

## ***Marine protected areas (MPAs) and food security*** ***Áreas marinas y la seguridad alimentaria***

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# MPAs and Food Security

## What do we know?

**Serge M. Garcia**  
Chair IUCN-CEM-FEG

FAO/IUCN-CEM-FEG symposium on MPAs and food security. 6/09/2017 IMPAC 4, Chile



# OUTLINE

1. BACKGROUND
2. RIGHT TO FOOD AND FOOD SECURITY
3. MPAs AND FOOD SECURITY
4. MPAs & SMALL-SCALE FISHERIES
5. CONCLUSIONS



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## 1. BACKGROUND

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# Premises

- Marine fisheries provide 60 million t/y of wild seafood + 20 million t. of feeds
- Over 8.2 kg/capita/year in 2014
- 10-14 million jobs (full-time equivalent) in fishing, mainly in highly dependent communities; 40-58 million jobs altogether; 160-230 million fisheries-dependent people.
- 10 billion humans by 2050 of which > 6-7 billion in coastal areas will require **75 million tonnes more of fish.**
- The marine food security challenge is increased by Climate Change to compensate the predicted decrease in terrestrial food production.
- **Shifting 20%** of the world's 2010 calorie consumption from meat to fish would save about **60 to 80 million ha** of terrestrial cropland.
- Conversely, **replacing marine food sources with terrestrial ones** would produce an environmental disaster on land (ecosystem conversion to agriculture) of global dimensions.

The future of food security is challenging.

# A cliché of the controversy

- On the one hand, MPAs intend primarily to **protect biodiversity** and its essential **ecosystem services**, potentially increasing the future well-being and economic opportunities of the local populations, including presumably their food security (1)
- On the other hand, MPAs **restrict or prohibit access** to natural resources, particularly in the case of **no-take areas**, threatening the livelihood and food security of vulnerable and dependent communities (1).



Source: Photo courtesy of Merlijn van Weerd.



Source: Photo courtesy of Jan van der Hoog.

This creates tensions about costs and benefits of MPAs for food security, and their distribution across time, space, and among stakeholders



IUCN  
WORLD PARKS  
CONGRESS  
SYDNEY 2014

# A strategy of innovative approaches and recommendations to enhance implementation of **marine conservation** in the next decade

November 25, 2014 – FINAL SUBMITTED TO IUCN

## A promising future

- **Rec. 1:** Increase **MPAs coverage** including 30% NTZs in all habitats
- **Rec. 7:** Design and manage MPAs **for human as well as ecological benefits**, through committed **partnerships** and engagement with indigenous and local **coastal communities**, resource users and other stakeholders, as well as new partnerships with humanitarian, development and **human rights** organizations
- **Rec. 8:** Scale up the many effective, **inspiring solutions** undertaken by coastal communities and resource user groups around the world

The recommendations do not refer explicitly to food security except as a necessary component of the SDG 14 (Recommendation 3) but recognize the need to generate **human and ecological benefits** and to respect human rights

The subsequent IUCN Call for Action on SDG 14 presented at the UNGA in June 2017 did not specifically refer to food security.

# Food security as a watermark?

**Food security** appears in many policy documents, more often as a watermark that may be seen when carefully looking for it, than as a core goal with performance measures, etc.

As a consequence, despite universal agreement on its importance, Food Security may not emerge without conscious efforts to coordinate assessments, policies and action.





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1. BACKGROUND

**2. RIGHT TO FOOD AND FOOD SECURITY**

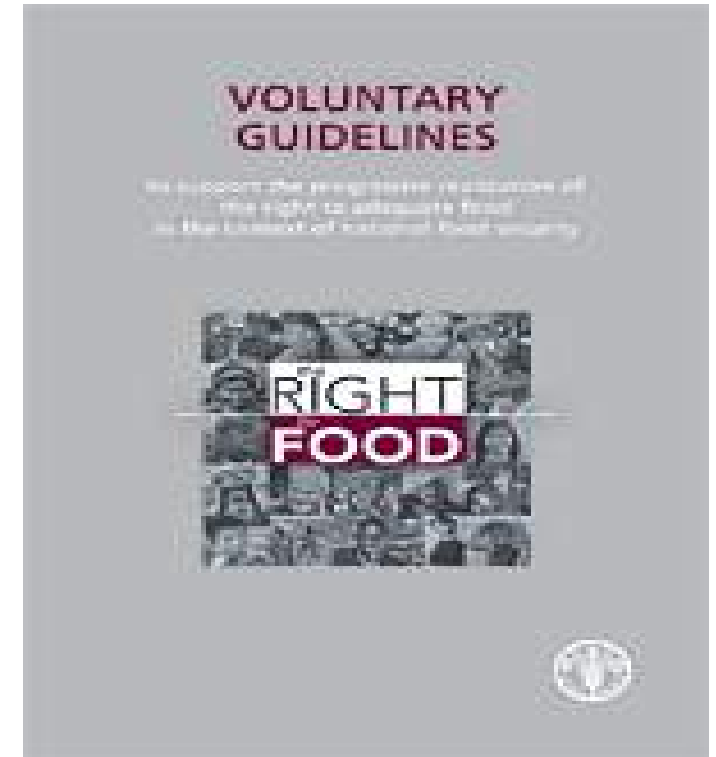
3. MPAs AND FOOD SECURITY

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# Right to Food

- The **Right to Food (RTF)** is enshrined in the **Universal Declaration of Human Rights**
- *It is the right to have regular, permanent and unrestricted access, ... to ... adequate and sufficient food ... and dignified life, free of fear\**



The Right to Food is in fact also a broad right to the basic entitlements for a decent life.

# The concept of Food Security

- Food security exists when all people, at all times, have physical and economic **access** to **sufficient, safe** and **nutritious** food that meets their dietary needs and food **preferences** for an **active and healthy life**. (FAO WFS, 1996)
- Successive definitions had considered the lack of food security as resulting from:
  - **A natural accident:** a deficit in food supply (WFS,1974):
  - **A distributional issue:** an inadequate access to food supply (FAO, 1983):
  - **A wicked problem:** resulting from the dynamics of food production (WB, 1986):
  - **A failure of governance** to achieve stability in the availability, access to, and utilization of food supplies (WFS, 1996):

A shift from an expectable natural outcome to an unacceptable social and political construct.

# The Food Security Equation

Political stability & support  
Governance

Environmental degradation Demography  
Global Economy

Sustainable resources  
Organized sector/value chain  
Efficient markets  
Affordable prices  
Products: types and quality

**Food & Income**

Employment /wages  
Assets  
Access to credit  
Access to resources  
Access to technology  
Access to market  
Enabling legislation

**STABILITY**

Fisheries and MPAs are contributors to the complex Food Security equation and must be factored in national poverty reduction and food security policies

Their impact on food security depends on their impact on the different parameters of the equation



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# What is the MPAs claim?

## MPAs increase food security by<sup>(1)</sup>:

- Inside the NTZ : Recovering resources integrity, improving their stability and resilience
- On surrounding fishing grounds: improving abundance through spillover of biomass and larvae

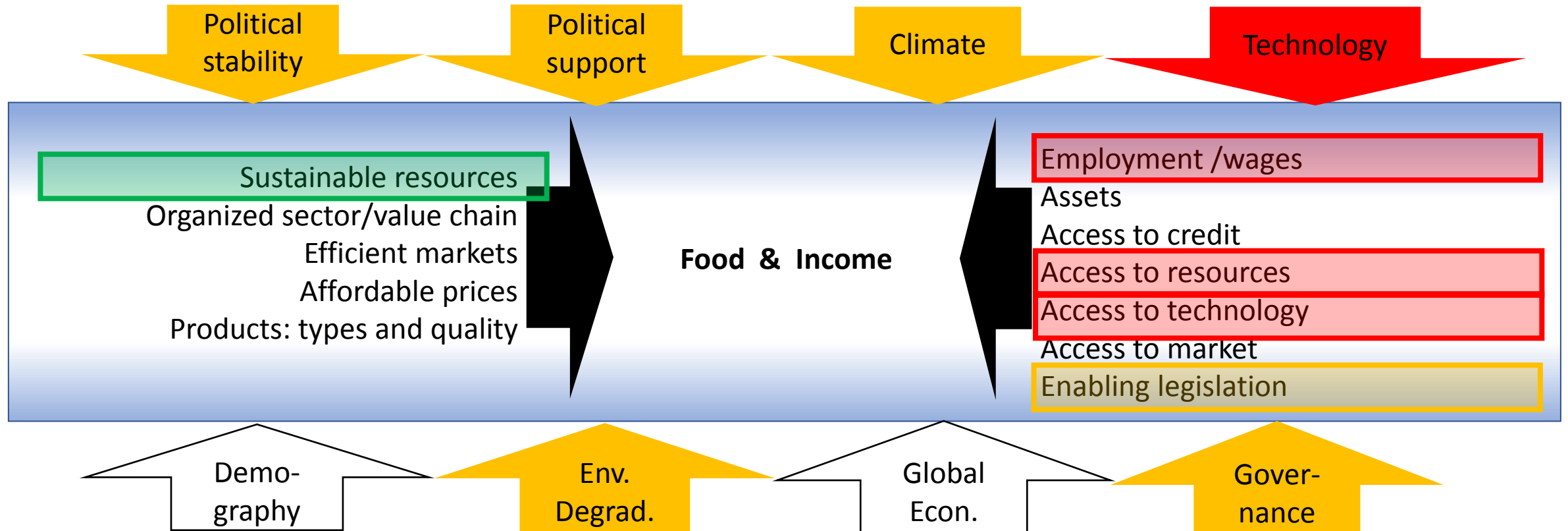
## Caveats:

- **Transition costs** <sup>(2)</sup>: The rebuilding process takes time and generates significant transaction costs to dependent communities, requiring mitigation;
- **Scientific analyses** of MPAs impact on **food security** are extremely limited

(1) The 10X20 initiative on MPAs. Scientists's consensus statement on MPAs. Rome, Italy, 9 March 2016.

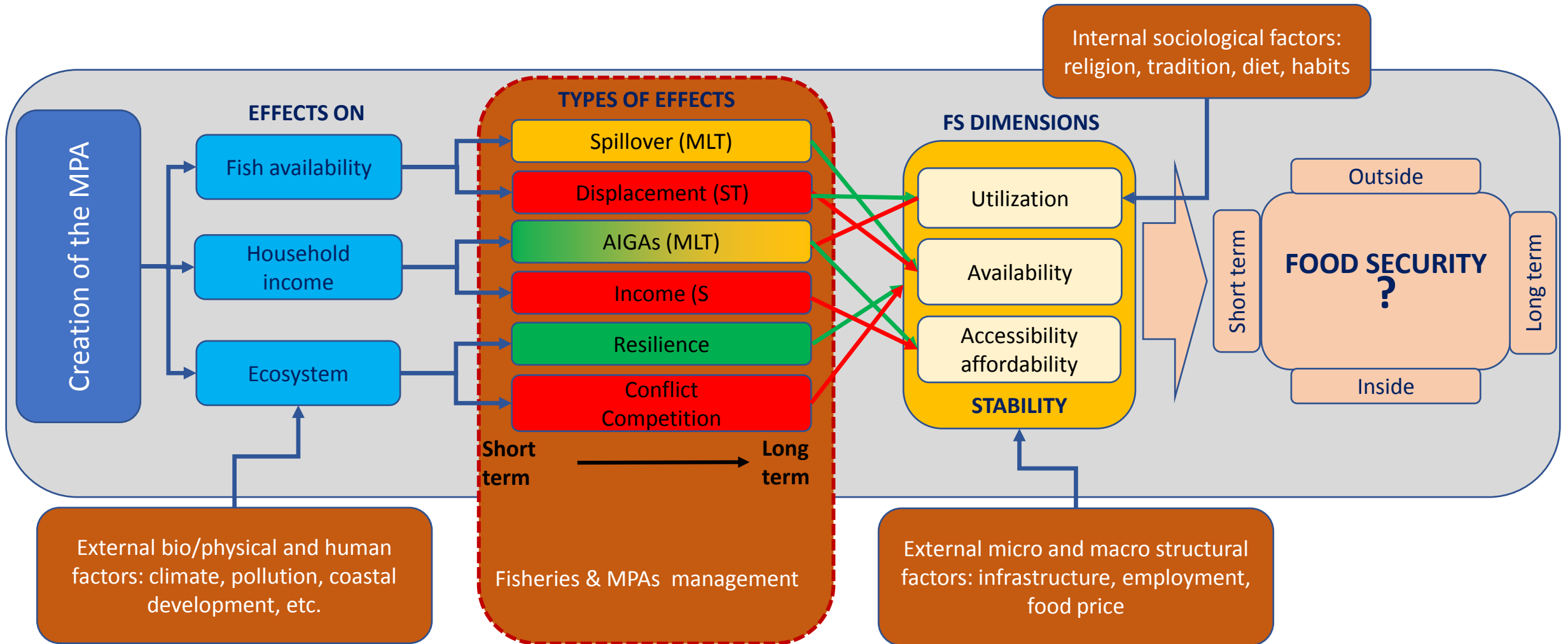
(2) <https://www.oceansanctuaryalliance.org/plan-of-action/>

# MPAs contribution to FS



The contribution might differ in the short and long term

# MPAs impact chain



In this multiple pathway system, referring to one causal relation only does not make much sense.



# MPAs “tolerance” for fisheries

Fishing activities	IUCN types of MPAs						
	Ia	Ib	II	III	IV	V	VI
Commercial fishing	Negative	Negative	Negative	Negative	Negative	Conditional	Positive
Recreational fishing	Negative	No Fishing			Negative	Conditional	Positive
Aquaculture	Negative	Negative	Negative	Negative	Negative	Conditional	Positive
Traditional (subsistence) fishing	Negative	Subsistence		Positive	Negative	Conditional	Positive

	Negative		Conditional		Positive
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**In the short-term**, an NTZ may reduce FS in proportion to: (1) its relative size and (2) the communities’ dependency on the area. **In the long term** it may contribute to FS in proportion to its spillover in relation to surrounding productivity and depending on fisheries management.

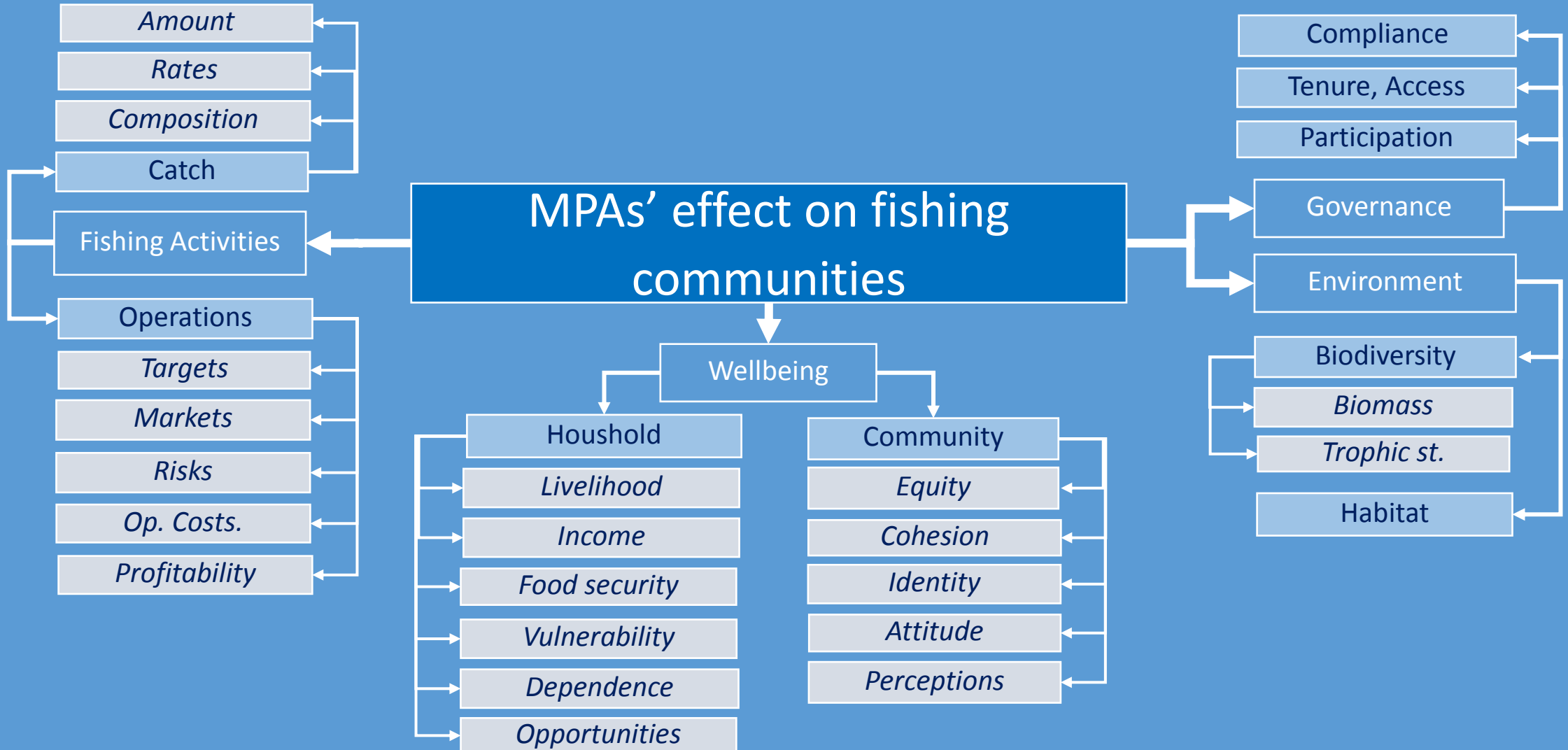
**At ecosystem level**, the overall effect depends on the interaction between **the whole set of MPAs** and of **food production areas** and will be different in coastal areas and the high seas



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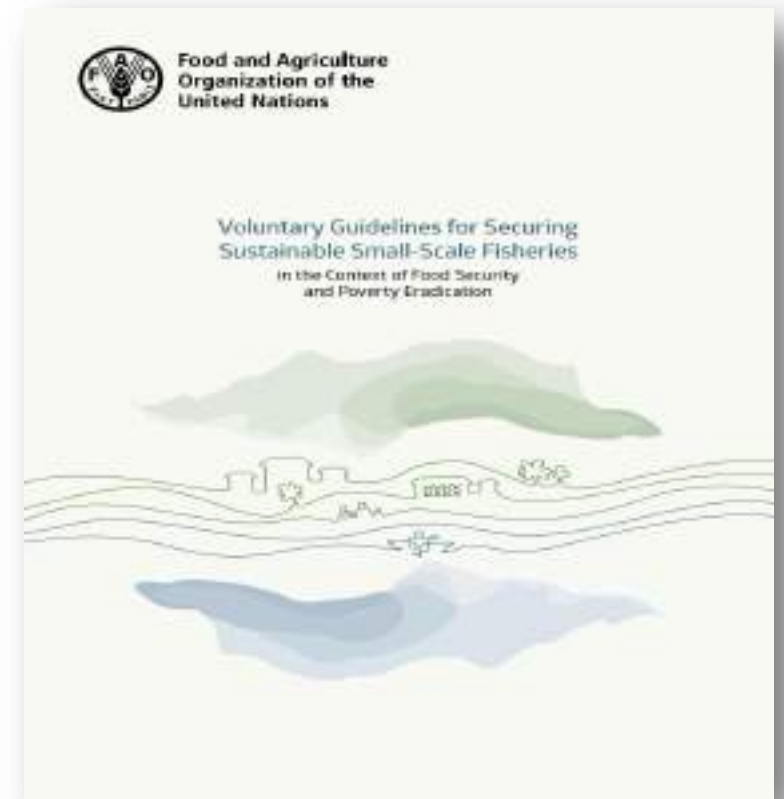
# MPAs effects on SSFs



Effects depend on MPA type, local ecology, fishery characteristics and context

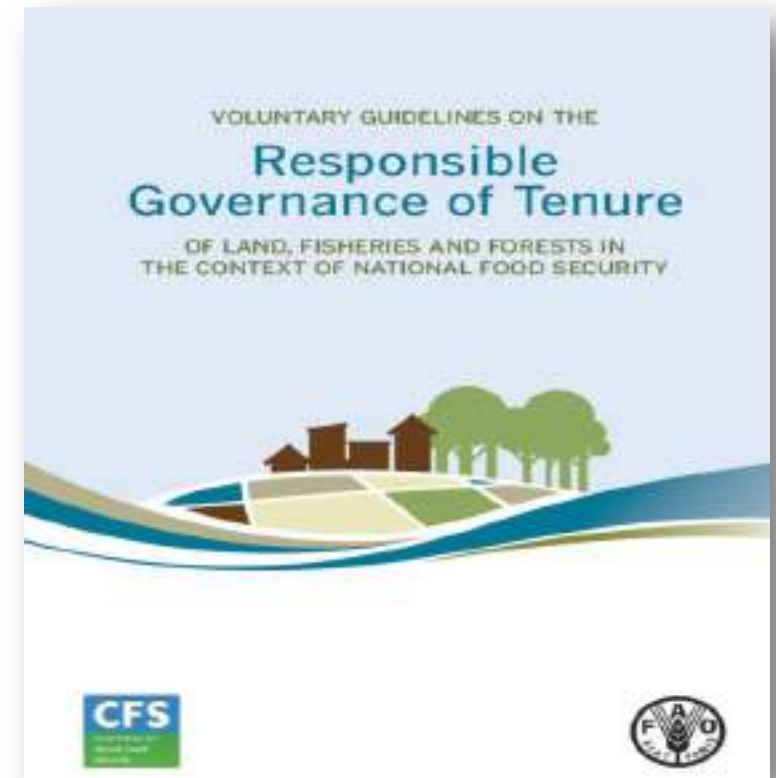
# Voluntary Guidelines for Securing SSFs in the Context of Food Security and Poverty Eradication (the SSF Guidelines)

- A global consensus on principles and guidance for small-scale fisheries governance and development
- Brings together social development and responsible fisheries
- Beyond fisheries, addresses sustainable livelihoods, social stability, and food security, grounded in **Human Rights principles**



# Voluntary Guidelines on Responsible Governance of Land, Fisheries and Forests in the Context of National Food Security (VGGT)

- Provide guidance on improving tenure governance to reduce poverty and hunger.
- Secure some of the most basic human rights.
- Contribute to achieving sustainable livelihoods, social stability, rural development and sustainable social and economic development.
- Intend to improve delivery of tenure-related services by raising awareness.
- Highlight the rights of women, indigenous people and other vulnerable groups.





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# Conclusions from the TP

- **Food security depends on sustainable livelihoods** with stable entitlements for enough and continuous access to food
- **Food security of fishing households and of the broader community are interconnected and interdependent.** The link grows with the relative size of the fishers' component
- On the one hand, **the positive effects of some MPAs** on some dimensions of Food Security have supported their advocacy and adoption
- On the other hand, **their feared, or real negative effects** on livelihoods, incomes, entitlements, food security and human rights have generated a resistance to their top-down introduction
- **The HLPE on FS** concluded that MPAs' effects depended on their geography, ecology, socio-economic context, initial conditions, internal dynamics and external drivers.



Source: Photo courtesy of PRETOMA-ARCAE.

# Some conclusions from the TP - 2

- **Measuring PA's performance** on the well-being of their neighboring vulnerable populations, is a controversial issue.
- **Rigorous and robust evidence is still lacking** on the exact nature of the relation between conservation and development, MPAs and Food security
- **In the short term**, vulnerable or marginalized human populations dependent on aquatic resources for food and income are adversely impacted by MPAs
- **In the long/term**, properly designed and implemented MPAs may foster their livelihood and food security.
- **MPAs may aggravate or mitigate the impacts** of the conventional laissez-faire policies on SSFs.



Source: Photo courtesy of Merlijn van Weerd.



Source: Photos courtesy of Julian Clifton.





# Some conclusions from the TP - 3

- MPAs in **densely populated and poor areas** are resisted and likely to fail if they do not also clearly provide food security and livelihoods.
- **Top-down imposition and implementation** is likely to fail and call for violence.
- The ongoing evolution towards **participatory EAF** could lead to more systematic and objective assessment of both fisheries management measures and MPAs.



Source: Photo courtesy of Jan van der Ploeg.

## FOUR KEYS

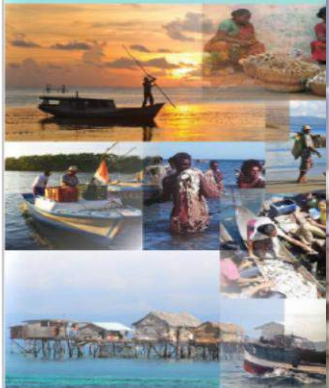
- **Explicit & balanced goals, incl. food security**
- **A reliable community-based tenure system**
- **Participative governance**
- **Systemic vision of the MPAs-FS relation**



Source: Photo courtesy of Laely Nurhidayah.



## Marine protected areas: Interactions with fishery livelihoods and food security



Sous la direction de  
S. M. GARCIA, J. BONCOEUR ET D. GASCIEL



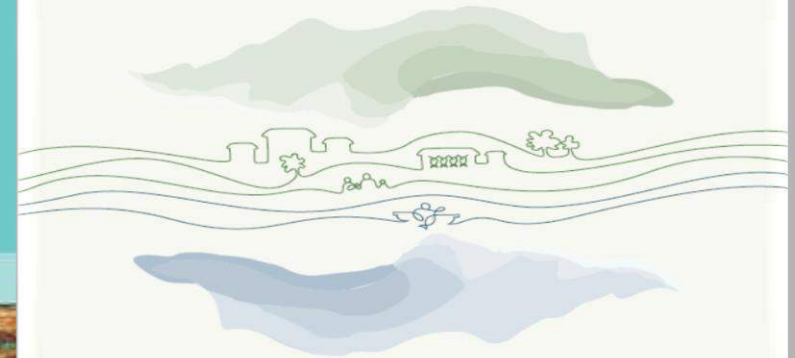
### LES AIRES MARINES PROTÉGÉES ET LA PÊCHE : Bioécologie, socioéconomie et gouvernance

Presses Universitaires de Montpellier

## Human dimensions of the ecosystem approach to fisheries: an overview of context, concepts, tools and methods



## Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries In the Context of Food Security and Poverty Eradication



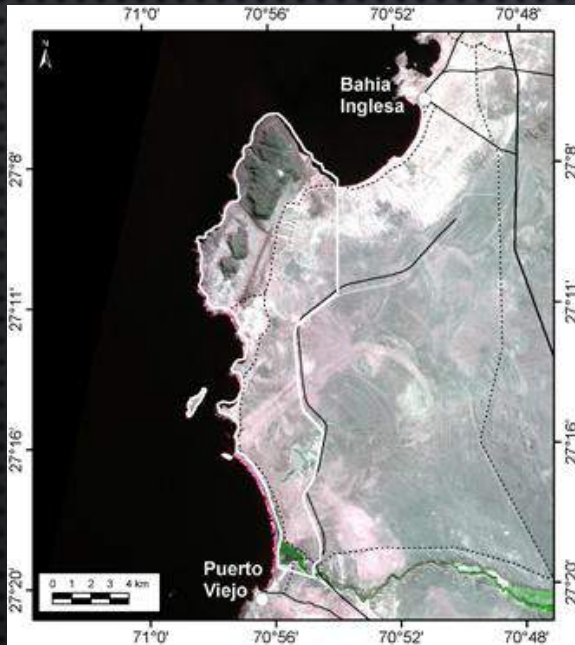
# Thank you for your attention



Miguel Avalos  
CONAPACH

## LA SEGURIDAD ALIMENTARIA EN EL CONTEXTO DE LA AMCP

- 1-. Co-manejo Pesquero (código pesca responsable + Directrices voluntarias FAO).
- 2-. Administración efectiva por parte de la Comunidad.
- 3-. Certificación Origen (sello).



# COMUNIDAD EDUCATIVA Y AMCP

## “PROCESO DE SIEMBRA PARA UNA GOBERNANZA EFECTIVA”







Angélica Mendéz

Red de Pescadores del Atlántico, Guatemala

# RESEÑA HISTORICA





# Propuesta de áreas de co-manejos pesquero en la Bahía la Graciosa y Laguna Santa Isabel

- **COMO SE TRABAJO**

Se realizaron 10 talleres de consulta participativa con las comunidades de Graciosa, Punta Gruesa, Laguna Santa Isabel, Trasmalleros y Manjuveros de Puerto Barrios, Red de Pescadores y las autoridades (CONAP, DIPESCA y MARN)



# PRESENTACION DE LA PROPUESTA DE CONVENIO

- Asesoría legal ( ADA2, CONAP, DIPESCA)
- Socialización de la Propuesta
- Entrega de la propuesta de convenio al CONAP
- Sensibilización y consenso de las Comunidades



# Firma de Convenio de Cooperación para la protección y Aprovechamiento de los Recursos Hidrobiológicos de la Bahía la Graciosa y Laguna Santa Isabel del Refugio de Vida Silvestre Punta de Manabique RVSPM



# LOGROS ALCANZADOS

- Promover el calendario de Vedas.
- Socializar el calendario de vedas
- Elaboración y entrega a DIPESCA de propuesta de enmiendas al reglamento de pesca.
- Participar en la mesa de pesca en el Congreso de Republica.
- Ejecución y presentación de nuevos Proyectos

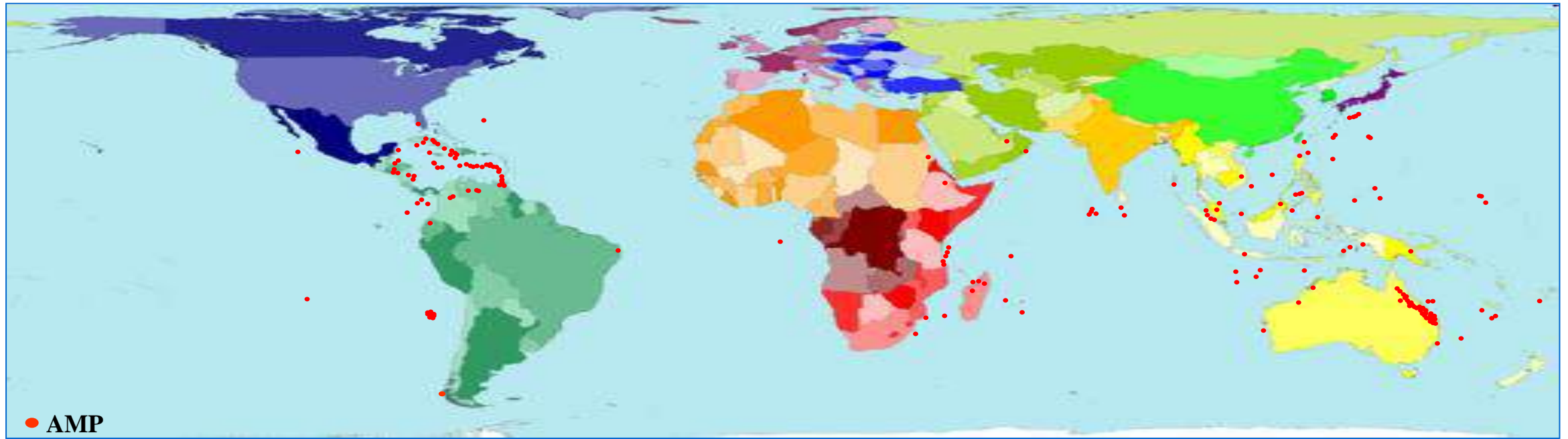




Stefan Gelcich

Center for Marine Conservation, Pontificia  
Universidad Católica de Chile

## Traditional view: Conserve Biodiversity with Marine protected areas

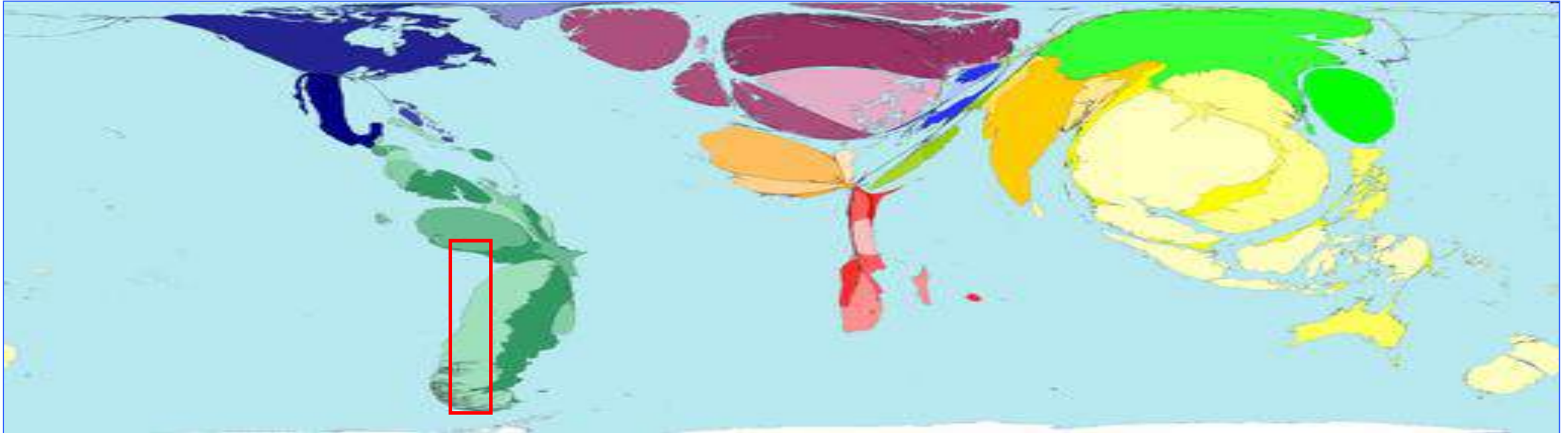


### **Problems with the traditional view:**

- Only 5-10% enforcement and monitoring.
- Chile: Lack of enforcement (1/22); funding deficit of 85%.
- Conflict with productive sectors
- Risk of a network of **Paper Parks**

¿Innovate on approaches to do conservation ?

# Understand the world in which we have to do marine conservation



The size of the territory shows the proportion of marine resources exports which come from that country.

**Innovate and in ways to approach biodiversity conservation:**

- Conservation in productive systems;
- Allow to include new allies in Conservation

**Beyond participation and towards benefit sharing**

# New Allies: Artisanal fishers in coastal zones

## Law...

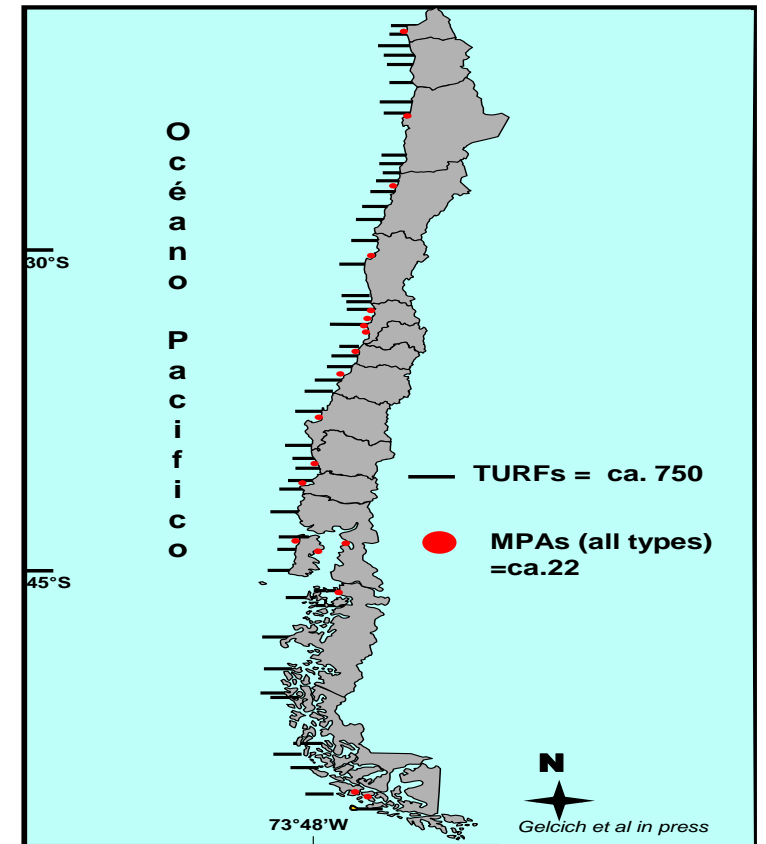
- ◆ Grants territorial user rights to **associations** of artisanal fishers.



15.000 Hookah divers



AMERB



How can we generate incentives for these allies to gain from marine Conservation?



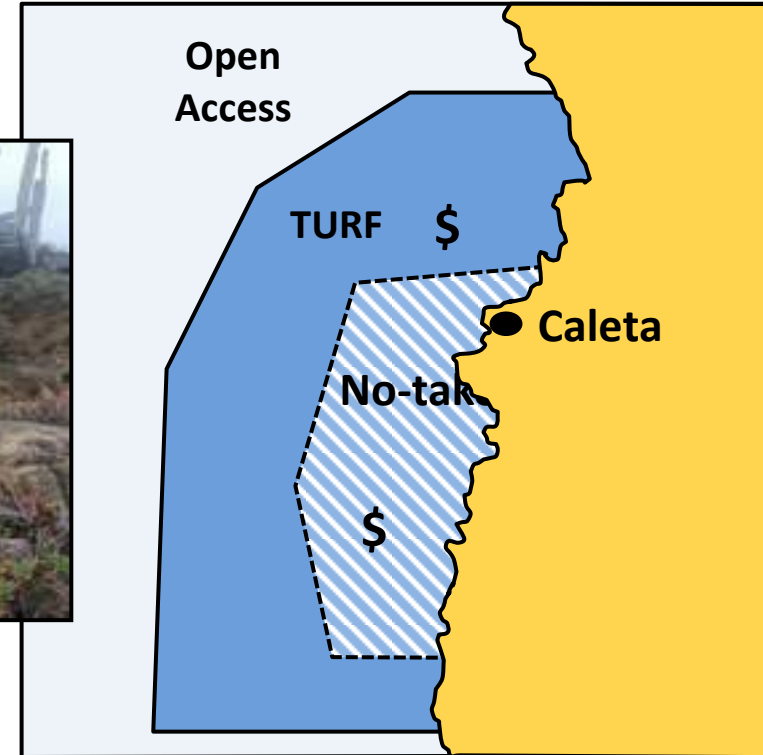
**One Idea:** co-design a program with artisanal fishers that compensates them for the opportunity costs of setting aside **a portion of their TURF as a no-take zone.**

**The outcome:**

- A scalable program that provides a supplementary revenue stream to fishers in exchange for management actions that produce **verified** and **enforced biodiversity** benefits.

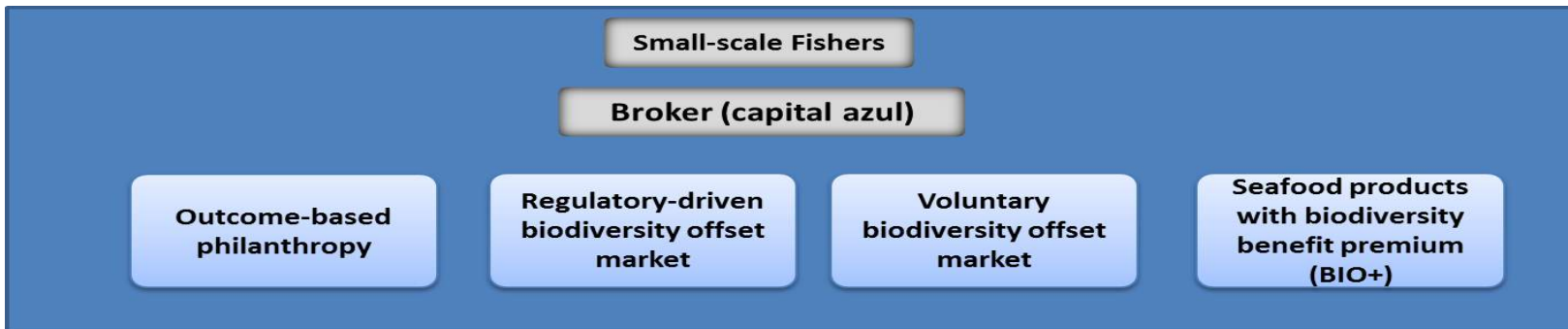


Enforcement Technology



Gelcich et al 2008; 2012; 2015

Demand for the biodiversity benefits that a program creates and maintains must be secured.



Benefits of the program feed back to ensure food security