

The Caribbean King Crab

A KEY ALLY FOR CORAL REEF RESTORATION

Sara Gutiérrez Plata & Melina Soto
IMIPAS & Healthy Reefs for Healthy People
February 2023



Healthy Reefs
for healthy people

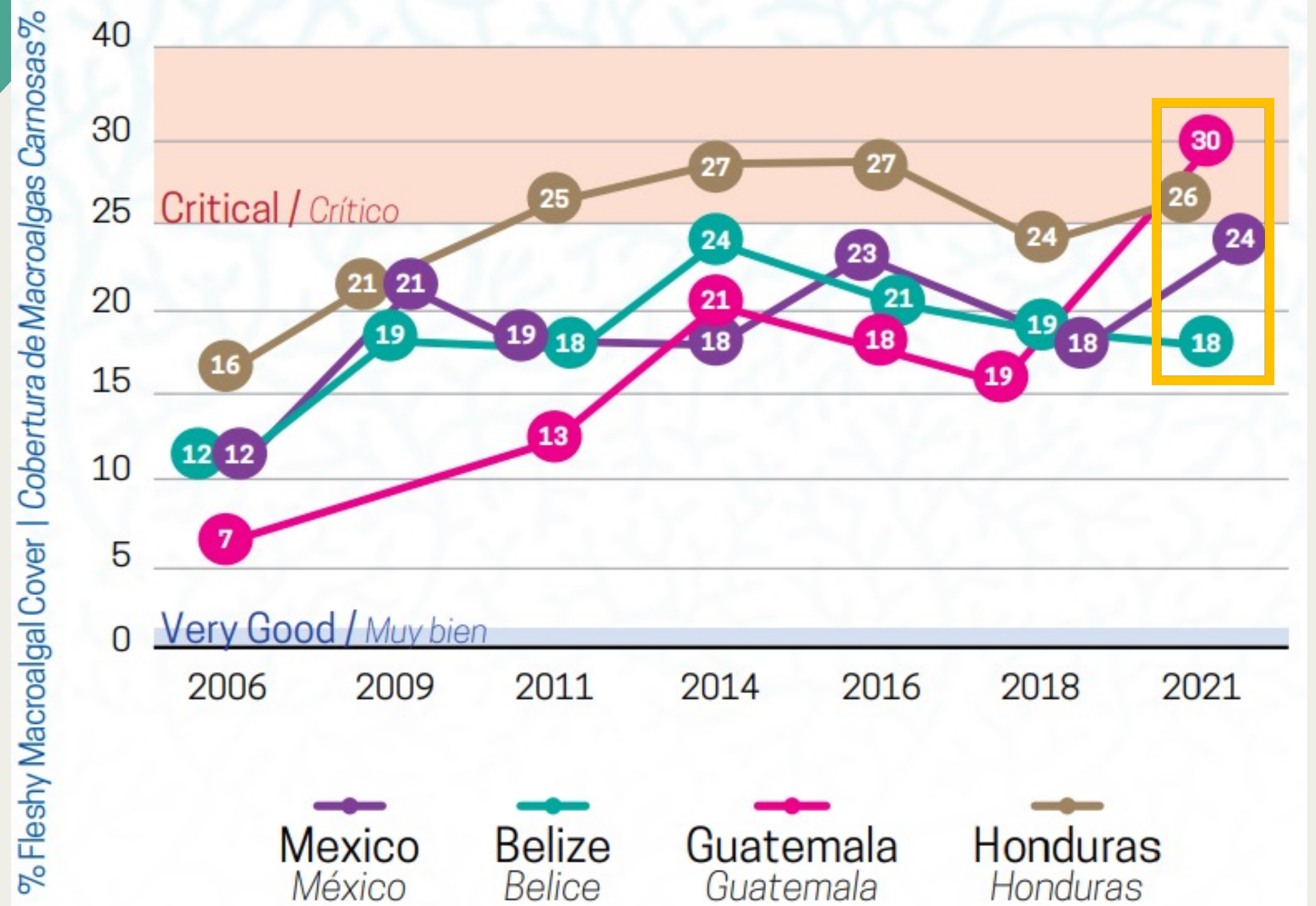


Melina Soto

Gifts from Coral Reefs



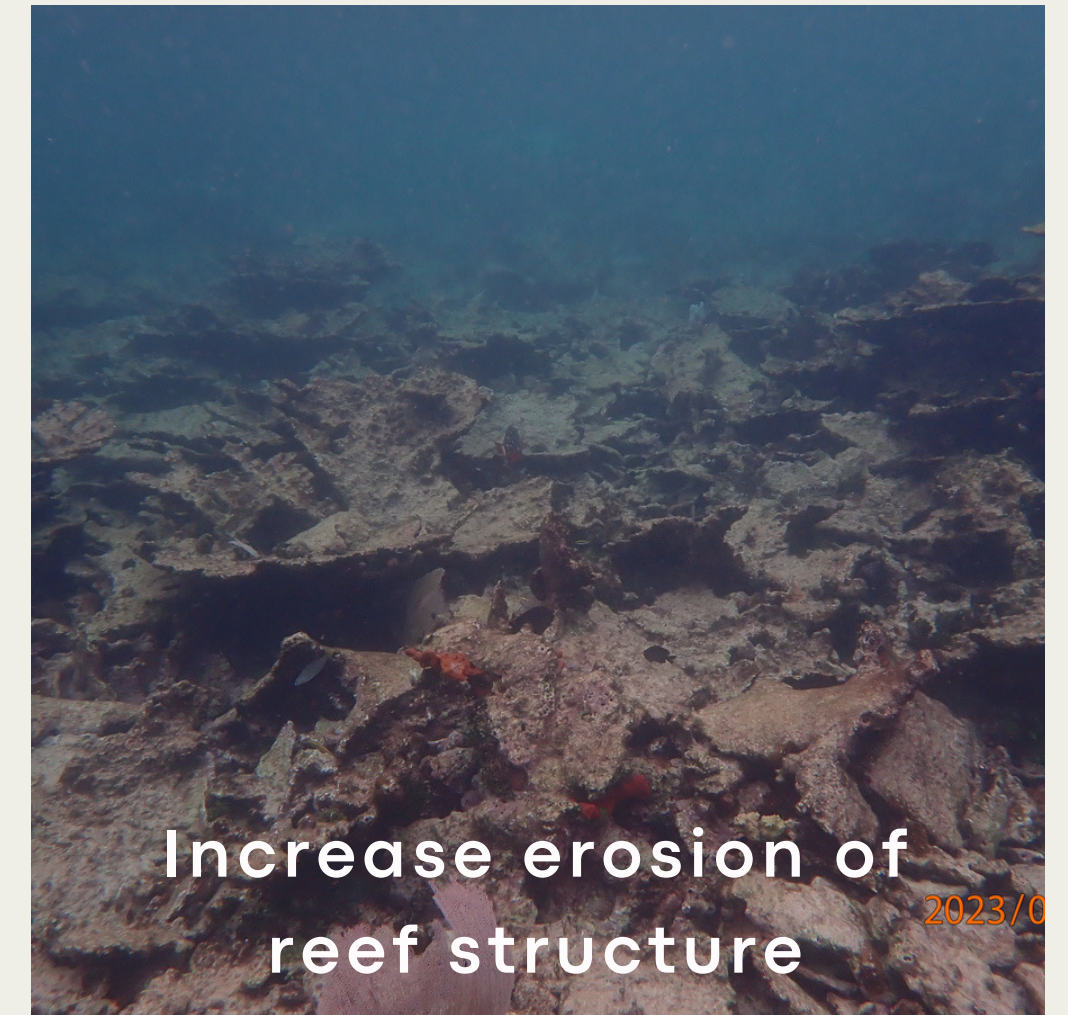
What is happening in the Mesoamerican Reef





This is what our reefs look like today

Effects of macroalgae overgrowth



Loss of coral reef ecosystems

What is the Healthy Reefs Initiative doing?

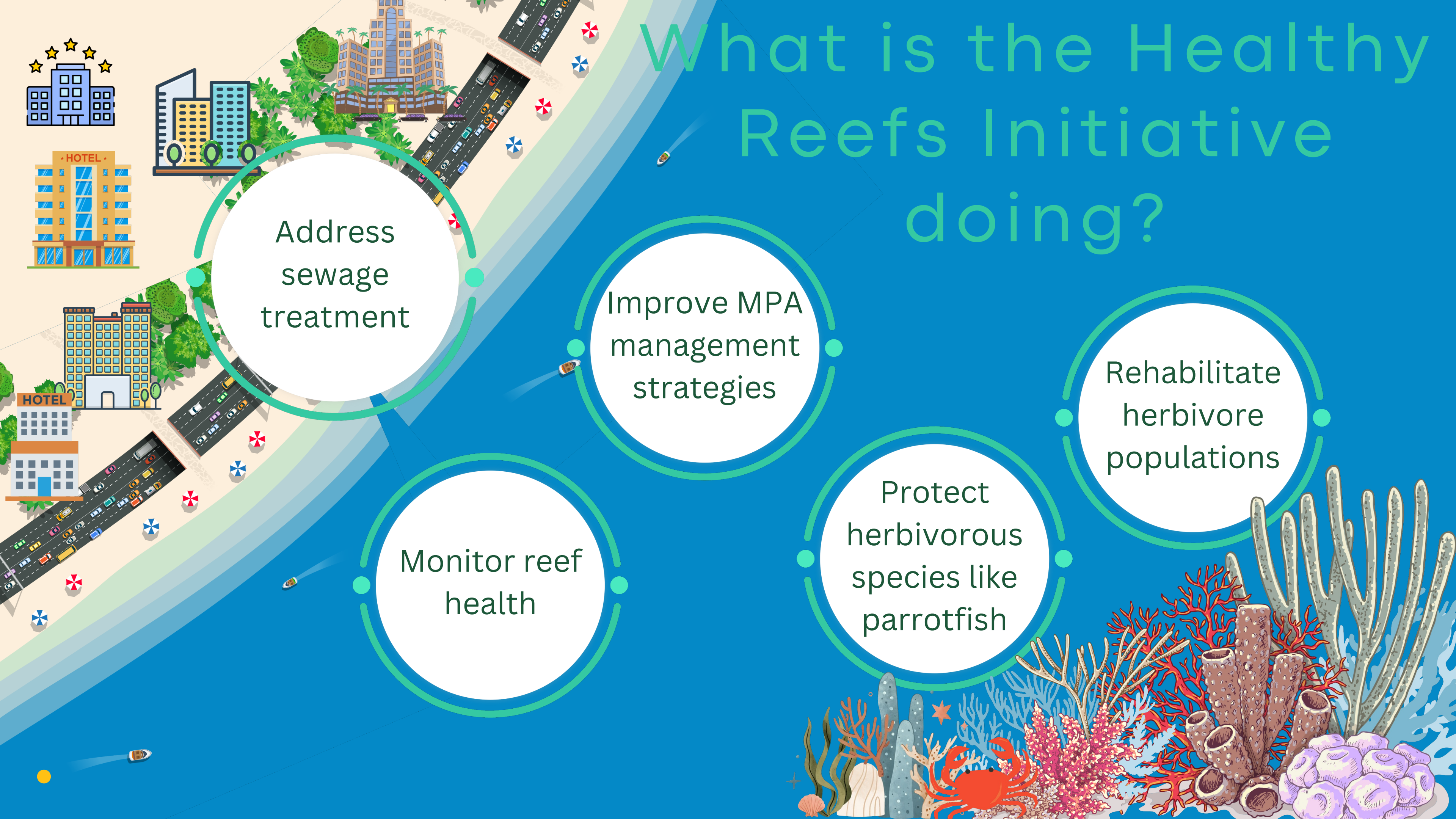
Address
sewage
treatment

Improve MPA
management
strategies

Rehabilitate
herbivore
populations

Monitor reef
health

Protect
herbivorous
species like
parrotfish



Exploring reef herbivores



The Caribbean King Crab as our



ally

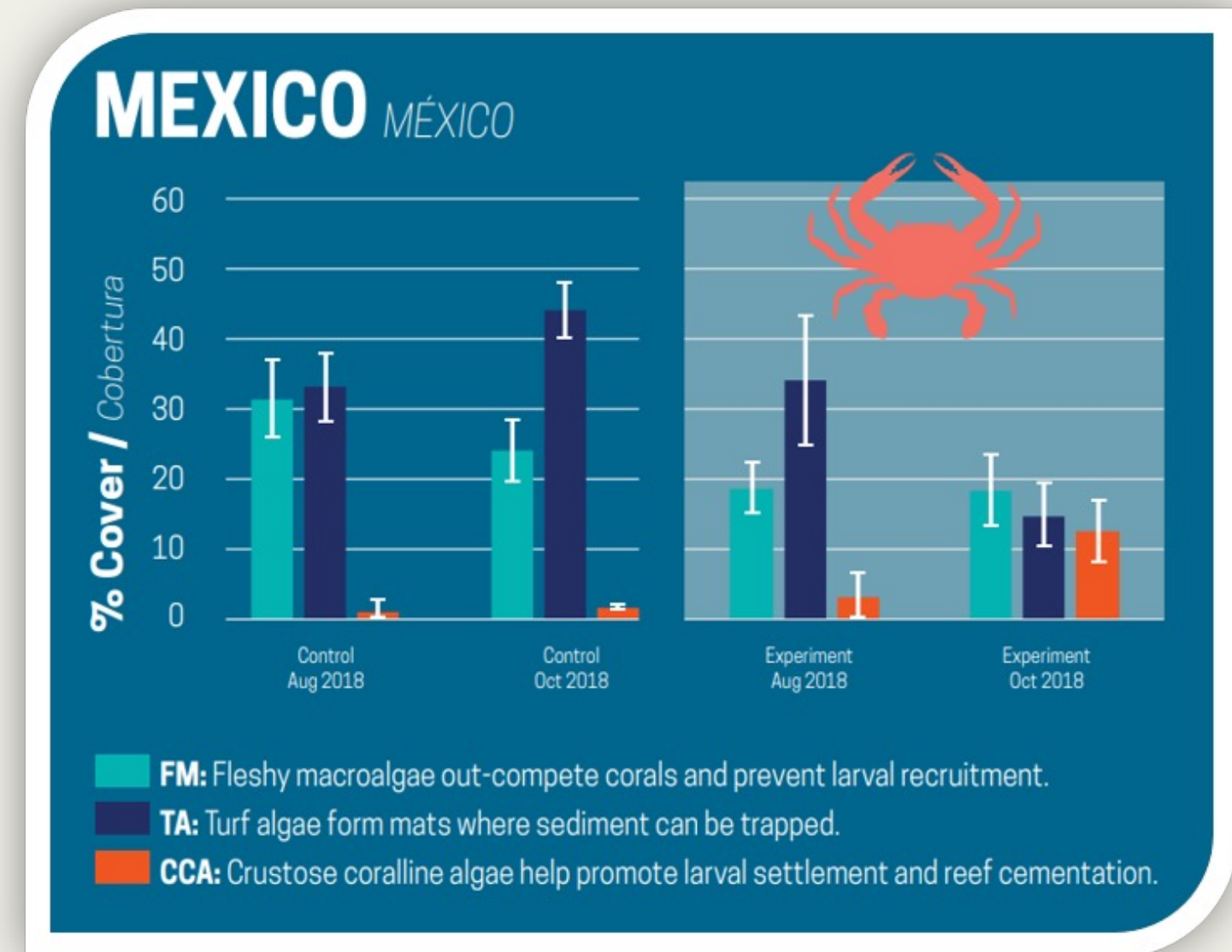
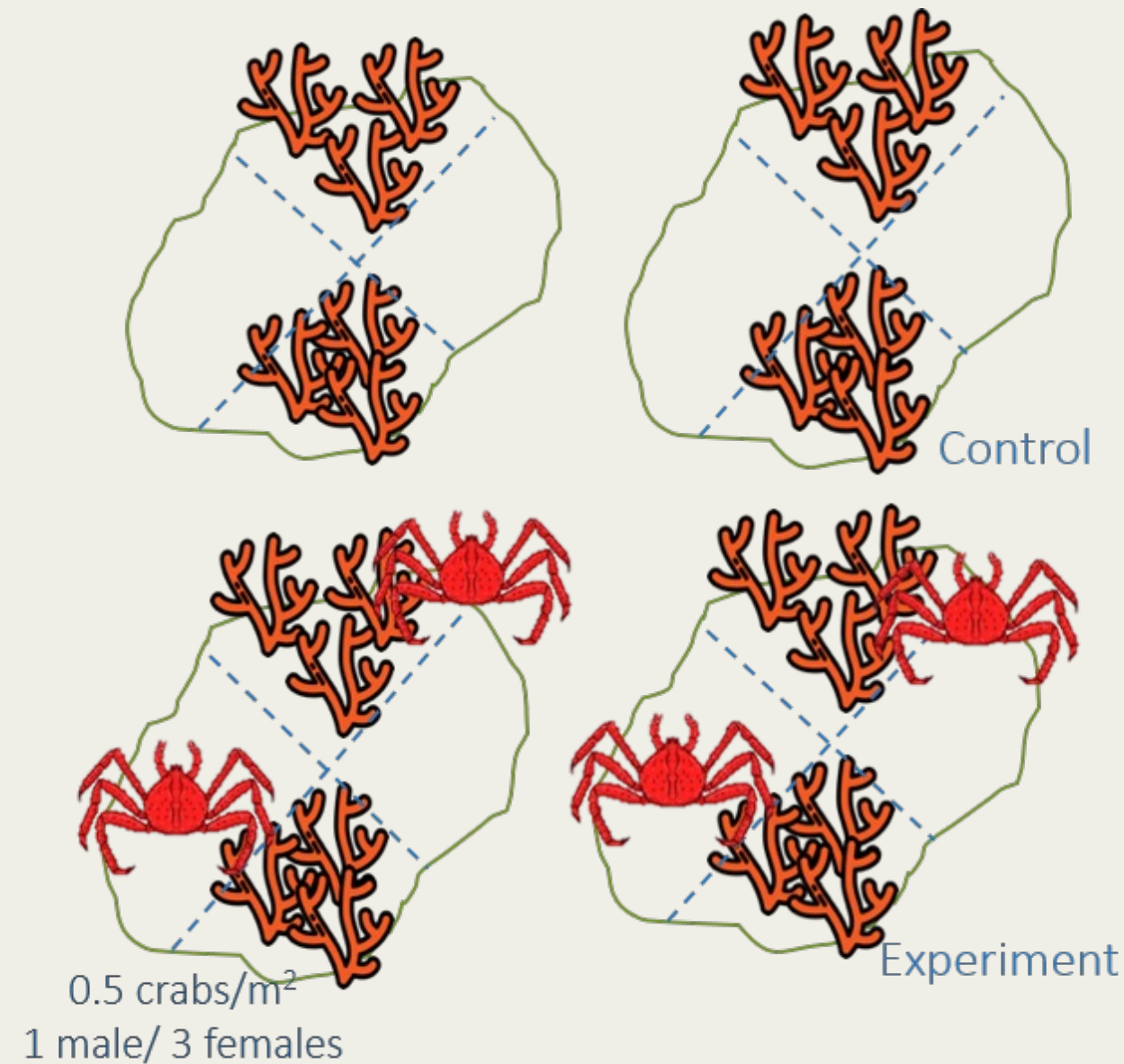


Algae makes up majority of their diet

Feeding occurs during day and night

Voracious eater and selective herbivore

Pilot studies to test efficiency



Simple design with interesting results:
Significant Macroalgae and Turf decrease, and Crustose Coralline Algae increase

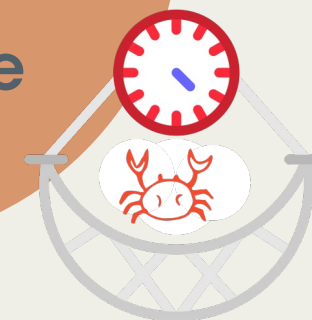
Aquaculture Pilot

Produce
Caribbean
King Crab

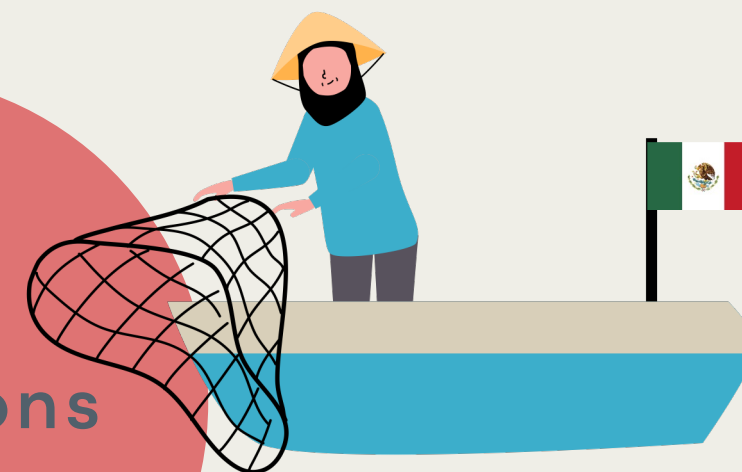


Introduce
organisms
on the reef

Restock a
valuable
fishing
resource



Local
populations
benefit



Reduce
macroalgae
on the reef

Healthier
more
productive
reefs



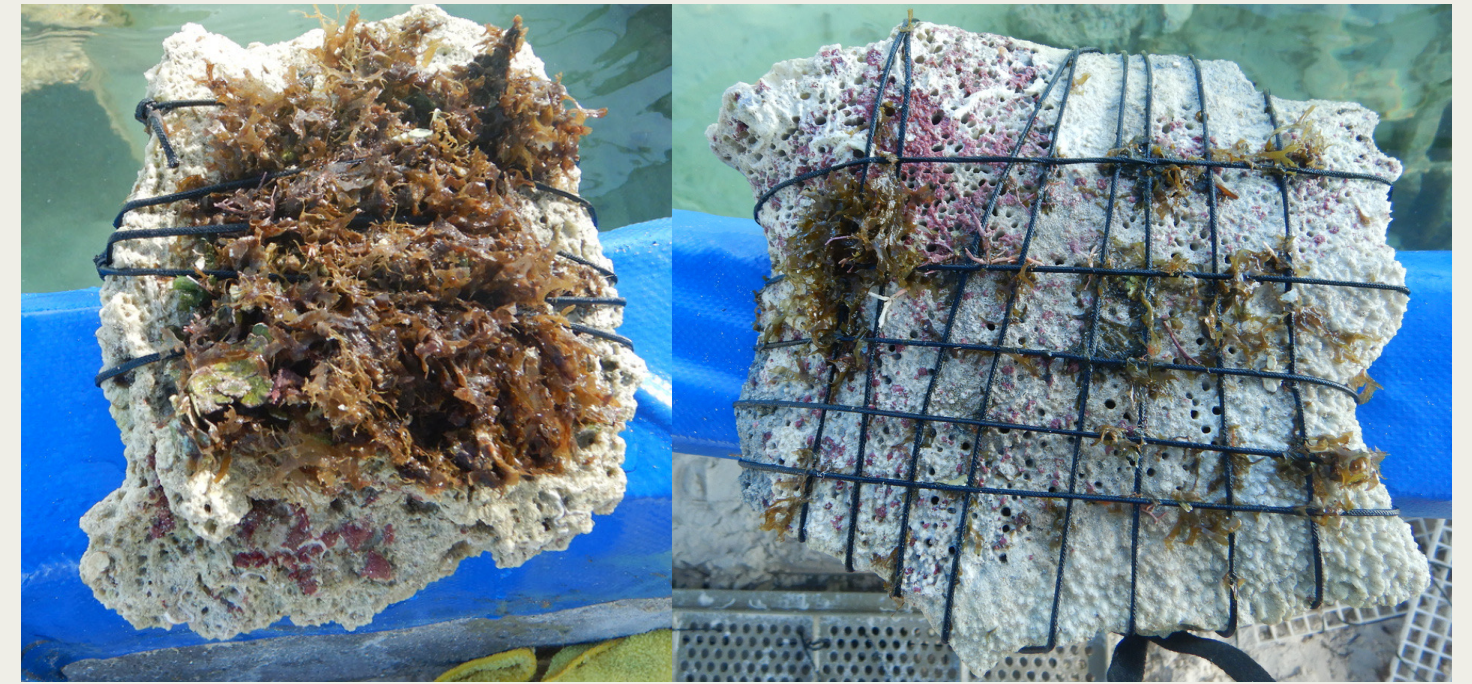
HOW WE STARTED

4 YEARS AGO

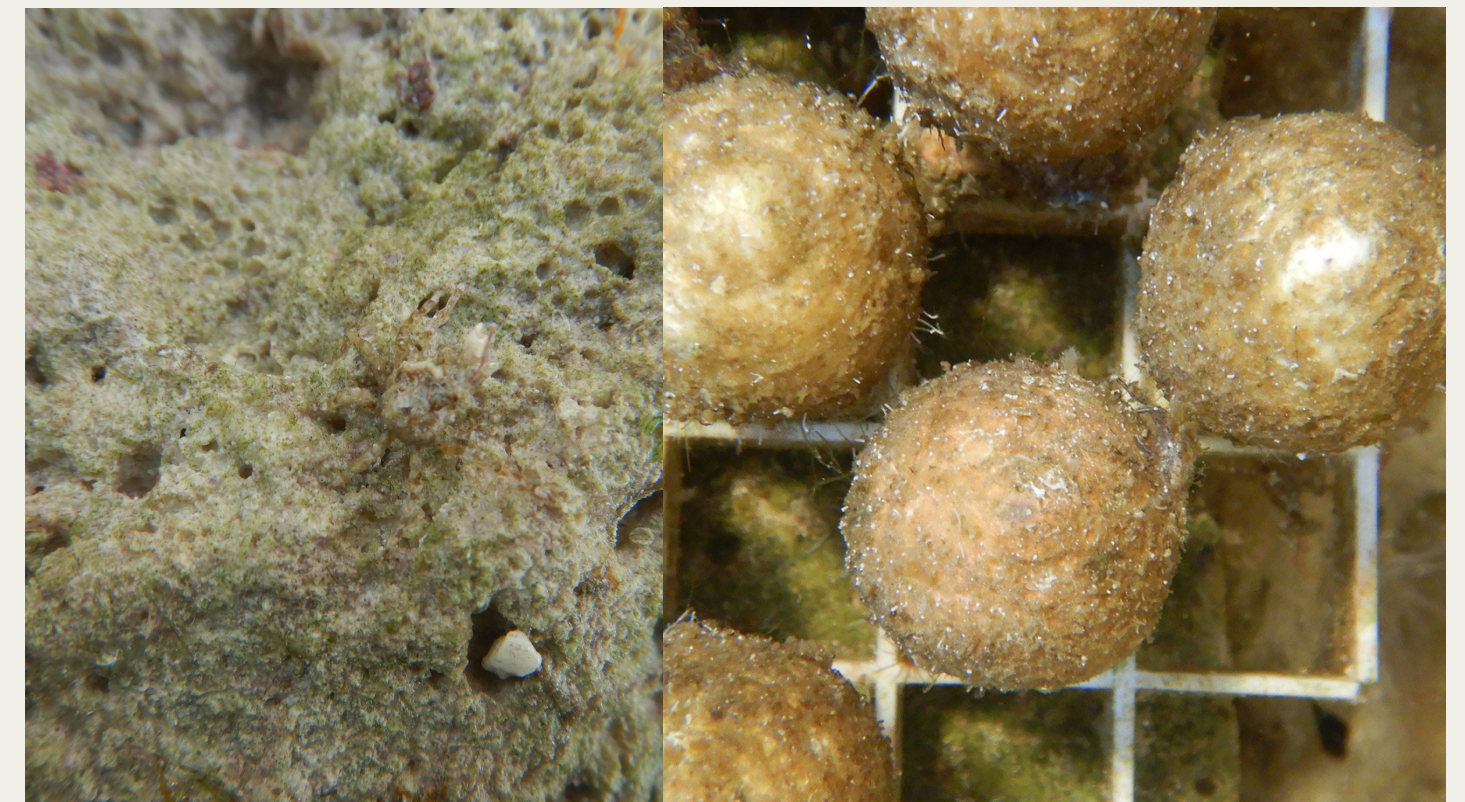


SECTION III. MARICULTURE TECHNIQUES

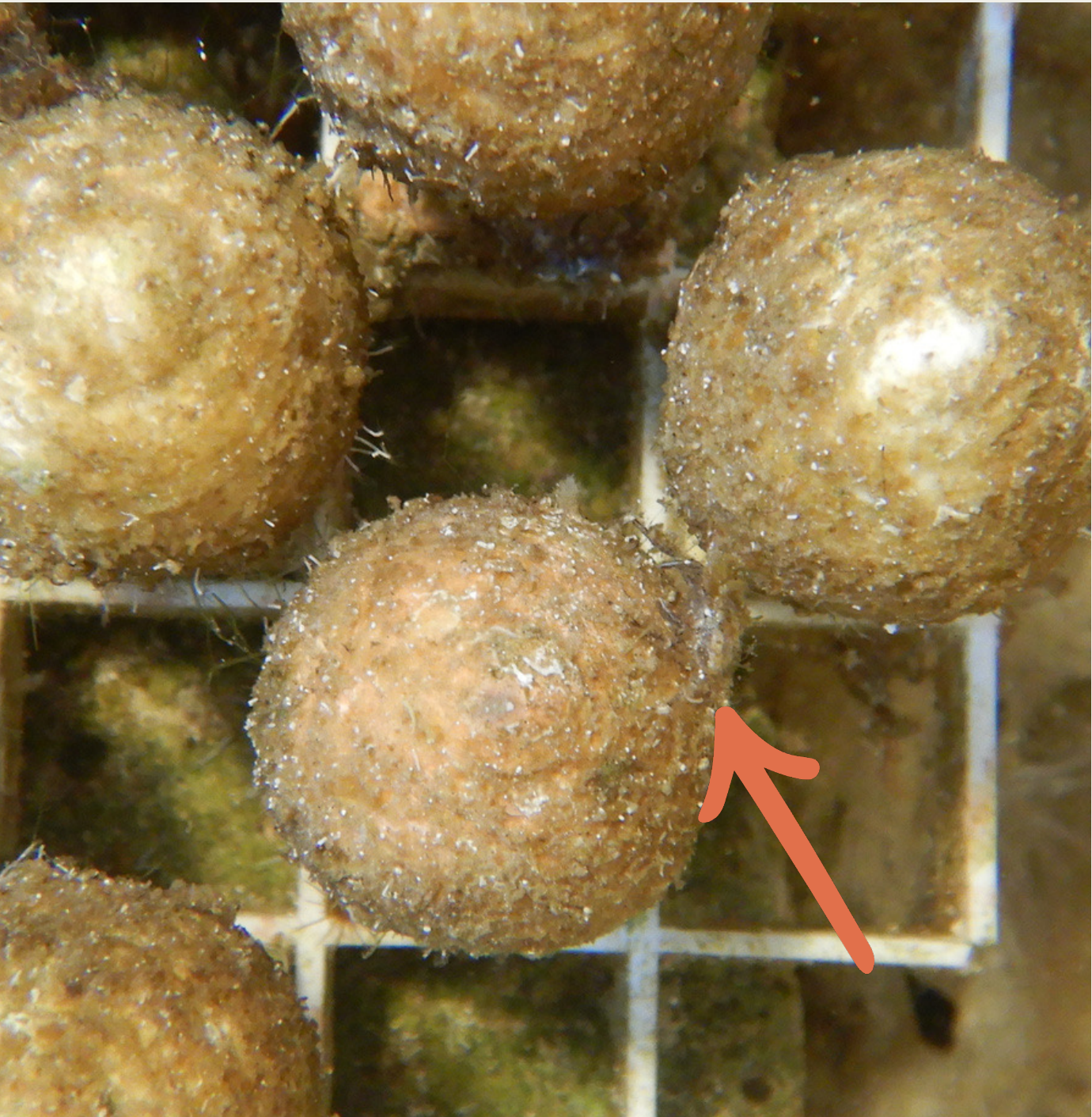
Mariculture Techniques for Mithrax spinosissimus including Broodstock, Larval and Post-Larval Rearing and Growout. K.L. Porter, J.M. Iglehart, M.P. Craig and W.H. Adey



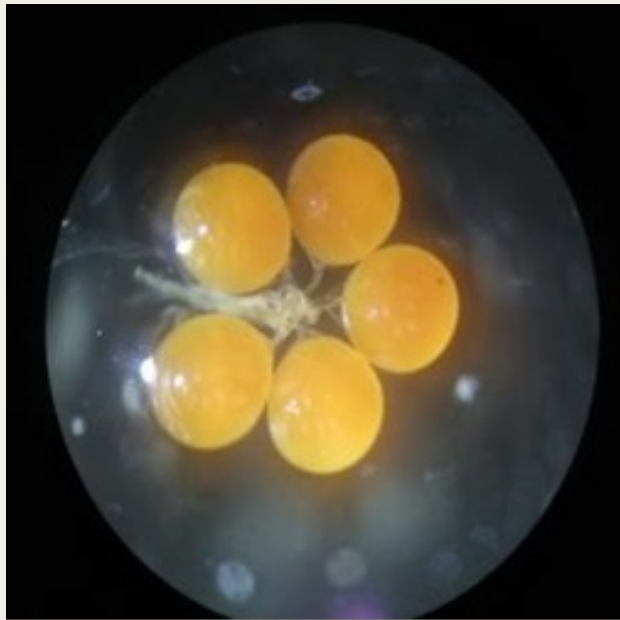
AN INCREDIBLE ACT OF FAITH



AN INCREDIBLE ACT OF FAITH



What we have learned



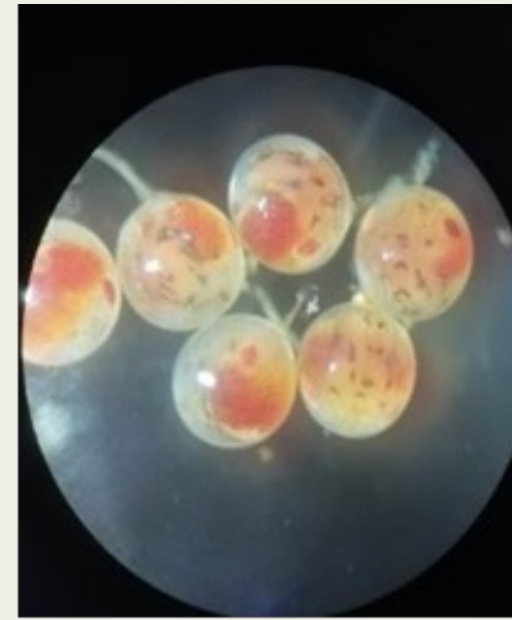
Day 7



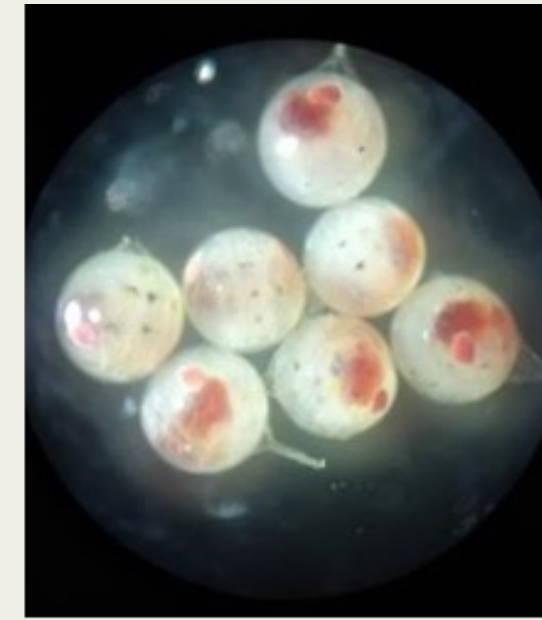
Day 13



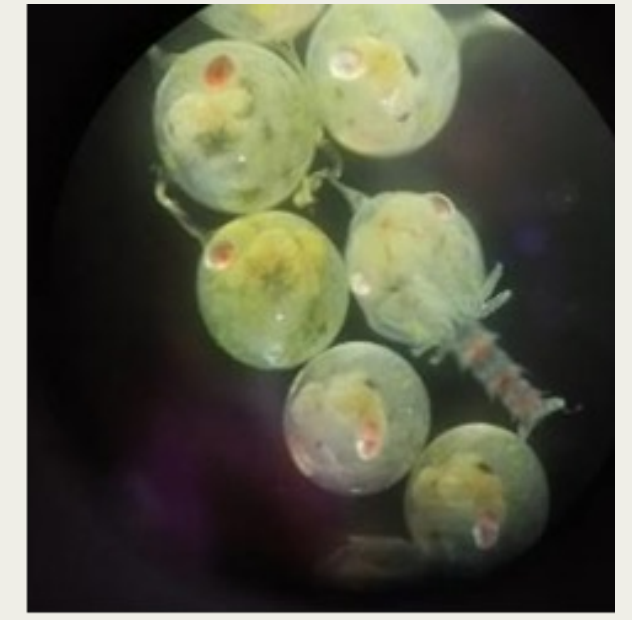
Day 21



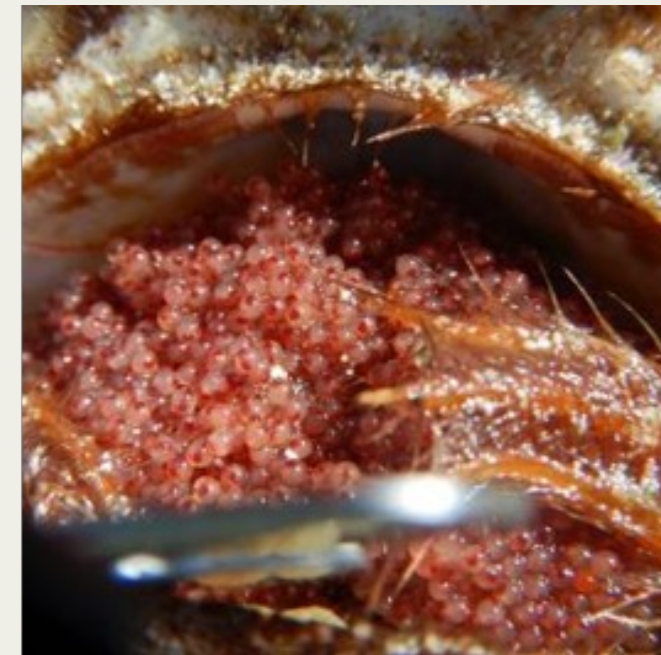
Day 26



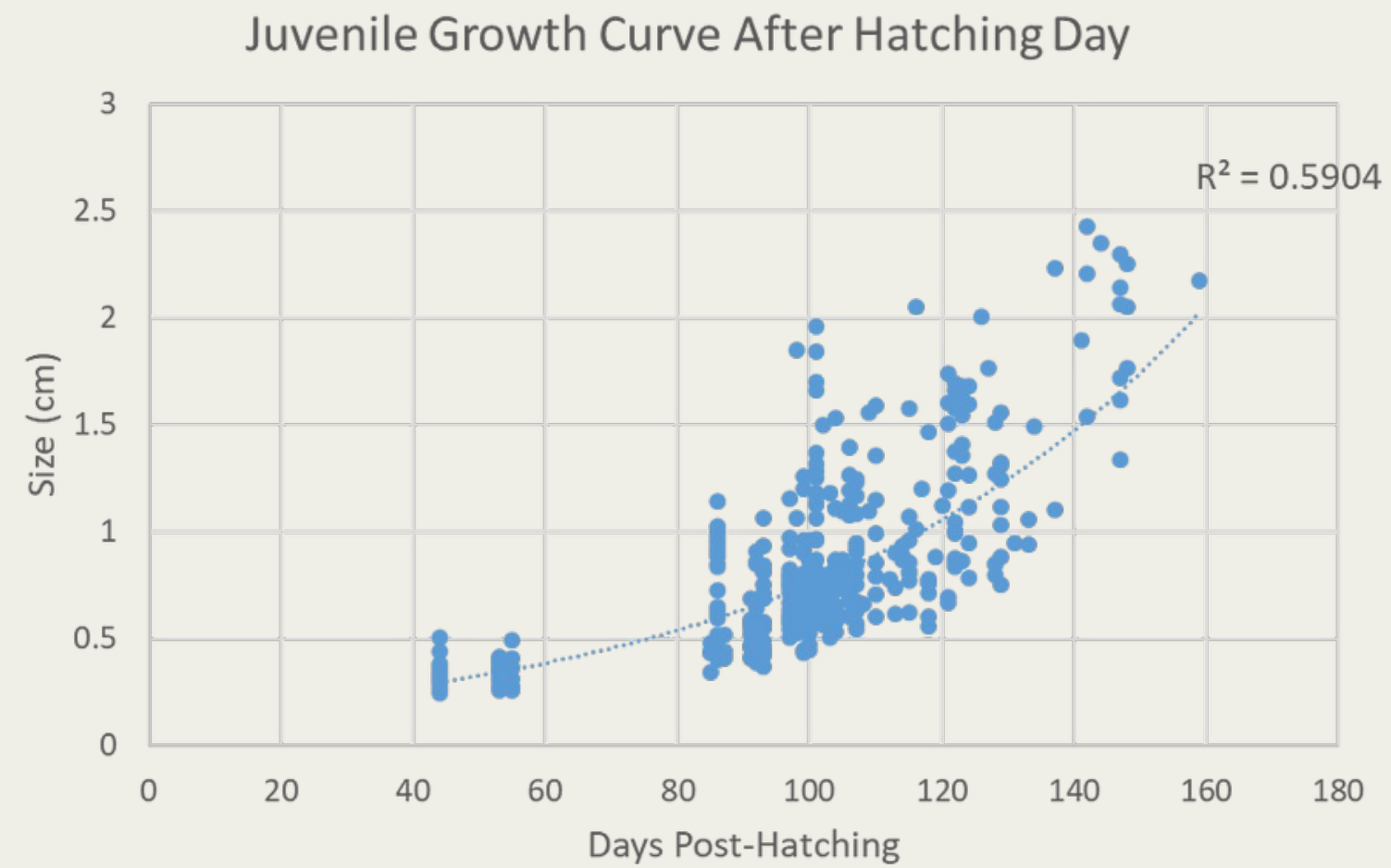
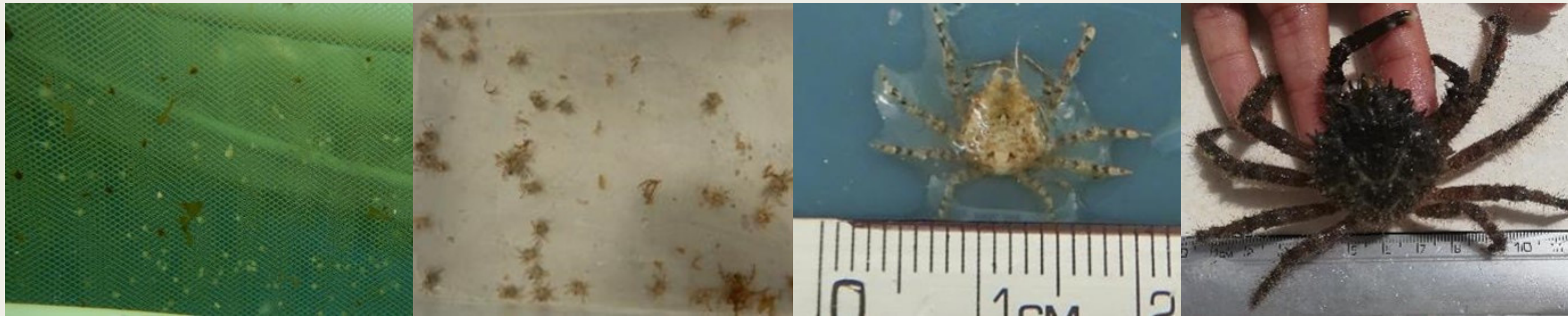
Day 28



Post hatching



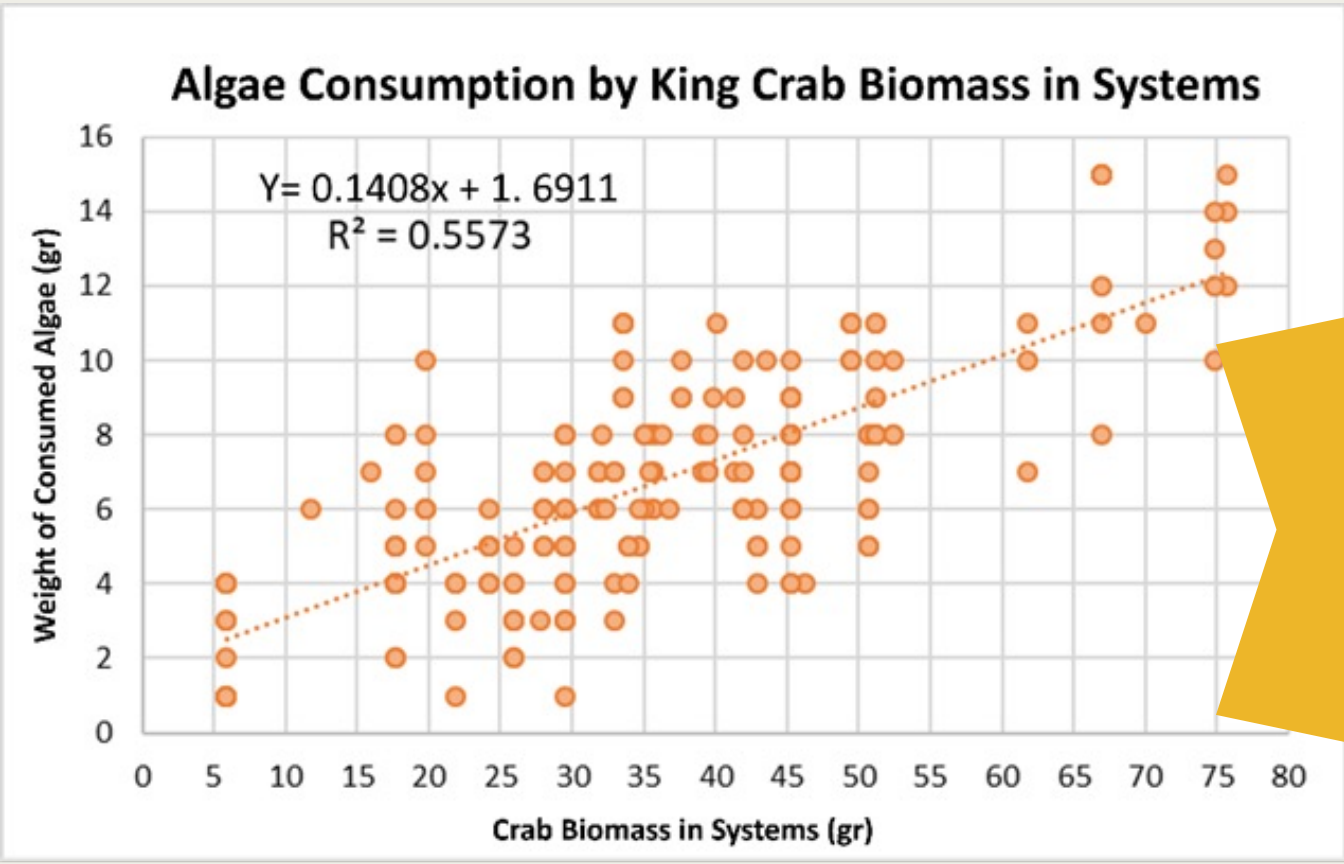
We have seen them grow



Watched them eat



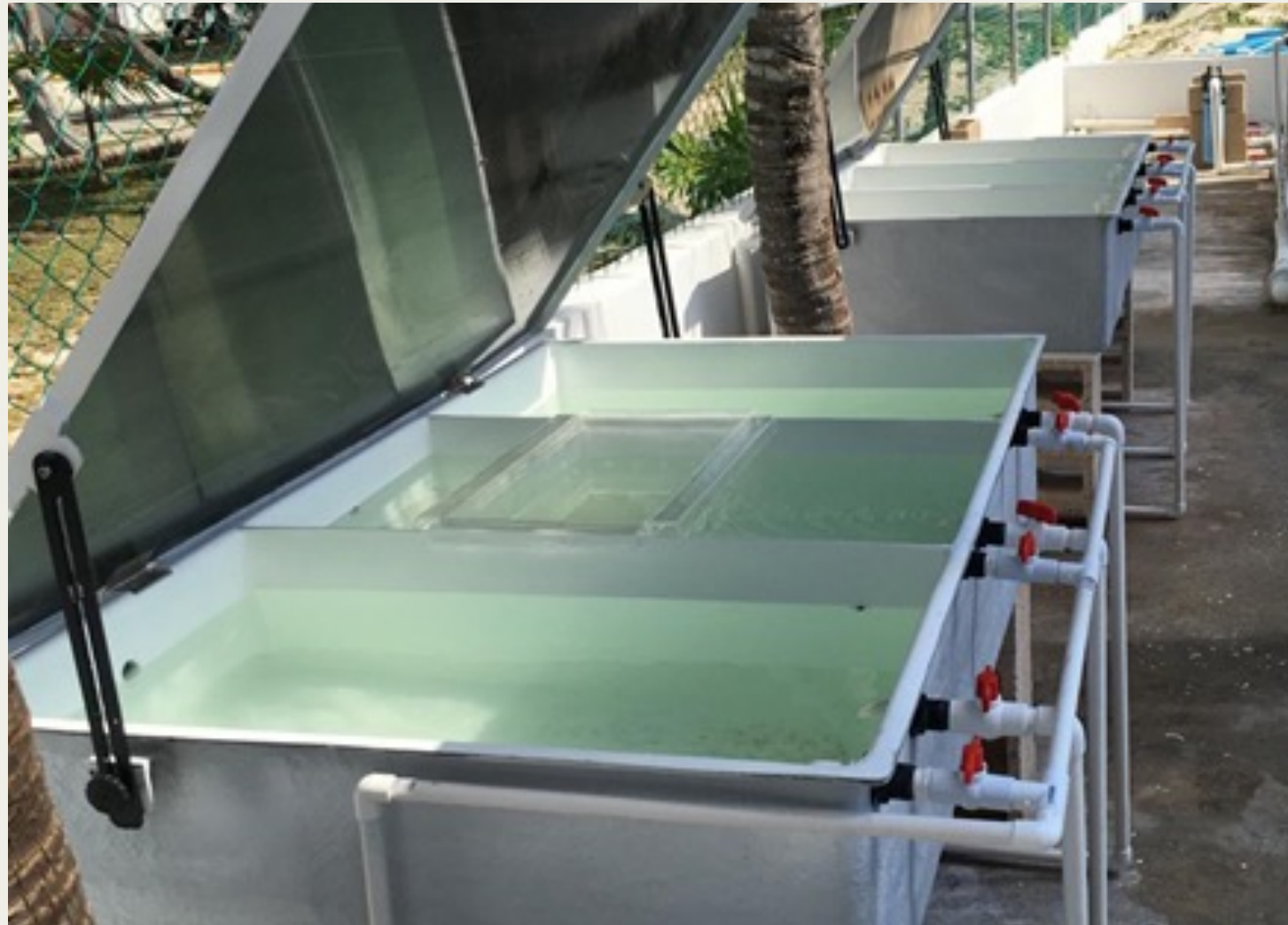
Sara Gutiérrez Plata



Eat ~20%
body
weight in
algae
per day!

Understanding their needs to

INNOVATE CULTURE TECHNIQUES



OUR ACHIEVEMENTS

CLOSED REPRODUCTIVE CYCLE



OUR ACHIEVEMENTS



Claudia Padilla

**CONSISTENT
PRODUCTION**

**175 CRABS
INTRODUCED
ON THE REEF**

**2 PILOTS IN
BELIZE AND
HONDURAS**

CALCULATED IMPACT ON THE REEF

28,395 Kg

Algae consumed



175 Crabs introduced



Difficulties and uncertainty



Phylanthropy dependent funding





GLOBAL FUND FOR
CORAL REEFS

<https://mar-invest.org/>

MAR+Invest

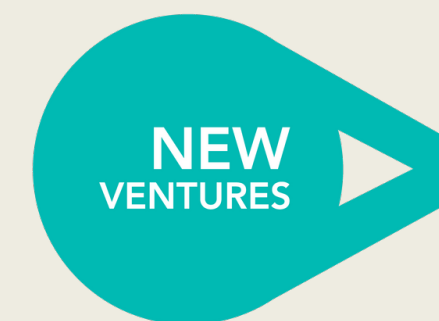
The MAR+Invest initiative is a blended finance mechanism that aims to invest in market solutions that contribute positively to the health and resilience of coral reefs and its reef-dependent communities in the countries of the Mesoamerican Reef.



FMCN

FONDO MEXICANO
PARA LA CONSERVACIÓN
DE LA NATURALEZA, A.C.

INSTITUCIÓN PRIVADA



Technical
Assistance



Sureste Sostenible

Build & Connect
program



Healthy Reefs
for healthy people

Impact Monitoring
and Evaluation



CAPITAL DE IMPULSO

Financing Solutions
Facility

Acceleration
Programme

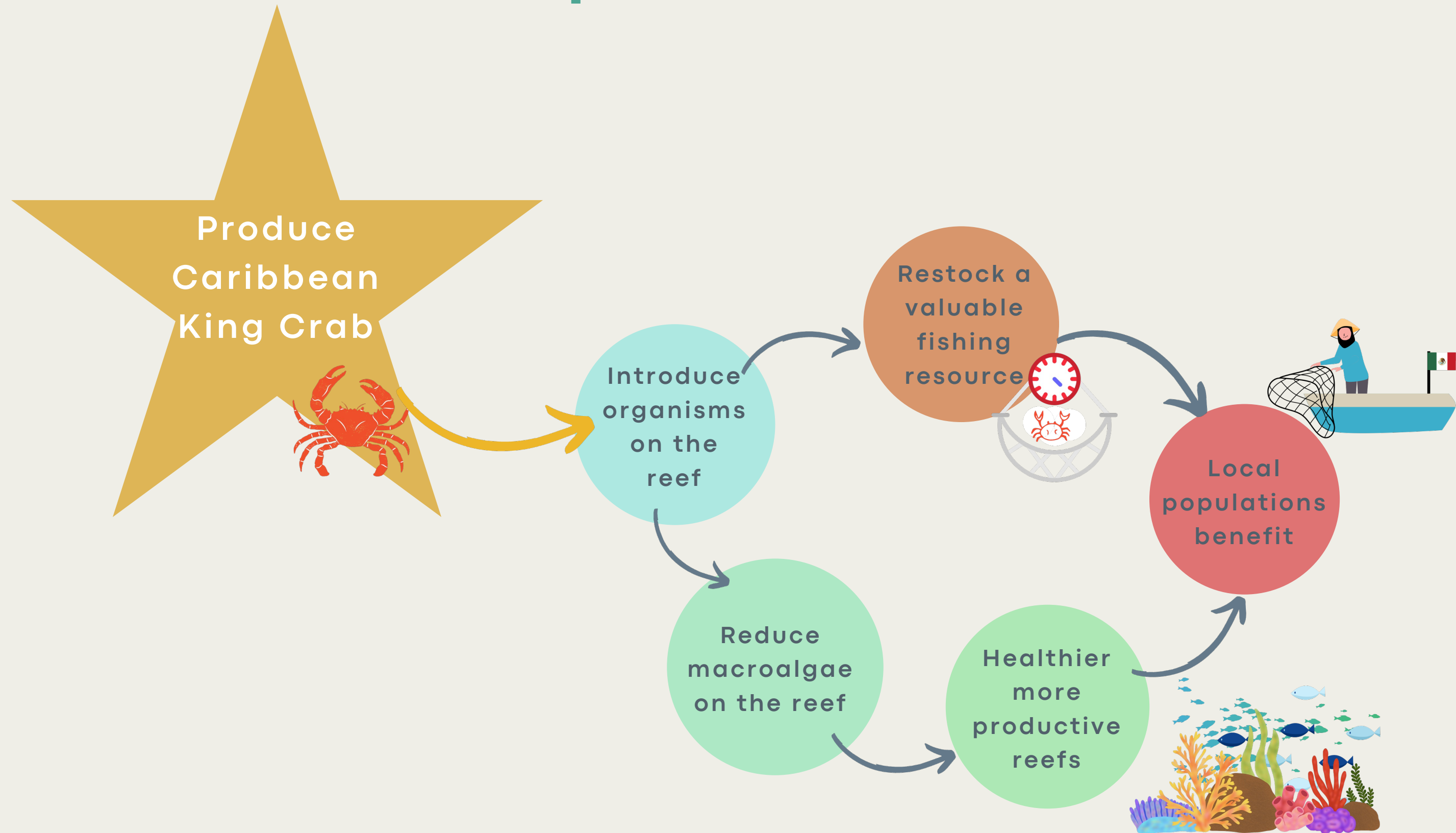


Sold for over
\$200 USD/Kg

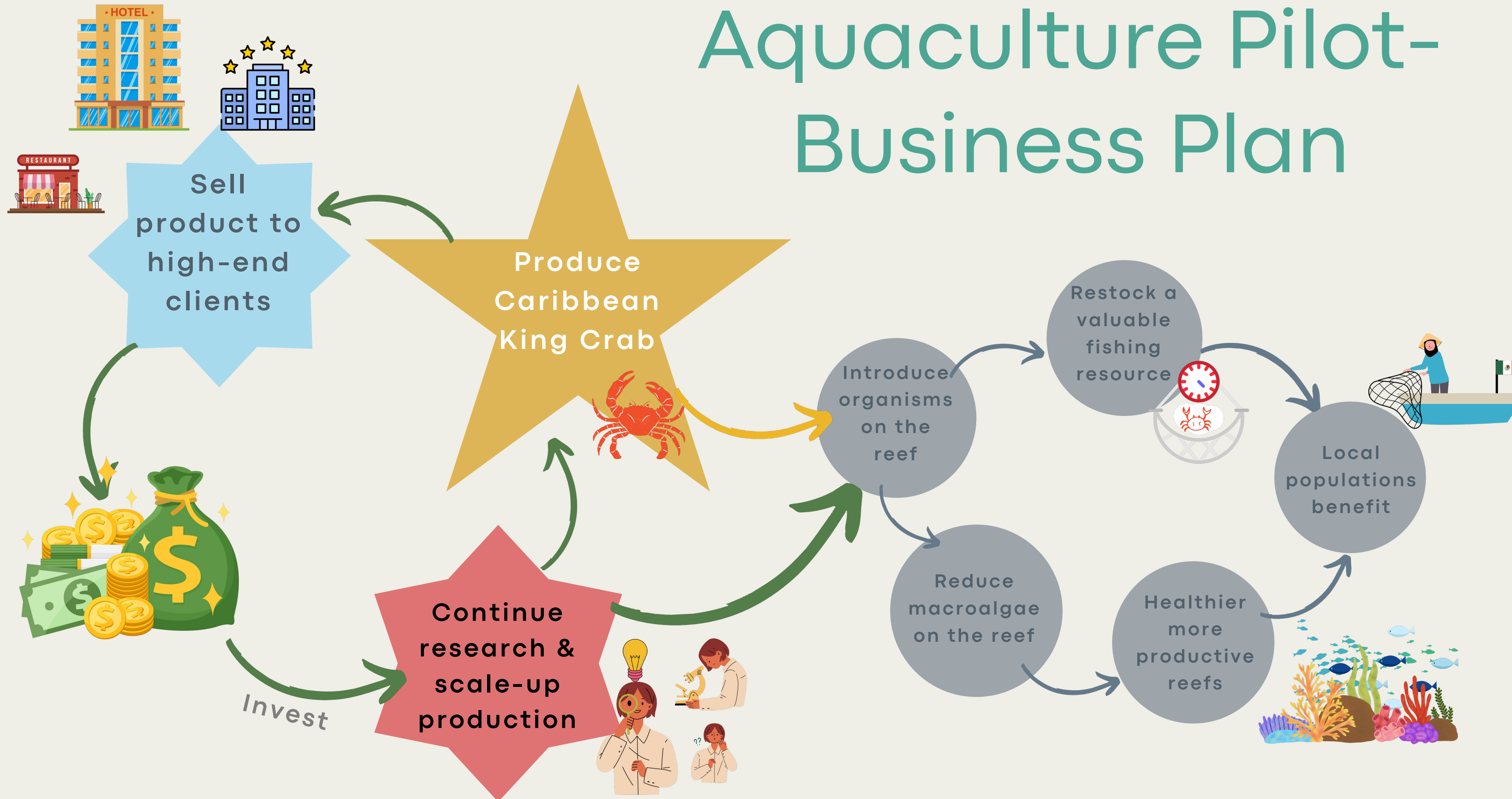
A DELICIOUS
SOLUTION



Aquaculture Pilot



Aquaculture Pilot-Business Plan



NEXT STEPS

Production



- Explore feeding alternatives
- Increase juvenile survival
- Continue Feed Conversion Rates and juvenile growth research

SCALE-UP PRODUCTION

Business



- Spin out into commercial enterprise
- Develop sales relationships
- Explore & develop business plan options

ESTABLISH FOR-PROFIT BRANCH

Will you try our
delicious solution?



And help us continue
saving the reef?

THANK YOU



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Smithsonian



GLOBAL FUND FOR
CORAL REEFS

MAR+Invest



gvi **Flotilla**
FOUNDATION

Lindblad
Expeditions

NATIONAL
GEOGRAPHIC



The
Summit
Foundation