANGES HAVE
YOU SEEN?

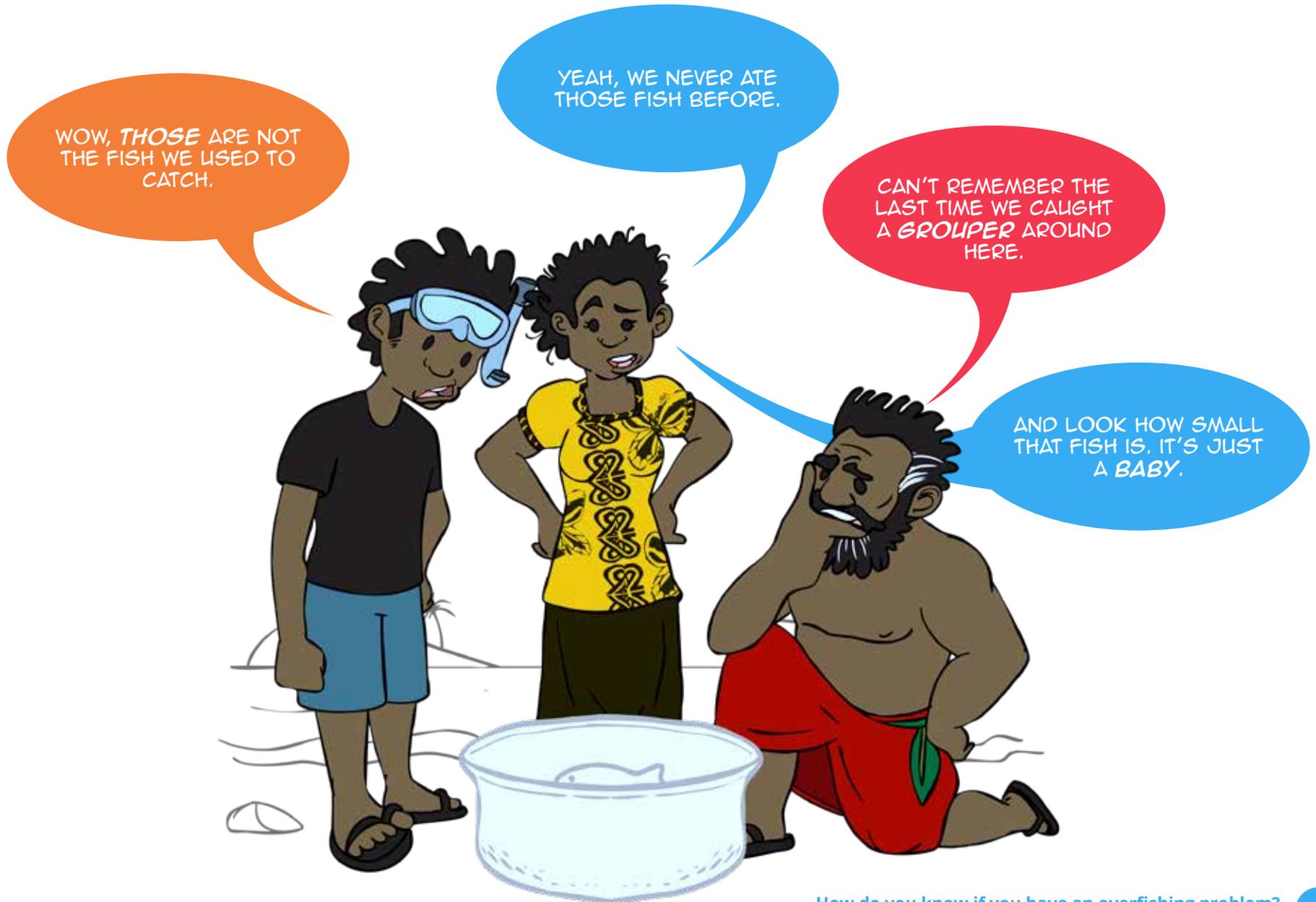


SECTION 2

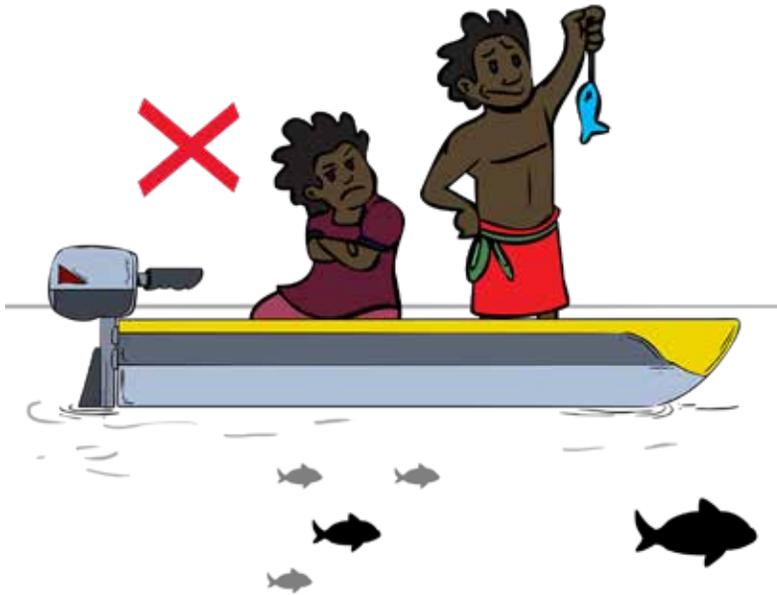
How do you know if you have an overfishing problem?



Whether you think you have a problem or not, we suggest you try these few simple ways to do rapid health checks on your fishing grounds. What you find might surprise you.

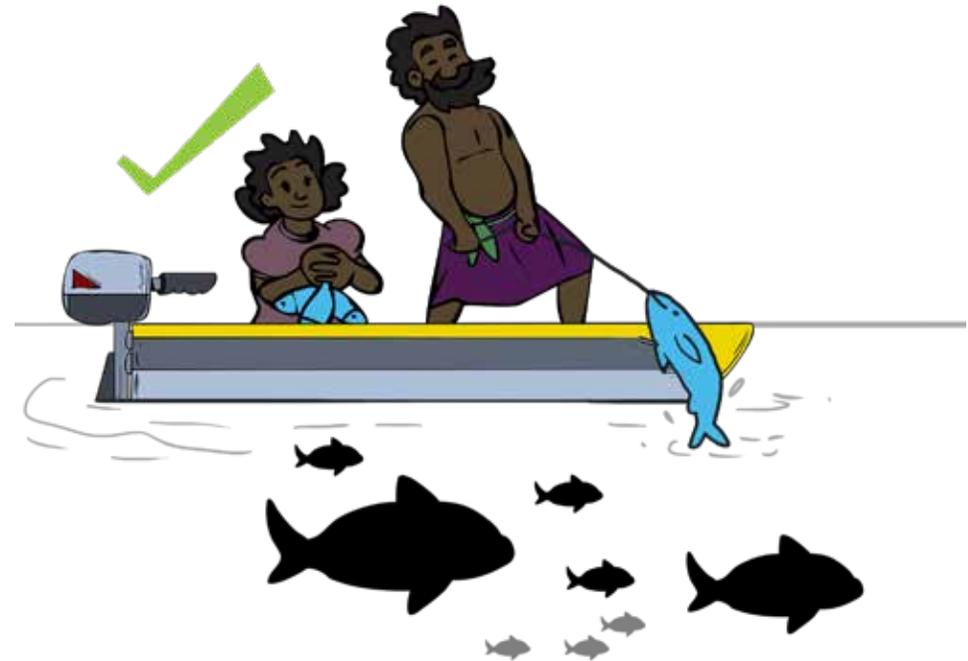


But first, we need to understand what overfishing is. Overfishing happens when you have too few mature fish left to breed. Catches decline and you get less and smaller fish.



If you catch too many fish and take ones that haven't had a chance to breed, catches decline.

If you have harmful land-use practices harming critical habitat, it can also mean less fish survive and breed and catches can still decline.



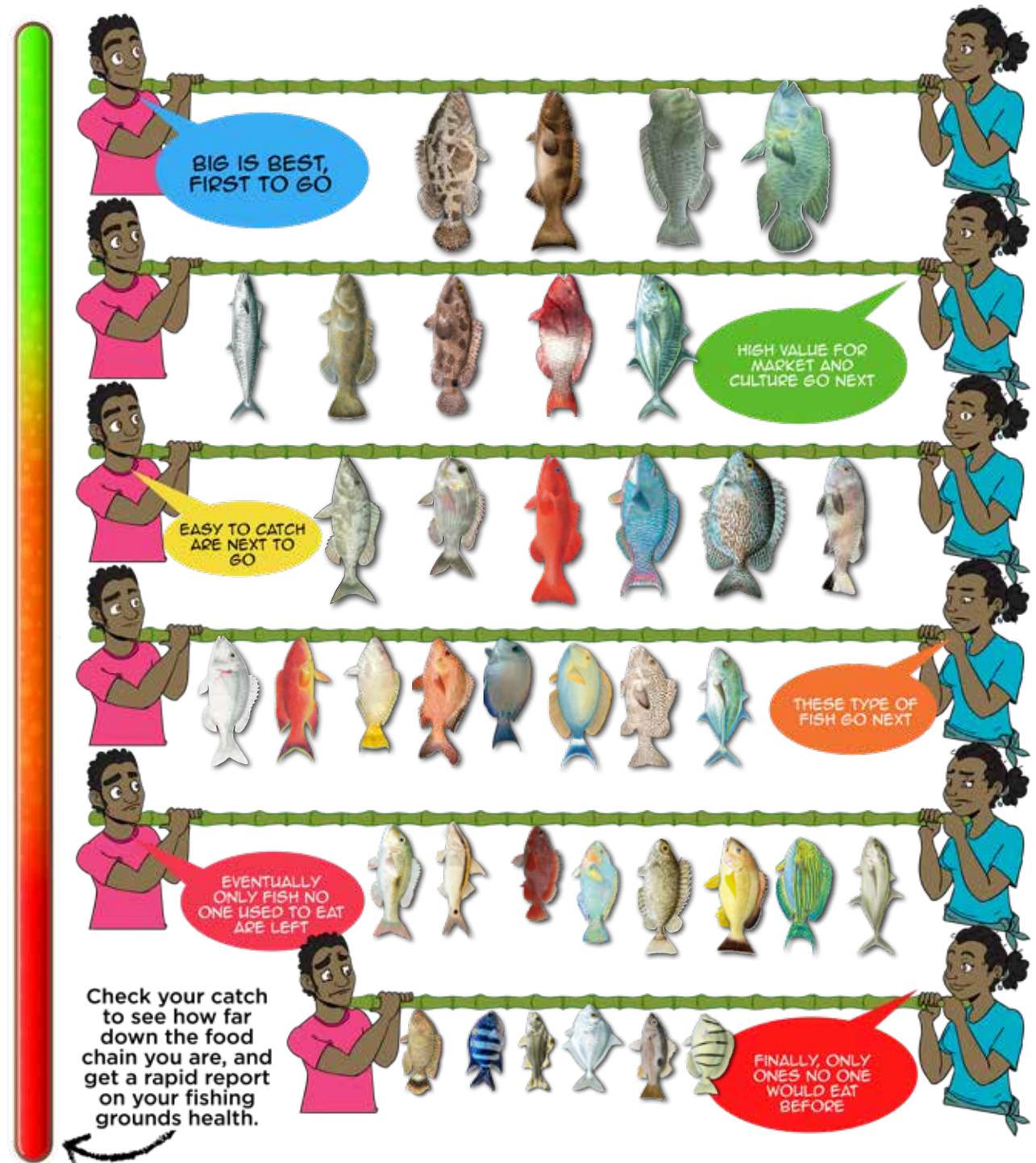
If you have smart fishing practices and rules, and healthy habitats, fish will get big enough to breed before you catch them, and catches get bigger and better.

HEALTH CHECK #1: FOOD CHAIN TEST

So how do you know if there are too few fish breeding?

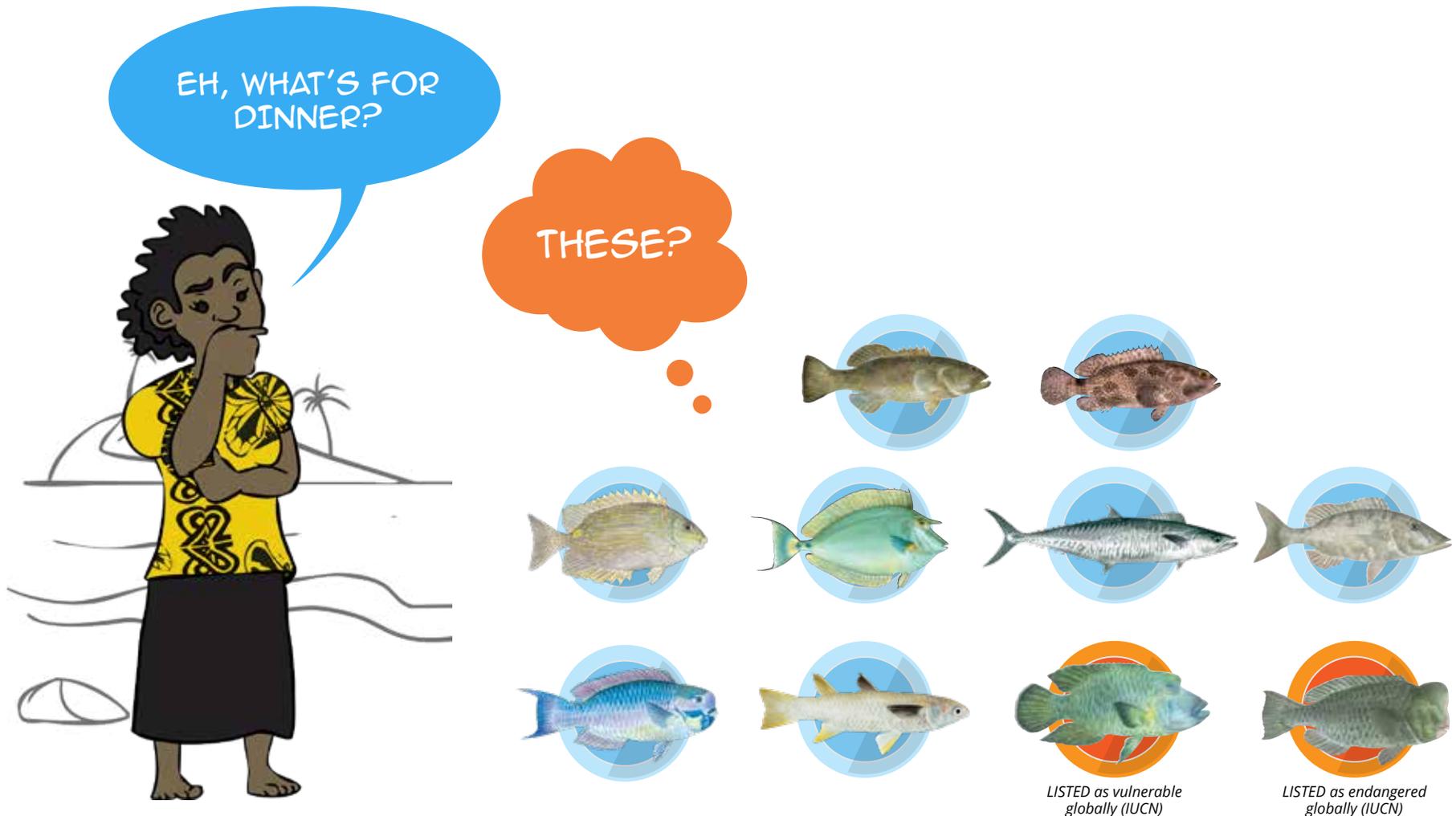
Fish at the top of the food chain are the most sought after but also typically take the longest to reach sexual maturity and reproduce, meaning they are the most vulnerable to overfishing.

These are usually overfished first, then the next best fish is targeted and on down the food chain.



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

A quick way to see how overfished your fishing grounds are is to look at your catch.

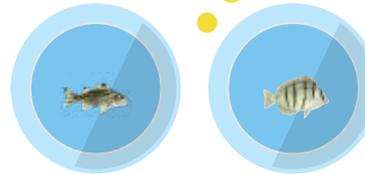


Fish illustrations reproduced with permission of the Pacific Community (SPC) and cChange.

VULNERABLE (CITES)

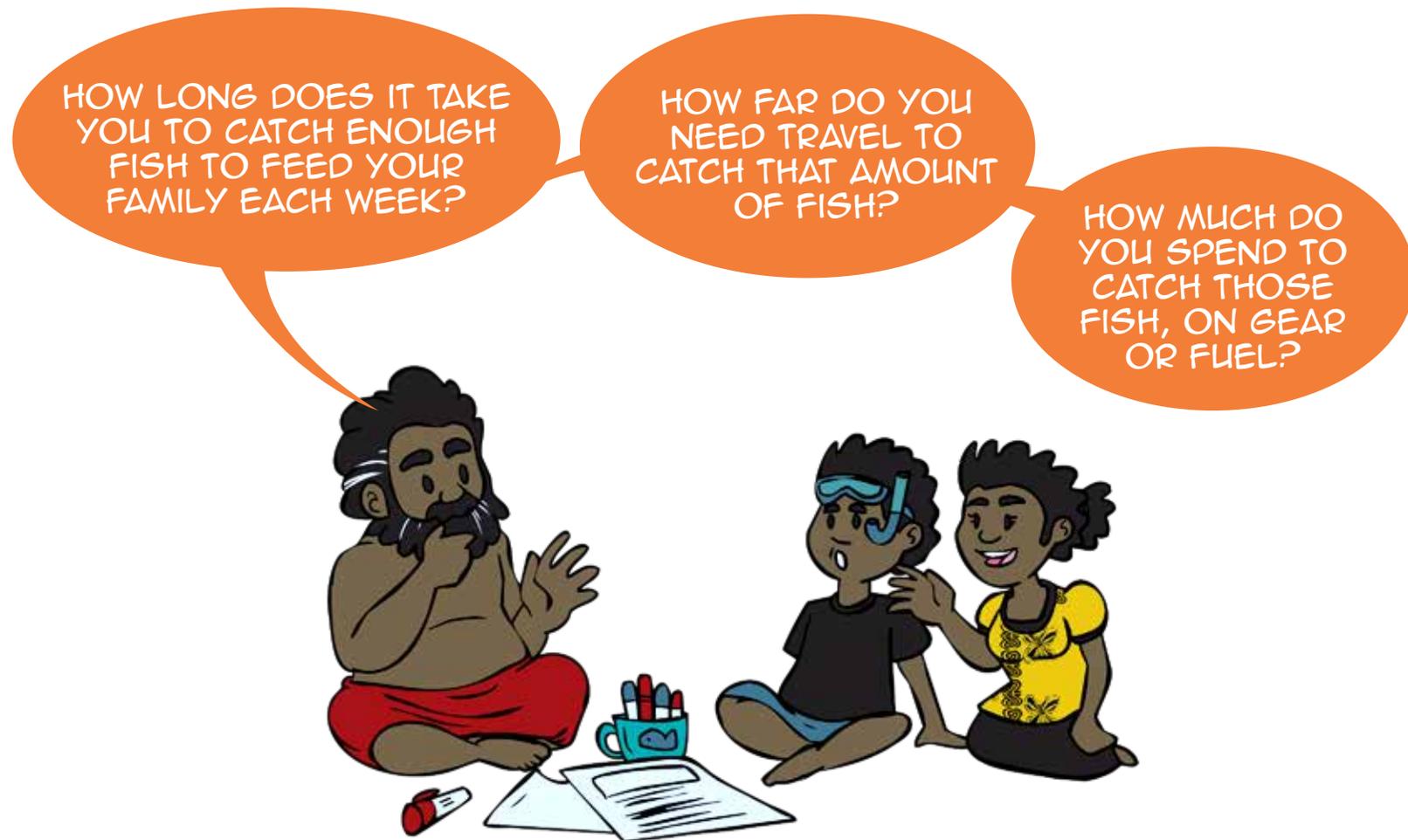
ARE YOU STILL CATCHING THE BIG FISH?

Or are you further down the food chain?



HEALTH CHECK #2: CPUE CHECK

Another way to see if you have an overfishing problem is to ask fishers how much effort it takes to catch the same amount of fish over time.



The key is asking the same questions each time and comparing the answers. Scientists call this approach measuring the Catch Per Unit Effort. In other words, how much time and money does it take to catch your fish.

HEALTH CHECK #3: SIZE HEALTH CHECK

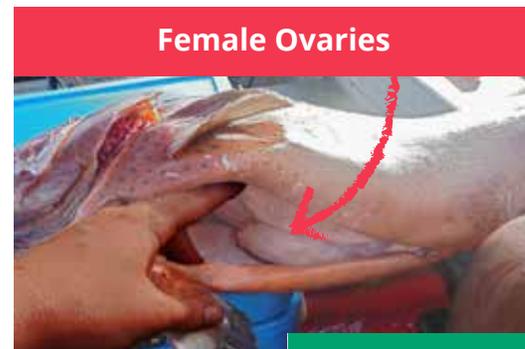
If you want good catches year after year, fish need to get big enough to breed before you catch them. This is why looking at fish sizes can help you understand how healthy your fishing ground is.

But there is not a lot of available scientific information in Papua New Guinea on the

minimum size each fish need to grow to before they breed.

So for fishers who want to determine what size a fish is when it reaches sexual maturity, you can cut them open and see for yourself. Mature fish will have developed gonads: ovaries for female fish and testes for male fish.

How to Do a Size Check



© Gabrielle Cotonéa



© Gabrielle Cotonéa

Step One. Cut fish open and examine if it has mature gonads. Mature females have ovaries. Male have testes.



© Sammie Waru

Step Two. Record what sizes each fish is (both mature and immature) to see what size they are when they have developed gonads. Try to examine 50 to 100 fish over time, to be sure you have enough range of sizes.

Fish	Sexually Mature	Size
	Yes/No	

YUMI MAS TOKTOK

It's important for communities to talk about the changes they experience and the challenges they are facing.

Can you sit together in small groups and talk about the kind of changes you have seen?

ARE YOU STILL CATCHING ANY GOOD FISH?

HOW LONG DOES IT TAKE YOU TO CATCH ENOUGH FISH TO FEED YOUR FAMILY?

ARE MOST OF THE FISH YOU ARE CATCHING IMMATURE OR MATURE?



SECTION 3

What can we do about overfishing?



So what can you do about overfishing in your community?

That's where community-led fisheries management comes in.

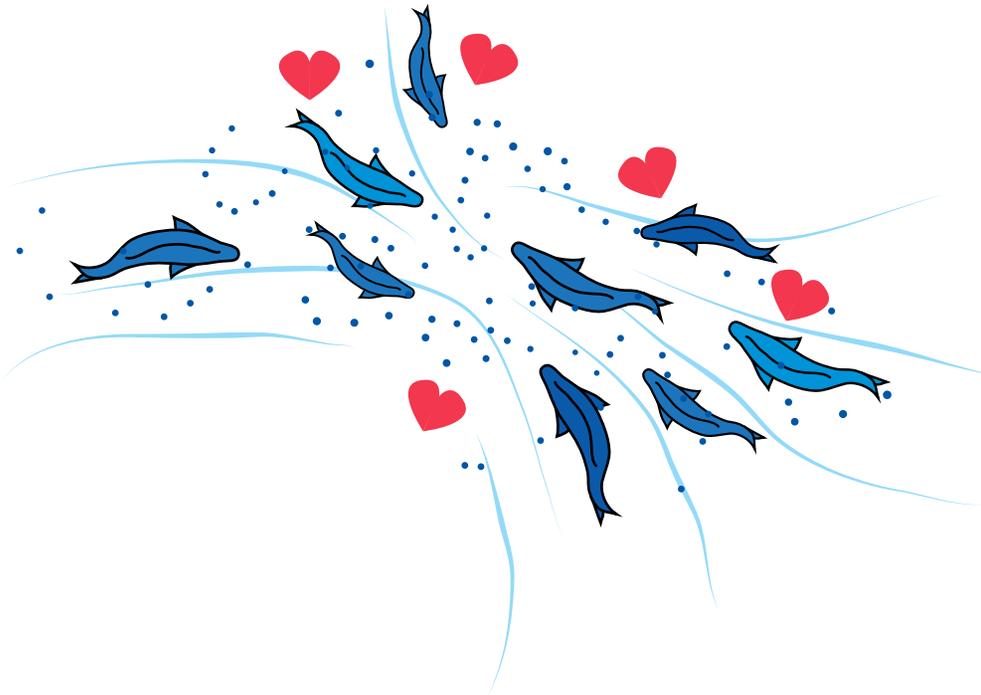
Community-based fisheries management is really just making rules to ensure our catches are always sustainable. A community typically targets rules that help them deal with the challenges they are facing.

The next few pages will share some of the typical rules communities can make.



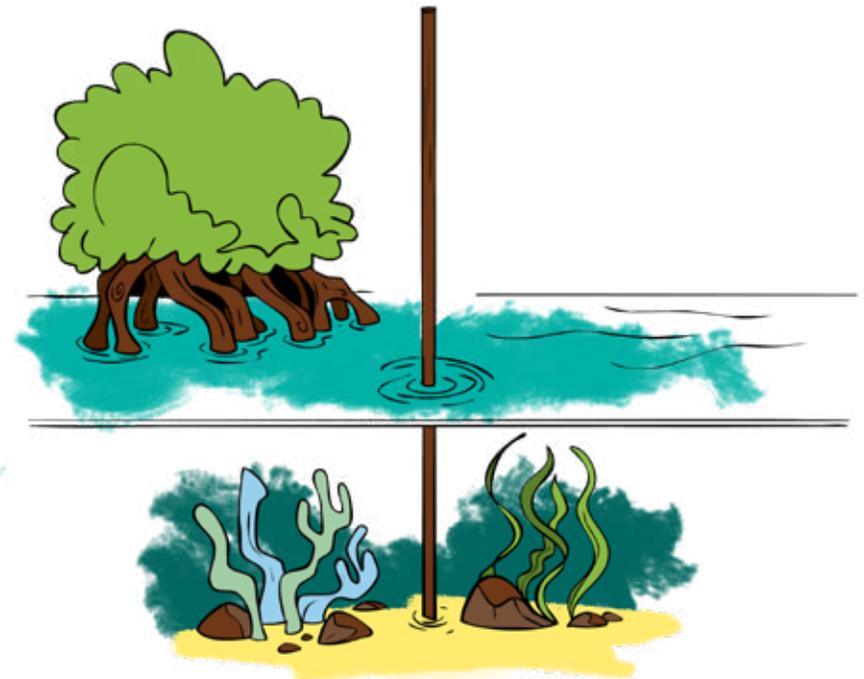
SPAWNING SEASON BANS

Some fish are especially vulnerable during their peak spawning months, when they gather in large numbers to breed. If you allow the fish to first breed, you help maintain good fish catches each year. Grouper are good example of fish that can use spawning season protections.



MARINE PROTECTED AREAS

You can establish marine protected areas, or tambu areas, to help create space for fish to grow and breed each year. The fishing tambu areas help restock all the fishing grounds. Tambu areas can also be placed on important habitat that fish need. Please note small tambu areas will not fully protect fish that swim over large areas.



HARMFUL FISHING BANS

You can ban harmful fishing that leaves too few fish behind. Poison root fishing and night diving and scuba spearfishing are examples of practices communities have banned. Small net sizes too, particularly in fish nursery grounds.



LIMITS ON FISHERS/ CATCH

You can limit the number of fishers allowed to fish in your fishing grounds. Some places limit the number of outsiders first. Alternatively you can limit how much fish people can take, by weight or fish number. This is a good idea in areas that decide to open up their protected area. They limit the number of fish, so not all the breeding stock is lost.



BANS ON ENDANGERED SPECIES

Some fish and other marine species are so heavily overfished they are at risk of disappearing all together. In such cases, there are restrictions and bans in place to help them return to a healthy population.



MINIMUM FISH SIZES

Establish minimum size limits to ensure fish reach a mature size so they can breed and restock fishing grounds. You can also use bigger hooks and bigger net sizes to ensure immature fish are not caught before they have a chance to breed.



SELECTIVE HARVESTING

You can limit the taking of certain sexes of species. For instance, not taking a female mud crab or one carrying eggs.

You can also ban taking males or females of certain species where they change sexes in their lifetime. Some parrotfish change from male to female later in life and if you take only the big ones you will only have males left and so reproduction can decline.



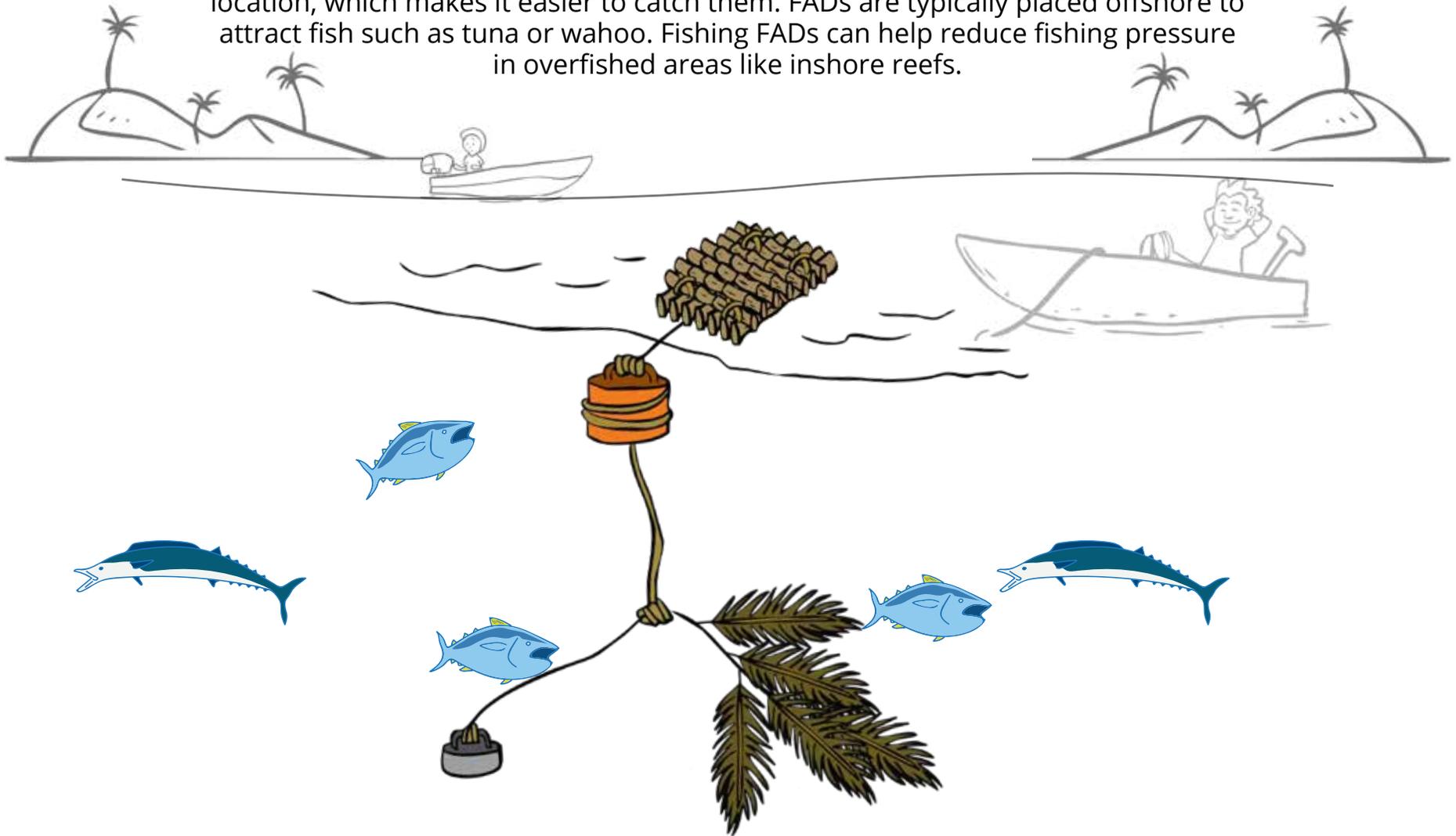
PROTECTION FOR KEY HABITATS

Protect key habitats from harm, so fish can grow through life stages. For instance fish might hide in mangroves when they are small, move into seagrass areas and reefs as they get big. Remember you also might ban land practices that cause harmful runoffs.



FISH AGGREGATION DEVICES

Fish Aggregation Devices are man-made objects used to attract fish to one location, which makes it easier to catch them. FADs are typically placed offshore to attract fish such as tuna or wahoo. Fishing FADs can help reduce fishing pressure in overfished areas like inshore reefs.



PAPUA NEW GUINEA FISHERIES REGULATIONS

What about government regulations?

The national government has regulations to prevent fisheries from collapsing. These regulations are introduced when a resource is heavily overfished or overharvested. For example, closures and minimum sizes for beche-de-mer to help sea cucumber populations recover.

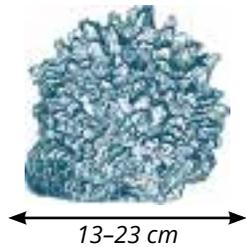
There are also laws that state what size fish, shells and lobsters need to be before they are caught and bans on destructive and harmful fishing practices.

Here are some of the laws that communities should follow to help revive high-value species and sustain good catches. For more information, please contact the National Fisheries Authority (NFA).

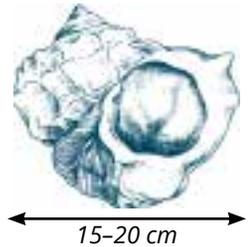
TROCHUS
Trochus niloticus



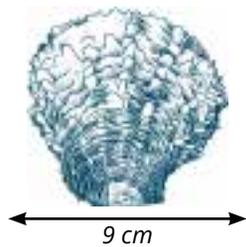
GOLD-LIP PEARL OYSTER
Pinctada maxima



GREEN SNAIL
Turbo marmoratus



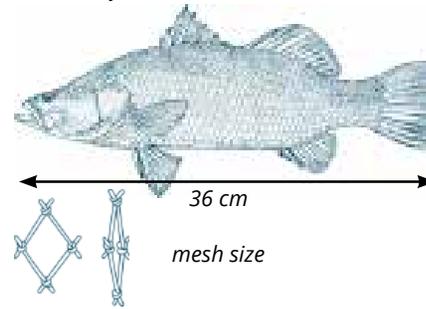
BLACK-LIP PEARL OYSTER
Pinctada margaritifera



RESTRICTIONS: Commercial buyers must have a license issued by NFA

BARRAMUNDI

Lates calcarifer



GEAR RESTRICTIONS:

1. Prohibited to use seine and gill nets with net mesh size more than 15 cm
2. Prohibited to use seine and gill nets with mesh sizes between 6.35 cm and 12.7 cm from 1 March–30 April (peak period of juvenile recruitment) between Sui village and PNG/Irian Jaya border
3. Prohibited to use seine and gill nets with mesh sizes more than 12.7 cm from 1 September–31 October (peak spawning time) between Sui village and Buzi village

AREA CLOSURE:

1. Spawning and breeding grounds closed to commercial fishing 1 October–30 November between Sigabaduru village and PNG/Irian Jaya border

OTHER RESTRICTIONS:

1. Owners of licensed collector vessels prohibited from catching barramundi
2. Total allowable catch is 260 metric tonnes per year

SEA CUCUMBERS (BECHE-DE-MER)

SEASON: 1 October–15 January, unless provincial total allowable catch is reached earlier; check with the provincial fisheries office
RESTRICTIONS: Exporters must have license issued by NFA

FOR ALL PNG MARINE RESOURCES

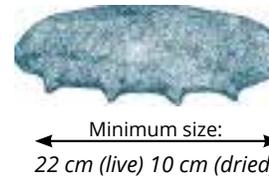
Forbidden to use explosives to catch fish and other marine resources.

Forbidden to use plants and chemicals to kill and stun fish.

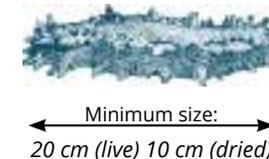
Forbidden to harvest all sedentary animals (i.e. those that do not move, or move very slowly) such as trochus, sea cucumbers, pearl oysters and green snail at night using underwater lights, scuba or hookah.

HIGH VALUE SPECIES

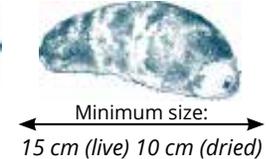
BLACK TEATFISH
Holothuria nobilis



GREENFISH
Stichopus chloronotus



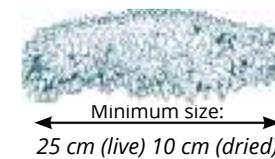
STONEFISH
Actinopyga lecanora



BLACKFISH
Actinopyga miliaris



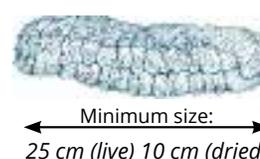
PRICKLY REDFISH
Thelenota ananas



SURF REDFISH
Actinopyga mauritiana



CURRYFISH
Stichopus hermanni



SANDFISH
Holothuria scabra



WHITE TEATFISH
Holothuria fuscogilva



Information reproduced with the permission of NFA.

LIVE REEF FISH RESTRICTIONS

- ✓ Operators must have license issued by NFA
- ✓ Dimensions for fish cages: 3 m x 3 m x 4 m
- ✓ Holding capacity of cages must not exceed 700 kg
- X Fishing within or near a spawning aggregation site prohibited
- X Use of scuba or hookah gear prohibited

LOW VALUE SPECIES

AMBERFISH
Thelenota anax



Minimum size:
20 cm (live) 10 cm (dried)

ELEPHANT TRUNKFISH
Holothuria fuscopunctata



Minimum size:
45 cm (live) 15 cm (dried)

BROWN SANDFISH
Bohadschia vitiensis



Minimum size:
20 cm (live) 10 cm (dried)

LOLLYFISH
Holothuria atra



Minimum size:
30 cm (live) 15 cm (dried)

CHALKFISH
Bohadschia similis



Minimum size:
25 cm (live) 7 cm (dried)

PINKFISH
Holothuria edulis



Minimum size:
25 cm (live) 10 cm (dried)

DEEP-WATER REDFISH
Actinopyga echinites



Minimum size:
25 cm (live) 15 cm (dried)

TIGERFISH
Bohadschia argus



Minimum size:
20 cm (live) 10 cm (dried)

LIVE REEF FISH

FLOWERY COD
Epinephelus fuscoguttatus



55 cm

CAMOUFLAGE GROUPE
Epinephelus polyphekadion



37 cm

SQUARETAIL CORAL TROUT
Plectropomus areolatus



36 cm

CHINESE FOOTBALLER TROUT
Plectropomus laevis



60 cm

RED EMPEROR
Lutjanus sebae



55 cm

LEOPARD CORAL TROUT
Plectropomus leopardus



36 cm

HIGHFIN CORAL TROUT
Plectropomus oligacanthus



36 cm

HUMPHEAD MAORI WRASSE
Cheilinus undulatus



65 cm

BARRAMUNDI COD
Cromileptes altivelis



40 cm

MANGROVE JACK
Lutjanus argentimaculatus



40 cm

MAORI PERCH
Lutjanus rivulatus



55 cm

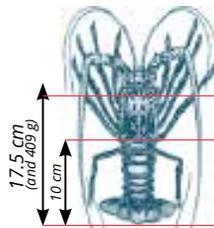
MOSES PERCH
Lutjanus russellii



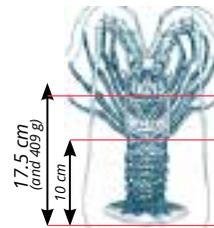
24 cm

LOBSTERS

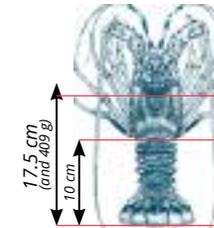
Commercial buyers must have license issued by NFA



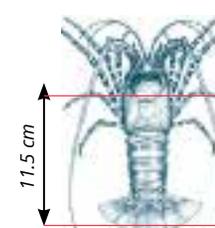
PAINTED LOBSTER
Panulirus versicolor



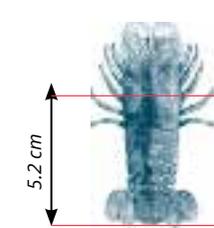
LONG-LEGGED LOBSTER
Panulirus longipes



SCALLOPED LOBSTER
Panulirus homarus



ORNATE LOBSTER
Panulirus ornatus



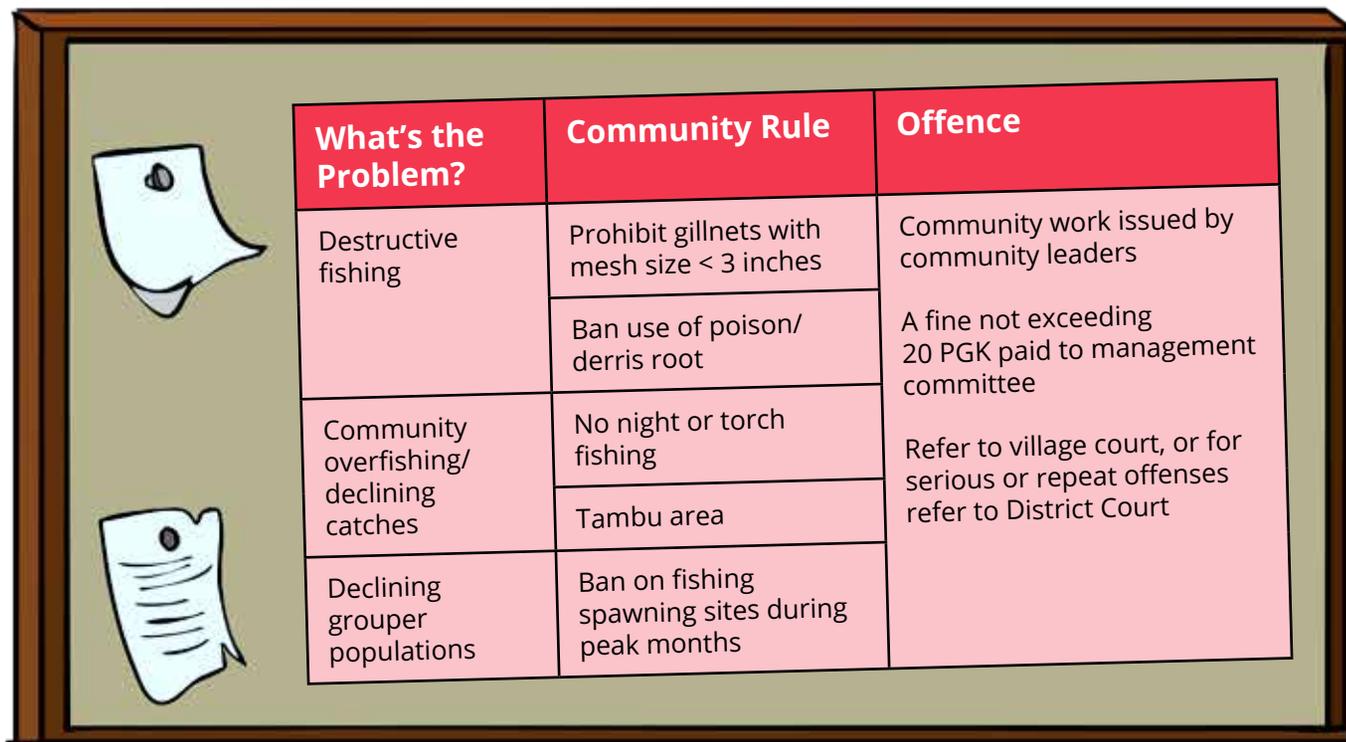
SLIPPER LOBSTERS
Scyllaridae

What can we do about overfishing?

COMMUNITY RULES MAKING

How can communities make rules they can enforce themselves? Like most things, it is best to follow existing community processes, and encourage lots of discussion.

To encourage dialogues, keep rule-making simple like this:



What's the Problem?	Community Rule	Offence
Destructive fishing	Prohibit gillnets with mesh size < 3 inches	Community work issued by community leaders A fine not exceeding 20 PGK paid to management committee
	Ban use of poison/ derris root	
Community overfishing/ declining catches	No night or torch fishing	Refer to village court, or for serious or repeat offenses refer to District Court
	Tambu area	
Declining grouper populations	Ban on fishing spawning sites during peak months	



YUMI MAS TOKTOK

It's important for communities to talk about the changes they experience and the challenges they are facing.

Can you sit together in small groups and talk about the kind of changes you have seen?

DO YOU AGREE THAT FISHERIES MANAGEMENT MAKES SENSE IF IT CAN HELP INCREASE CATCHES?

WHAT ARE YOUR CONCERNS ABOUT FISHERIES MANAGEMENT?

ARE THERE CURRENT FISHING RULES IN THE COMMUNITY? ARE THEY HELPING?

ARE YOU INTERESTED IN KNOWING MORE ABOUT THE HEALTH OF YOUR FISHING GROUNDS AND THE RULES THAT CAN HELP IMPROVE CATCHES?



SECTION 3

Where to from here?



SINGAUT BLO SOLWARA

There are many things that communities can do and are doing to get bigger, better catches. The good news is that communities have been making rules for tens of thousands of years in New Ireland to get better catches.

The question to ask everyone and yourself is: do you have the will to come together to find a better way. This is what the Singaut Blo Solwara campaign is about. Working together to revive our fishing grounds and traditions so all communities can thrive.

It will take work to get bigger, better catches.

We can all do the work. We all need to do this work.

*YUMI OLGETA
I KEN MEKIM
WOK!*



Hopefully this booklet has motivated you to get involved.
There are many ways you can get involved:

SHARE THIS BOOKLET WITH YOUR FRIENDS, FAMILY & CHURCH GROUP



TUNE INTO NBC RADIO TO LEARN MORE ON WHAT IS HAPPENING IN NEW IRELAND TO GET BIGGER, BETTER CATCHES



JOIN THE WHATSAPP GROUP!



SEND AN EMAIL:
SINGALTBLOSOLWARA@GMAIL.COM



FOLLOW THE CAMPAIGN:
FACEBOOK.COM/SINGALTBLOSOLWARA
INSTAGRAM.COM/SINGALTBLOSOLWARA

WATCH ON YOUTUBE:
TINYURL.COM/MRXXNSW5



SHARE IT... ON SHAREIT!



IMPORTANT CONTACTS TO LEARN MORE!

- Ailan Awareness**
Address: Ranguva Solwara Skul, Kaselok Village, Kavieng
Search Facebook: Ailan Awareness Inc.
- Caritas**
Email: caritaspng@catholic.org.pg
Search Facebook: Caritas Papua New Guinea
- Live and Learn**
Search Facebook: Live & Learn PNG
Phone number: 984 0028
- Lolieng Sustainable Programme**
Search Facebook: Lolieng Sustainable Programme
Address: Lolieng Village, Mussau Island
- National Fisheries College**
Address: Kavieng, New Ireland
- New Ireland Provincial Administration**
Address: Nusa Parade, Kavieng
Phone number: 984 2289
- New Ireland NBC**
Address: Lovongai Street, Kavieng
Phone number: 749 79028
- West Coast Development Foundation**
Search Facebook: West Coast Development Foundation
Email: wcdf.png2016@gmail.com
- Wildlife Conservation Society**
Address: Bagail, Provincial Fisheries Jetty
Search Facebook: WCSPNG

