When the nets leave the waters:

A community needs assessment for the lost fishing communities of Pacific coastal Guatemala – Balancing ocean and human health

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(a) How do marine ecosystems support human well-being?

(b) How do human communities support sustainable and productive marine ecosystems?

Three major initiatives:

(1) Social-ecological interactions related to integrated multi-trophic aquaculture (IMTA) in Indonesia.

(2) Social-ecological interactions related to small-scale oyster aquaculture in Guatemala.

(3) Development of the “well-being cube” approach to assessing national well-being related to marine systems.

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P^3 problem =

People causing **P**roblems that affect **P**eople's health and well-being.

"Communities-at-risk" marine resources focus.

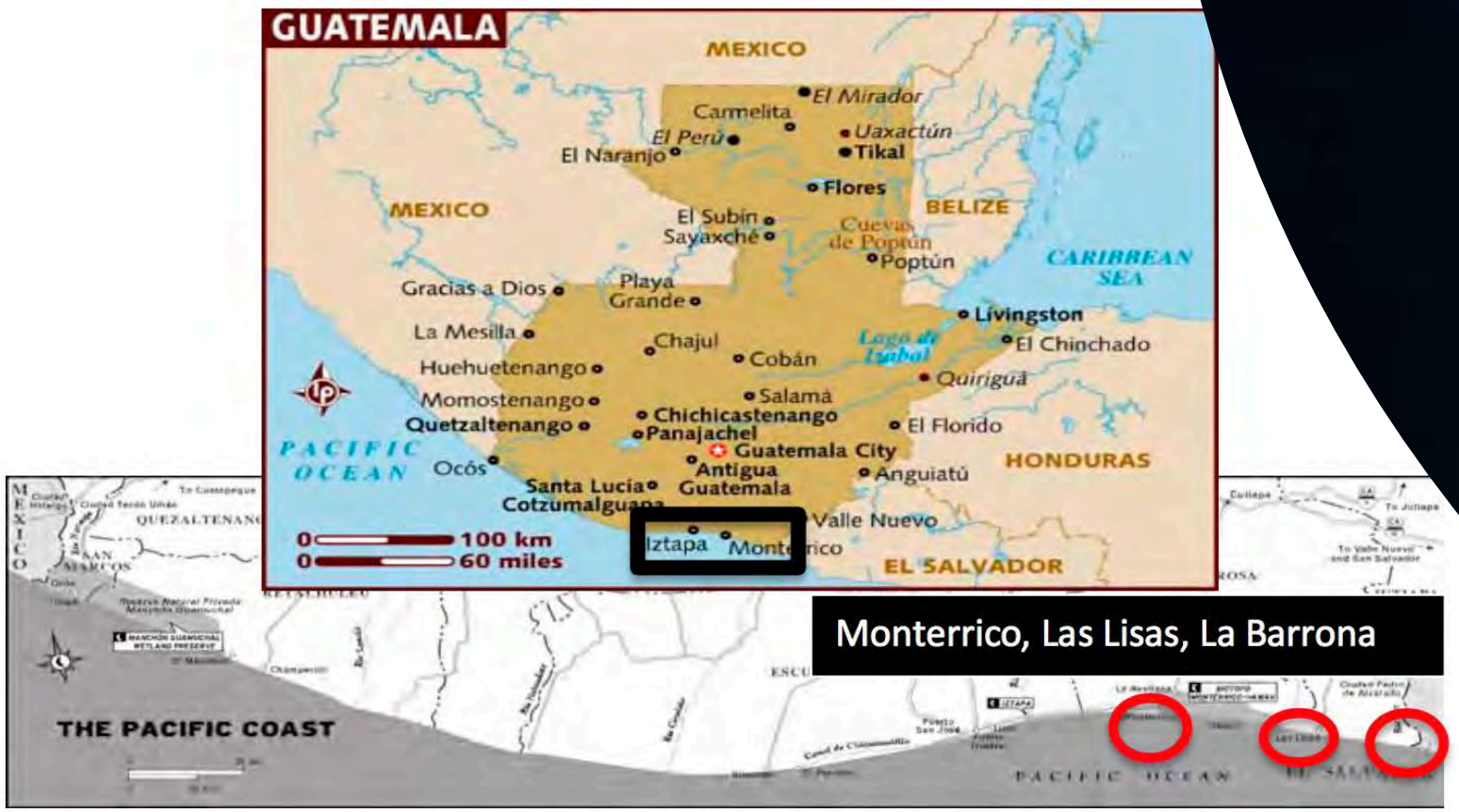
An anthropologist, toxicologist, marine scientist walk into a bar …

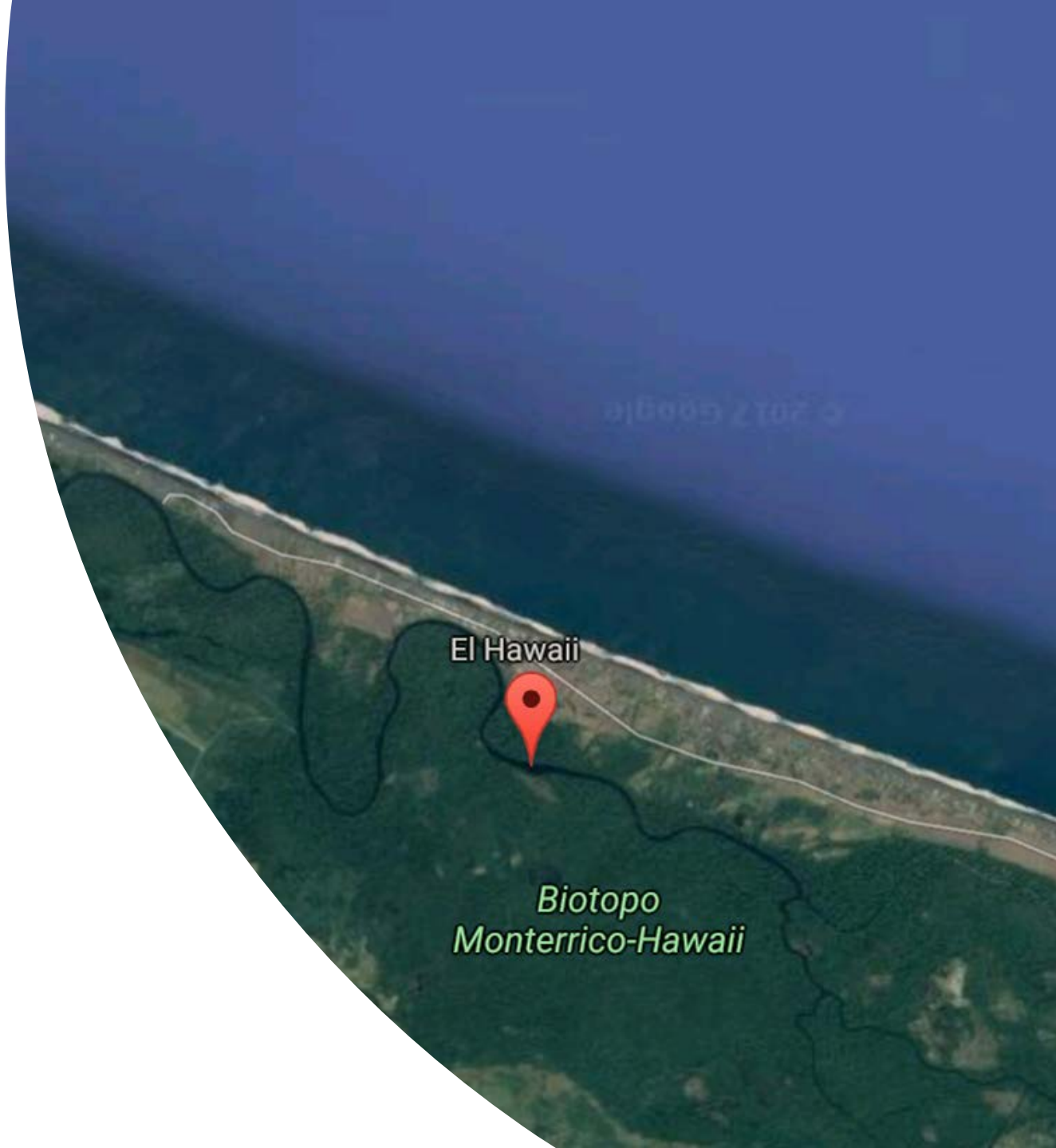
Marine ecosystem health and human well-being: A social-ecological systems approach

PARTICITARY COMMUNITY RESEARCH is an research inquiry that involves community and government collaboration with the science team to help understand our perception of the problem and their needs. The solutions are not done by the science team but performed by and for the community.

“BOTTOM UP vs. TOP DOWN”

Outline the Problem:




El Hawaii
Biotopo
Monterrico-Hawaii

P^3 problem = **P**eople causing **P**roblems that affect **P**eople's health and well-being.

What we knew
Guatemala Government had initiated a "Go and teach everybody" fisheries program.
Government opened up industrial fishing to include more protected zones and fish type (shrimps, Pacific seabobs, snappers, pompano dolphin fishes)
10,000 families, 7,900 fishers = Yield ~10 kg/person/year (family use + market + foreign sales)
"Last fisher on earth"

"Sensemaking Process : Community Needs Assessment"
• Qualitative evaluation of the 3P's (people, problem, people's health) • Questions that explore how people experience life • Avoid data and analytics – share ideas to a group decision

P^3 problem = **P**eople causing **P**roblems that affect **P**eople's health and well-being.

The steps (in general)		
Recognize the problem: Generally a wicked problem.		
Wicked problem		
• No obvious solution • No right o wrong answer (just better of worse) • Problems are not solved, situations are improved. • People that are trying to solve the problem, are the ones that created the problem		

P^3 problem = **P**eople causing **P**roblems that affect **P**eople's health and well-being.

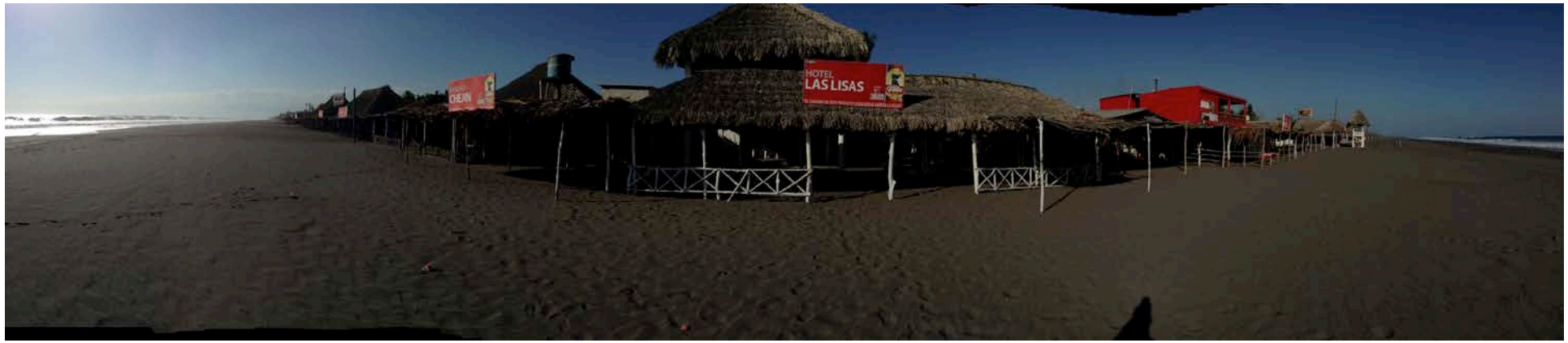
The steps (in general)
Recognize the problem: Generally a wicked problem.
Build a team to provide an exploratory assessment of the situation – The "listening crew"
Reconnect with the government and university liaisons for interpretation.
Community needs assessment
Return to present results and new community-driven or community-based alternatives

Las Lisas


Gallo
Rancho El Marino 2
SALON CENTRAL


Claro


MARISCOS
Y HIELO


HOTEL
LAS LISAS


LA MESA L
RINCON
Six Pack

P^3 problem = **P**eople causing **P**roblems that affect **P**eople's health and well-being.

"Sensemaking Process : Community Needs Assessment"		
Community meetings with fishers	Problem Probing community exercises	Example solution experience

What were the initial options from the community?
1. We can’t help them – no one has ever helped. You’ll just do your assessment and go home.
2. If you want to help, build us a long jetty so our boats can fish into the pelagic waters.
3. If you want to help buy us bigger boats and more nets/fishing gear.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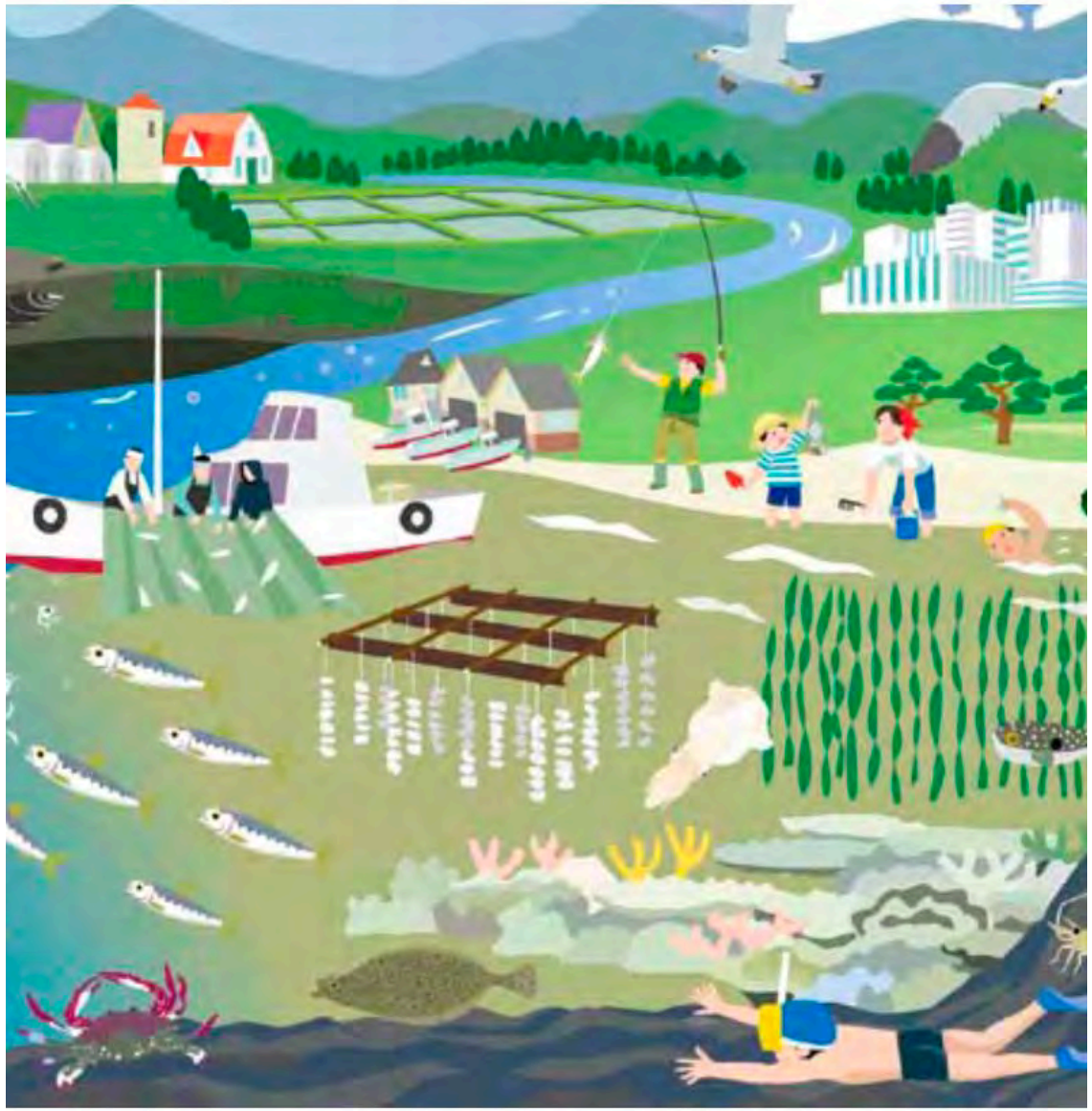
Julian Herndon
Charles Trick
Vera Trainer
Darling Hermosilla
Carolina Marroquin
Leonel Carrillo

P^3 problem = **P**eople causing **P**roblems that affect **P**eople's health and well-being.

"Sensemaking Process : Community Needs Assessment"		
Community meetings	Problem Probing community exercises	Example solution experience


RANCHO PALMERAS
Menú
• CALDO DE MARISCOS
• PESCADO FRITO
• CAMARONES AL GUSTO
• CEVICHES DE CAMARON
• CARNE ASADA CON PAPAS
• POLLO FRITO CON PAPAS
DESAYUNOS, ALMUERSOS
Y CENAS. AGUAS
BIEN FRIAS.
menú
CALDO DE MARISCOS
PESCADO FRITO
CAMARONES AL GUSTO
CEVICHES DE CAMARON
AGUAS BIEN FRIAS
Gallo
pepsi
Coca-Cola
PEPSI
Super Cola



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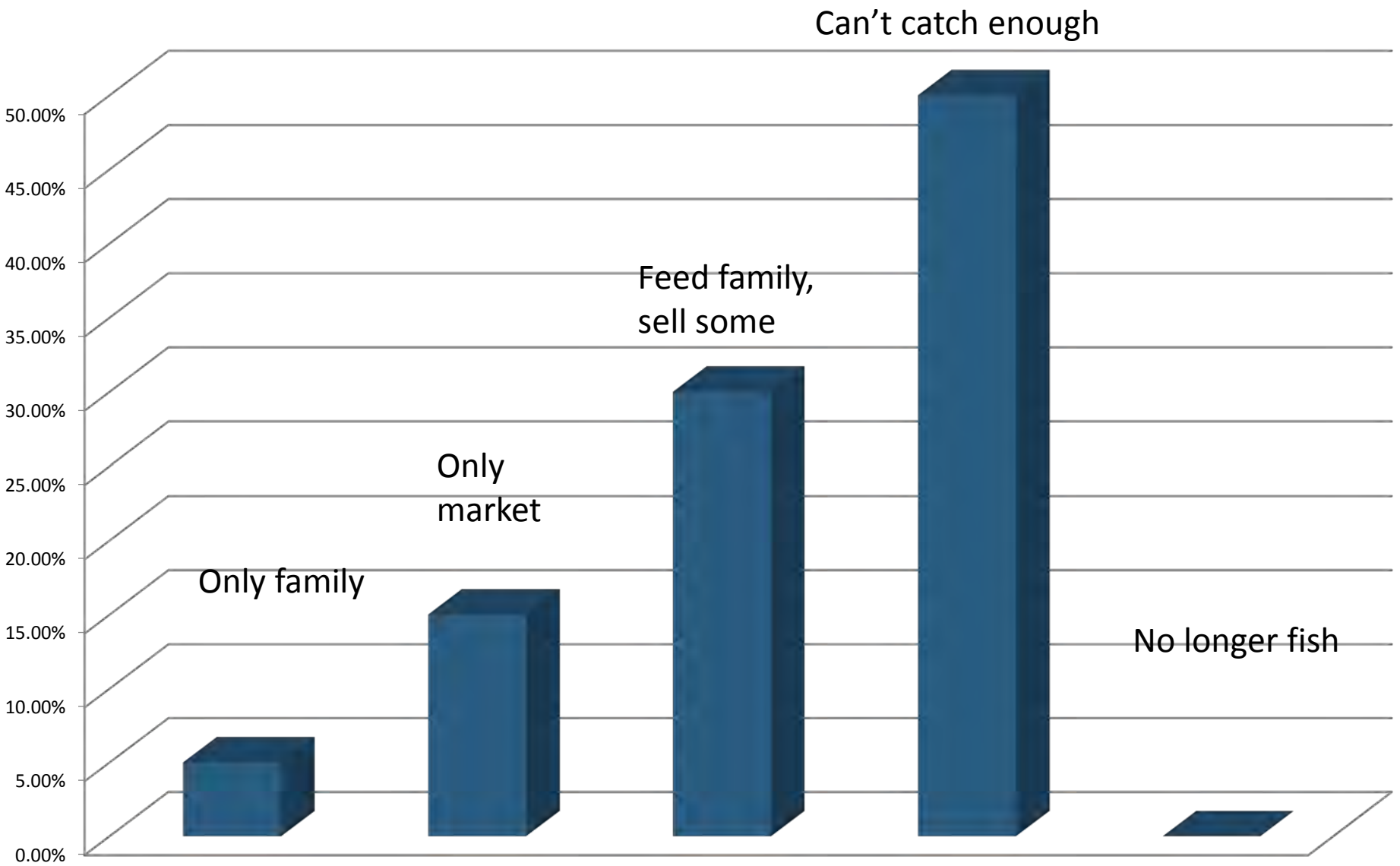
pepsi


pepsi
pepsi


Super
cola

Is there enough fish?



What did we learn in our community needs assessment?

1. Believe they are the “last fishers on Earth”
2. Each family has 6-8 children.
3. Average age of first pregnancy is 16.
4. All male children attend school until grade 3 and then fish/work.
5. It takes 3 fishers working each day to get enough fish for either family of market.

What are the options for this community?

1. Remove the pressure off the natural fish community.

2. Build-community-based economic and monitoring programs to replace fishing (alternate agendas):

A. Workshop with community members and universities on ecotourism (active but small footprint activities – kayaking, river runs, hiking up the volcano, organized bird watching, language school, etc.).

B. Workshop with: United Nations – Marine Protected Areas
DIPESCA (Fisheries & Aquaculture Agency)
National Forest Institute (INAB)
Ministry of Environment & Natural Resources (MARN)
Protected Areas National Council (CONAP),
Center for Conservation Studies (CECON)
Association for Rescue & Conservation of Wildlife (ARCAS).

What are the options for this community?

3. Fisheries alternatives:

A. Tourist-based fisheries. For example, the sailfish tourist fishery nets $6,000 per tourist per day. Whereas, as a single sailfish sells for only ~ $75 per fish . Working with Director of Regulations of Fisheries and Aquaculture, Ministry of Agriculture, Ranching, and Food (DIPESCA-MAGA).

B. Shrimp Culturing. Working with a local co-operative install shrimp ponds.

B. Oyster Culturing. Working with CEMA – the marine science and aquaculture facilities at the University of San Carlos.

Water quality team

- S ‰
- OD
- Nutrients
- Phytoplankton
- Coliform bacteria

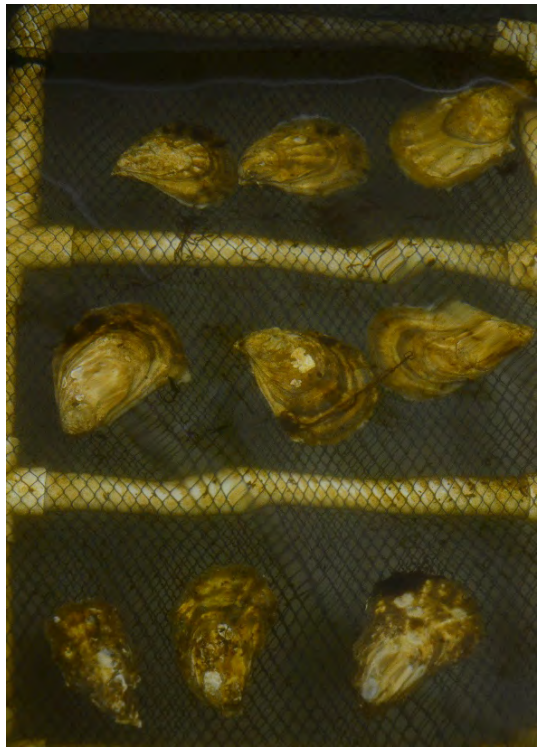
Alternate Idea #1.

Acuamaya

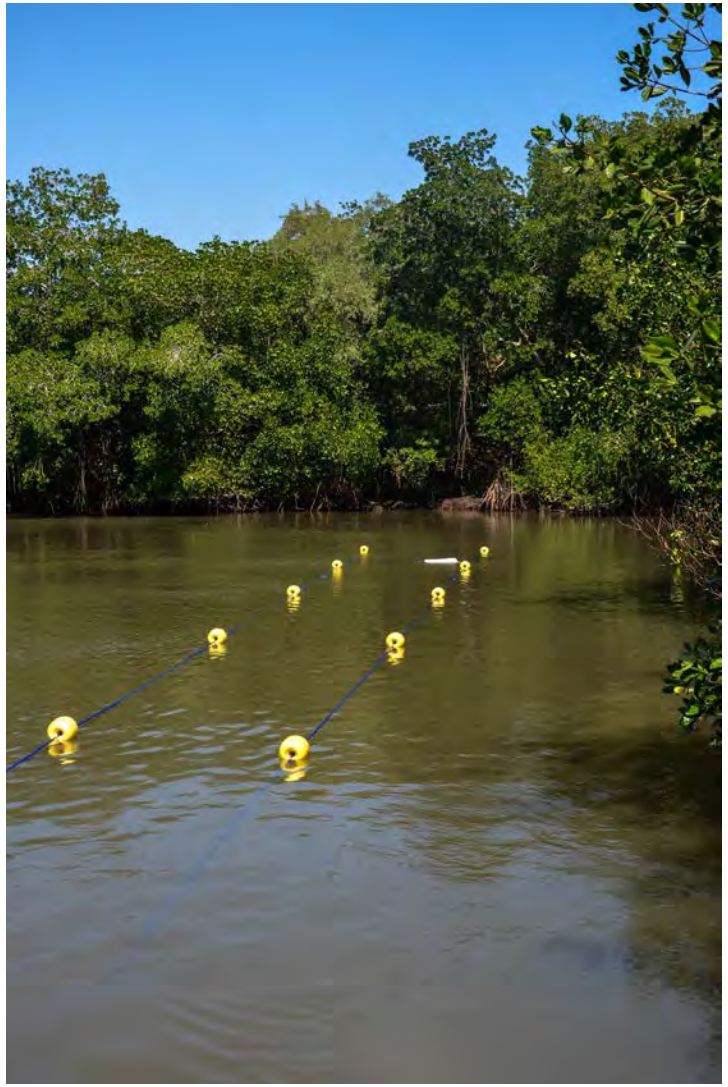
Producers of Tikal Brand Shrimp
The Jewel of Guatemala

Alternate Idea #1.

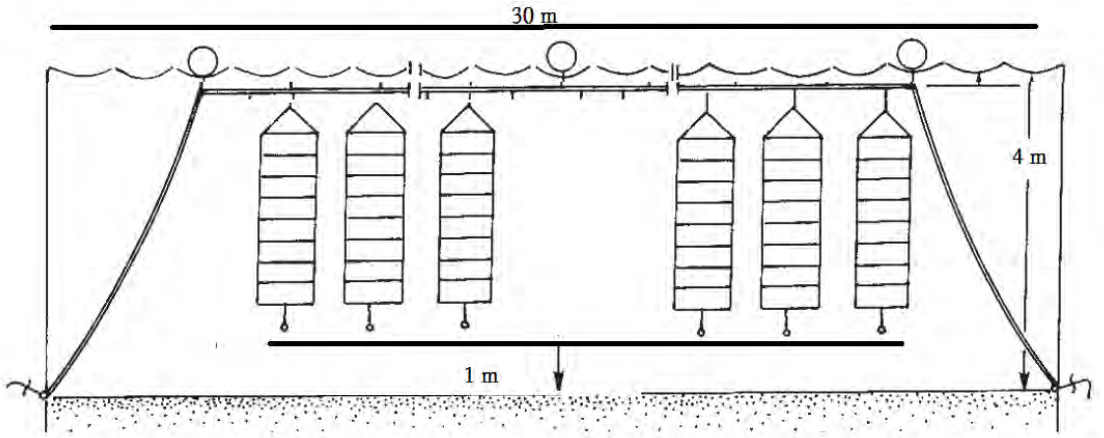
Alternate Idea #2.



Pacific oyster
(from El Salvador)



Long line system for oyster culture



Results?

Key lessons learned from the Guatemala case study:

Community relations must be clear and honest. Promises mean something.

Clicker surveys broke down barriers. Clickers allow anonymity, and help to overcome language and cultural barriers. It is very important to carefully develop the questions to be posed to the community

Collaboration is essential for decision making (not the “big daddy” approach); Bottom-up alternatives

Open-mindedness and listening are critical (“walk like an Anthropologist”). Creative thinking needed over initial plans.

An in-country **“point person”** is essential for consultations and to provide a “feedback loop” in regards to the activities and for interpreting the outcomes.

Guatemala– PICES HD was a success.

1. Established **legitimacy** with the community.

2. Working with the community we determined the **right problem**.

3. With the community we **reframed the problems** to find the best solutions.

4. We created support and action with "**boundary spanning**" organizations.

5. Established **sustainability** as the driver of decisions with regards to the fisheries of mangrove forest channels.

6. Worked with community on **problem solving** without us.


Hecho por
Marvin
Eduardo