

Too Big To Ignore Research Report

Number 07.1/2015



Too Big To Ignore

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Global Partnership for Small-Scale Fisheries Research

Too Big To Ignore - COS Joint Workshop

Thursday, June 11th, 2015

Hopkins Marine Station, Pacific Grove

toobigtoignore.net

RESEARCH

POLICY

MOBILIZATION

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Number 07.1/2015**

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Summary

The Too Big To Ignore-COS Joint Workshop was held on Thursday, June 18th, 2015 in Pacific Grove, California. The workshop was jointly organized by the Too Big To Ignore (TBTI) project and the Center for Ocean Solutions (COS) to present current work on Small-Scale Fisheries (SSF) and discuss potential future partnerships.

Agenda

Schedule Time	Topic & Activity
8:30 – 9:00	Arrive at meeting room (Light breakfast provided)
9:00 – 10:00	Introductions (All), Intro to COS (Larry Crowder), Meeting goals (Ratana Chuenpagdee)
10:00 – 11:15	Stewardship cluster, led by Rebecca Lewison, Ellen Hines & Tara Whitty
11:15 – 11:30	<i>BREAK</i>
11:30 – 12:00	Transdisciplinary research and training, led by Ratana Chuenpagdee
12:00 – 13:00	Public seminar “Making a case for small-scale fisheries: facts, figures and moving images” by Ratana Chuenpagdee, TBTI Project Director, Memorial University
13:00 – 14:15	Guidelines, led by COS & Ratana Chuenpagdee (Working lunch provided)
14:15 – 14:30	Fishing rights and conservation by Nathan Bennett
14:30 – 15:15	Global change response (I-ADApT), led by Alida Bundy
15:15 – 15:30	<i>BREAK</i>
15:30 – 16:00	Fish and food security, led by Eddie Allison
16:00 – 16:30	Global synthesis, led by Andrew Johnson
16:30 – 17:00	Wrap up, Discuss TBTI/COS future partnership

TBTI participants:

Eddie Allison, University of Washington

Nathan Bennett, University of British Columbia

Alida Bundy, Fisheries and Oceans Canada

Ratana Chuenpagdee, Memorial University

Ellen Hines, San Francisco State University

Andrew Frederick Johnson, Scripps, Center for Marine Biodiversity and Conservation

Becca Lewison, San Diego State University

Tara Whitty, Scripps, Center for Marine Biodiversity and Conservation

COS Participants:

Larry Crowder, Elena Finkbeiner, Elodie Le Cornu, Rebecca Martone

Hopkins Participants:

Rosana Ourens, Tim White, Tim Frawley

Introductions

Everybody: Short Introductions

Eddie Allison, University of Washington

Nathan Bennett, University of British Columbia

Alida Bundy, Fisheries and Oceans Canada

Ratana Chuenpagdee, Memorial University

Ellen Hines, San Francisco State University

Andrew Frederick Johnson, Scripps, Center for Marine Biodiversity and Conservation

Becca Lewison, San Diego State University

Tara Whitty, Scripps, Center for Marine Biodiversity and Conservation

Larry Crowder, COS, Monterey

Elena Finkbeiner, COS Monterey

Elodie Le Cornu, COS Monterey

Rebecca Martone, COS Monterey

Rosana Ourens, Hopkins, Pacific Grove

Tim White, Hopkins, Pacific Grove

Tim Frawley, Hopkins, Pacific Grove

Introduction to COS

The Center for Ocean Solutions works to solve the major problems facing the ocean and prepares leaders to take on these challenges. They value and steward linkages between the ocean, health and climate resulting in thriving marine ecosystems and vibrant coastal communities.

The Center is collaboration among the Stanford Woods Institute for the Environment and Hopkins Marine Station of Stanford University, the Monterey Bay Aquarium and the Monterey Bay Aquarium Research Institute. With support from the David and Lucile Packard Foundation, the Center combines Stanford's expertise in marine biology, oceanography, engineering, economics, law and policy with the Aquarium's unparalleled success in public education and outreach and MBARI's leadership in deep-sea technology, exploration and monitoring as well as marine and coastal economics.

Drawing on a pool of more than 80 scholars in the natural, physical and social sciences, and collaborating with other academic, governmental and non-governmental organizations, the center tackles interdisciplinary and multisectoral problems facing the coasts and oceans and the human communities that depend on them.

The Center for Ocean Solutions is committed to including all people and organizations in creating robust solutions to ocean challenges, and on their staff. They aim to make their projects inclusive, to engage diverse perspectives, and to equitably represent those affected by their solutions. The center strives to nurture diversity in the workplace understanding that diversity is critical for achieving the organization's mission and vision.

Mission and Vision

The Center for Ocean Solutions works to solve the major problems facing the ocean and prepares leaders to take on these challenges.

Globally, coasts and oceans provide key benefits to people, but are facing a multitude of current and future threats from land- and ocean-based activities and climate change. To reduce threats to our oceans, coasts and estuaries, and improve the delivery of services today and into the future, experts are calling on organizations and governments to develop practical solutions. This requires integrating cutting-edge science and technology with economic, social and political expertise, bringing researchers together with decision-makers.

In addition to bridging these gaps, building public understanding of these issues, producing leaders who can engage in effective problem-solving and take the actions necessary to solve these problems will be key to effective, lasting solutions that support ocean health and human well-being.

Introduction to TBTI

The Too Big To Ignore project (TBTI) grew out of idea to create a network of researchers that will specifically focus on the issues of SSF. The project was established a year and a half after the first World Small-Scale Fisheries Congress held in 2010 in Bangkok, Thailand. In 2014, TBTI organized a Second World Small-Scale Fisheries Congress in Merida, Mexico.

TBTI is a 6-year project with a budget of \$2.5 million from SSHRC and matching funds. It is a global partnership of researchers, practitioners, governmental and non-governmental organizations interested in sustainability of SSF. Established in 2012, the network consists of more than 200 members from 45 countries. The project partners with 15 organizations, including COS, TNC, Sea Around Us, IMBER, FAO, SEAsian Fisheries Development Center, COBI, IOS Canada, etc.

Mission

- elevate the profile of SSF
- argue against marginalization in national and international policies
- develop research to address global food security and sustainability

The partnership was organized into seven working groups around three components: Global Analysis, Big Questions, and Knowledge Integration:

Global Analysis (Synthesis) (WG1)

- Issue Prioritization
- Gap Assessment
- Information System

Big Questions (WGs2-6)

- Strengthening the Base
- Broadening the Scope
- Enhancing the Stewardship
- Defending the Beach
- Governing the Governance

Knowledge Integration (WG7):

- Synergy Creation
- Knowledge Mobilization
- Capacity Building

This year, the project moved into a new phase with the organization of activities around twelve 'research clusters'. For more information about the clusters, visit <http://toobigtoignore.net/research-cluster/>.

SSF Stewardship cluster, led by Rebecca Lewison, Ellen Hines & Tara Whitty

Presentation

How are/can small-scale fishing communities be leaders and active partners in management & conservation?

SSF as both depending on the system and impacting the ecosystem, as well as interactions with external drivers/impacts.

Stewardship

- Bycatch mitigation
- Area based conservation

"By 2020, at least 17% of terrestrial and inland water and 10% of coastal and marine areas are conserved through effectively and equitably managed, ecologically representative and well connected systems of Protected Areas and other effective area-based conservation measures" - Conv Biol Div:

- These OECMs are not defined anywhere but are essentially not under the IUCN categories
- Locally Managed marine areas
- Indigenous community conservation areas

Now a WCMC approved task force (Harry Jonas from Natural Justice):

- Working to define OECMs by 2018
- Post-2020 process (beyond Aichi)
- Working to raise the profile of SSF community-based approaches

- [currently Tara is the only marine person on the task force]

OECMs:

How to identify assess and implement OECMs:

- How are they established?

What are the legal frameworks, restrictions/regulations, driving institutions?

- Why are they established?

Ecological/Social objectives

- What do they achieve?

Outcomes: ecological/social

- How can they be sustained?

Mechanisms for future management; adaptation; scaling

Tara is working in Myanmar (point B & Mawlamyine Uni., IUCN Myanmar), Mexico (Gulf of California Marine Program), Madagascar (Blue Ventures...) to identify the attributes described above.

Next month:

- Alan White from TNC
- SE Asian - Coral Triangle Initiative
- Pacific Islands - LMMA Network, Pacific Island Fisheries Science Center

Mitigating Bycatch (primarily focused on marine megafauna)

Target partners: Southeast Asia Marine Mammal research community

Activities:

- solicit existing information on bycatch mitigation efforts and SSF stewardship initiatives in sites with documented MM bycatch
- disseminating and training in protocol for documenting SSF stewardship and bycatch mitigation efforts/context

Platform:

- Association for Tropical Biol and Cons meeting
- Society for Marine Mammalogy conference

Feeding into other initiatives: e.g., WCMC task force; Marine Conservation Institute

MPAtlas and GLORES; SAAFRN

Typologies of ABC

- e.g., McClanahan's MPA typologies based on restrictions and compliance (rather than through the titles)
- could also include governance types, etc.

How could this fit into TBTI's other activities (E.g. ISSF and others)?

Discussion

- Important Marine Mammal Areas group at Marseille (part of the IUCN Marine Mammal task force) also meeting at the Marine Mammal conference in December 2015
- pre-designated MPAs but designating areas that are intentionally set aside for Marine Mammal protection
- usual criterion for MPAs is corals in the tropics

Another group to connect to is the SEAMAM group

50 marine mammal scientists and agency personnel through SE Asia

- report in press from CBD

Association for Tropical Biologist meeting

- Marine Mammals in crisis in SE Asia

Looking into efforts within SSF for stewardship

Questions related to different efforts:

- What are the motivations for stewardship?
- How do you persuade fisher folk to become involved in conservation?
- Structures through which stewardship can be made
- What is people's concept of stewardship? (is there a word for it in their language (ethnolinguistics)?)
- What are the incentives for people to engage?

Blue Ventures in Madagascar

- octopus closures that are effective and suggested by the communities
- leading communities to be more interested in broader conservation measures

Need to scale up place-based efforts to larger scales

Typologies

IMBER Adapt framework [TBTI Global Change Responses Cluster]

- questions that are transcendent and can be applied across the globe

Stewardship ideas can come from other clusters/groups

- First Nations: US, Canada, Australia - lessons can be learned
- Indigenous fisheries cluster (Yoshitaka Ota; William Cheung - climate change adaptation)
- Other clusters – SSF Guidelines, Global Synthesis

Stewardship:

- Tools (typology and Tara's big picture questions around best practices)
- Process (enabling conditions/barriers) also need to be considered - agency, structure

- In part because stewardship happens around individual behaviors and around collective action
- Links between other framings for care for place/environment (e.g., adaptive capacity and sustainable livelihoods frameworks)

Before proceeding with tools/typologies:

- Different definitions of stewardship exist across stakeholders, cultures, etc. and thus stewardship may be achieved in different ways
- May be important to understand how people perceive stewardship first so that then typologies can be applied appropriately
- Turn to the work that has been done here

Stewardship can mean many things and look different from place to place

Document activities that SSF do that they consider contribute to certain causes

That is what is important in terms of stewardship conservation effort - self-defined

- Evidence that people have that they make the contribution

Timeline: 2-year deliverable

How can we capture this across global scale?

- crowd sourcing (form for people to include)
- use our network and ask people to put into the system

We could also identify more formalized area-based closures as a subset of stewardship efforts or bycatch reduction as an approach

Enabling vs. limiting/barrier conditions for stewardship behaviors (see draft paper of Becca and Ellen)

Differences between self-defined vs. not self-defined approaches

Refining Tara's tool from her dissertation:

- Bycatch workshop at SEAMAM - what do we know about bycatch?
- What sites should we be addressing? Where should we be working? - this could be a valuable input
- Mine data or concepts to do this work

Statement of intent – stewardship:

- also include metrics of effectiveness or ways to include those limits
- internally driven actor/agency vs. externally driven

Theory of Planned Behavior

- Factors that mediate what you do and what you would like to do

Moving forward:

- Questions and approaches that can help with broader perspective
- Deeper input on a given topic (e.g., area-based closures)
- Want to connect these data to the coastal profiles in the Global Synthesis cluster
- Convene a conference/workshop?

Transdisciplinary research and training, led by Ratana Chuenpagdee

Presentation

- developed an online course after Merida - online distance learning system through Memorial University, Canada
- broader ambition: to do this in-class teaching
- community capacity development-type training

These are different products but they should have common core-elements. Models and tools and training/teaching/learning kit would have to be developed but the group is working on the common core-elements and developing what “transdisciplinary” means.

Course philosophy

The transdisciplinary fisheries course emphasizes development of research and collaboration skills, allowing participants to transcend their previously acquired disciplinary knowledge. The course takes a holistic and problem-solving approach, which demands working across and beyond academic disciplines, as well as across spatial and temporal scales. Transdisciplinary work is viewed as a process, emphasizing inclusiveness and valuing of diverse viewpoints and knowledge of all the stakeholders. As part of the developmental practice of the course, the evaluation of power relations in knowledge access and production are included, aiming to create a reliable interactive multi-sector engagement based on trust.

Course Content (Knowledge, Concepts, Skills)

1. Theoretical - framing fisheries
 - context: an introduction to the complexity of the fisheries systems to indicate why a single disciplinary approach may not be appropriate
2. Conceptual - systems and interactions
 - fisheries case study introduction
 - ecological systems
 - social and economic systems
 - governance systems
 - system interactions
3. Skills- Analytical
 - problem solving skills
 - data collection and analysis

- engagement
- collaboration
- data dissemination

Discussion

A research and training strategy that tries to go between, across and beyond disciplines, 'all at one', in order to create a holistic approach to address complex societal problems, and to result in science that not only informs, but also transforms society;

- open transdisciplinarity involves non-academics in co-production of knowledge

Danika Kleiber (post doctoral fellow at TBTI) is working on putting together examples of transdisciplinary research/education

Need Shorter/Pithier/"Let's go to the moon" statements:

- Merging knowledge and ideas from many people and ways of thinking to address real world problems.
- "Solving problems with diverse knowledge and ideas".
- Tagline: "Doing research in the real world"
- Eddie suggests a Visual statement showing the consequences of disciplinary, interdisciplinary and transdisciplinary work
- quote "The world has problems but Universities have Departments"

Use Human-Centered Design to figure out ways to get uptake and communicate the philosophy and approach

FAO SSF GUIDELINES, led by Ratana Chuenpagdee and Elena Finkbeiner

Presentation

Global Assistance Program:

1. Raising awareness and providing policy support
 2. Strengthening the science-policy interface (holistic approach)
 3. Empowering stakeholders
 4. Support implementation
- Programme management, collaboration

Paragraph 11.9: Research and funds for SSF should be encouraged

COS' interest on the guidelines:

COS SSF working group

- April 2012-March 2014

- 3 peer-reviewed publications: Kittinger et al. 2014 - Emerging frontiers in social-ecological systems research for sustainability of SSF; Adaptive capacity of SSF in MBay; Rights Based Fisheries Management enabling conditions
- Timely opportunity to translate science into guidance for funders and practitioners with the delivery of the FAO guidelines on SSF sustainability
- We will include efforts beyond rights-based solutions for SSF reform
- Move beyond RBMs: wealth-based solutions, welfare-based solutions
- We hope to create guidance products that can be more accessible and tangible
- Lots of overlap even in other clusters

Process is intentionally opaque at the moment because we wanted to get feedback from TBTI as well as trying to understand the funding communities' needs to help us identify the best process moving forward

- How are current or future TBTI efforts congruent and complimentary with our proposed work?
- Would our proposed work pre-empt or unnecessarily duplicate any TBTI efforts?
- How could we partner with and engage TBTI and leverage their resources and networks?
- How could TBTI use our proposed work to inform or enhance their efforts?
- At what scale should we conduct our review/target our guidance?
- Who should we involve and bring to the table?

Discussion

Example: Global partnership for oceans (funded by Pro Fish) has fizzled at World Bank

- Civil society for fisheries
- Ocean grabbing
- Welfare
- The new World Bank president said it is 1980s style economics and development approaches. Moving away from this.
- Probably should consider including World Bank in the conversation?
- Use human-centered design
- User-friendly version of the FAO guidelines
- Many of these efforts are Informed by ideology (RBM)
 - Catch Shares
 - FishForever

Example: Lessons to learn from Norway:

- Examine the arguments being proposed
- Do something credible to undermine them as a piece of research...
- This gives people who are in policy something to argue with

Example: Analysis of FIPs - transition to FIPs and then you get access to markets. But often you don't do anything to transition to sustainability; commoditizes the food resources, changes the distribution from local to global

Important things to consider:

- Maintaining legitimacy
- Produce high impact science and then you package it for those people
- Co-production of the tool and communicate it in diverse way so that people understand.
- Monitoring of input and output and process
- Well-intended initiatives already exist and are underway but need guidance, road map to navigate the complexity and to ensure long-term solutions
- Consider using design thinking as process model
- No promise of success but goal is to improve odds
- Goal is not to not take away money for transformations of SSF but shift it to a different approach that's not one size fits all approach
- Translational piece: research to translation into to rules of thumbs
- Not cutting the funding and take away a chance to improve
- Consider whether it's useful to do this guidance document
- Funders and NGOs have already expressed an interest and demonstrated the need
- Take advantage of the spotlight on SSF lately; everyone is working on small-scale fisheries

Fishing rights and conservation, led by Nathan Bennett

Presentation

What are Rights?

- Principles of Freedom or Entitlement
- Fundamental Normative Rules
- Protection of dignity and well-being of individuals and groups
- Necessitate the assignation of responsibilities and culpabilities

Framing Rights

- Fundamental (Human) Rights
- Social and Economic Rights
- Civil and Political Rights
- Property Rights (5 categories of these rights)

Claims to Rights - Individual, Group or Society

Fishing rights are general thought of as property rights

- Limited access
- Fishing cooperatives

- TURFs and tenure
- ITQs and TEQs
- Local rights to fish/shellfish
- Short-term leases

Critiques

Eddie (Allison et al 2012)

- A broader view of fishing rights
- Right to fish, right to a livelihood, right to a good life, right to safety from harm, right to property, rights of future generations, etc.

Conservation as Right Action

- Fishing communities rely on healthy environments
- Nature itself has rights (ethical argument)

Recognize the wrongs and explore how to right these

Wrongs:

Social impacts of MPAs (Bennett & Dearden 2014)

Benefits and consequences

Ocean Grabbing

- Bennett, Govan and Satterfield 2015

When is an MPA an ocean grab?

- Lack of inclusion and foregone consent
- Undermining of traditional rights or historical tenure
- Use of violence or force
- Foreclosure on livelihood options and opportunities
- When deals occur behind closed doors

Inequity in Fisheries Management

Klain et al 2014; Pascual et al 2014

- Procedure - inclusiveness of rule and decision making
- Recognition - Accounting for stakeholder knowledge norms, and values
- Distribution - distribution of costs and benefits
- Context: surrounding conditions that influence actors' ability to exercise their rights

Right Conservation

- "Good" governance (Legitimacy)
- Contextualized and inclusive management
- Attend to livelihoods and social impacts

AND

- Exercise precaution and ensure sustainability

- Rights of the environment
- Address challenging trade-offs appropriately
- In designing the way to create or conserve value
- Have to understand the ways that it is distributed
- Work with them to improve value and distribute it in a just way
- Distributional part is at the same time as the value part

Global change response (I-ADApT), led by Alida Bundy

Presentation

How do small-scale fishing communities respond to change?

Based on case studies from around the world

Ahmed Khan (Saint Mary's University, Canada), William Cheung (UBC), Alida Bundy (DFO)

Application of the I-ADApT to SSF

- Alida Bundy, Eddie Allison, Ratana Chuenpagdee, Sarah Cooley, Ian Perry, etc.

I-ADApT: Assessment based on Description and responses, and Appraisal for a Typology

What do we do to address the possible threats to SSF?

- Developing awareness of what others have done
- Decision support tool based on past experiences of responses to global change
- Relies on contextualized case studies in places

3 components:

- Description
- Appraisal
- Typology

Aiming for anyone involved in decision making

- managers, policy makers, stakeholders, community members, etc.

- Theoretical Background
- DPSIR coupled with the Interactive Governance framework
- Governance - natural - social system

Description:

- Describe the states of these systems and the exogenous drivers/stressors on the three systems
- Describe the change
- Describe the impact
- Describe the capacities

- Describe the responses
- Outputs - were the objectives of responses achieved?
- Outcomes - issues addressed, side effects?

Typology

- tool for decision support and policy evaluation [cluster analysis]
- this will necessarily be a simplification of what is in the database

Questions are set up as:

- A. Background
- B. Description of stressors/impacts
- C. Vulnerability
- D. Governance and governability
- E. Response
- F. Appraisal

- Focus on marine fisheries and aquaculture
- Initial conceptual framework tested using 6 case studies from IMBER HDWG members
- Subset of questions are used to develop the typology
- Questions are scored on a 5-point scale or category
- e.g.,
- What is the ecological status of the affected ecosystem at the ecosystem level?
- What is the model of governance?
- Factor analysis (Rpackage FactoMineR (Husson et al. 2014))
- Development of the Typology

Preliminary conclusions

- Case studies can result into different "types"
- First order entry point to compare social-ecological resource crises to identify solutions which may, or may not, have worked elsewhere
- Typology guides to more detailed underlying
- Short-term response is more research
- No evaluation of longer term responses yet

Visit www.imber.info to add more case studies. Case study template is available on website.

- IMBIZO IV - 26-30 October 2015, Trieste, Italy
- Compare this with the SESMAD framework
- Contextualized with narrative and hope to capture the dynamics
- Tool can also be used as a baseline for how to learn about the system and to look at how it changes over time

Fish and food security, led by Eddie Allison

Presentation

How do SSF contribute to nutrition and food security?

What could alter that contribution and what can be done to sustain it?

What might fisheries governed for food security and nutrition look like?

Food security exists “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”

Fish are a contributor to Nutrition security - “the adequate consumption of micronutrient-rich foods”

- prevent disease

Fisheries food security linkages

- 158 million tonnes (fisheries and aquaculture production)
- Consumption - >15% of animal protein for 4.3 billion people; micronutrients

Particularly important for poor community

Indirect source of food security through provision of household income

Economic growth - exports US\$129 billion per year

Sumaila & Tech, 2013; FAO (2014) SOFIA

- Export oriented development is focused on the economic growth aspect of food security but this is often a trade-off of number of people who have income (although income may be higher) and who gets to eat the fish (i.e. the availability of micronutrients) because of higher price so increased market shares
- Average per capita consumption data don't disaggregate among the communities of people, so doesn't address the poverty issues
- Need data to make useful guidance on what types of management and conservation options can do to food security
- These are also based on official statistics on what is traded and sold but many are not reported (e.g., Bonny River, Niger delta)
- Hidden harvests: UBC trying to get at nutrition contribution of IUU fisheries

What will happen if these IUU fisheries data get quantified?

- Show that the seas could stand more fishing than they claim (i.e. there is all this production that hasn't previously been quantified)
- Quantify the significance of the artisanal catches
- Also a danger that the data will be used against it - because so valuable need to integrate it into the market economy (blue economy argument)

SSF occur in the areas that have conservation value (while other areas have been urbanized)

- This is where there is conflict between this
- Agenda of Blue Economy - achieve conservation at the risks of affecting people who don't have the power to resist

Local Knowledge: e.g., Niger Delta periwinkles - expectant mothers and during child rearing b/c highly nutritious (high in iron); combat infant mortality and women dying during childbirth

- 805 million people go to bed hungry every day, with one-third of global food production being wasted (1.3 billion tons each year)
- 2 billion people are affected by micronutrients deficiencies (public health issue); while 500 million individuals suffer from obesity Double burden of malnutrition is a situation where overweight and obesity exist side by side with under-nutrition in the same country
- Small fish - rich source of multiple essential micronutrients
- Compiling nutrition composition papers from around the world - many gaps
- Also depends not only on which species, also what parts you eat and how you cook it
- Need to eat small fishes with bones; can be a source of calcium
- This needs to be elevated to the bigger picture
- Also the Omega 3 profiles that are being promoted [affects demand and price]
- Good: anchovies, sardine, mackerel, salmon
- Not good: red snapper, catfish, grouper, pacific cod

Health literature: examined the effects of omega-3 on human health; meta-analysis of randomized control trials

- Some conclusive evidence on risk of cardiovascular disease, blood pressure risk reduction, etc.
- Otherwise limited or mixed evidence on other aspects
- Overall - WHO advice is "eat fish" and worry less about mercury because the benefits will outweigh the risks based on normal ranges of consumption
- Selenium content also mediates the mercury toxicity (selenium detoxifies bioactive mercury compounds)

[except eels - don't eat these]

Bell et al 2015 Marine Policy

- Trade-offs between direct and indirect pathways to food security (Pacific Islands)
- Tuna contribution to revenues in the Pacific e.g., Kiribas - more than half of the revenue for government comes from fishing licenses

Pacific Islanders are now eating imported high saturated foods (e.g., fried chicken, etc.)
Fish available in the form of reef fishes - unable to sustain population growth there

- Health impacts of the new dietary shifts
- Tuna could be diverted to fill need and this would reduce some of the revenue to government

- Only 12% of landings by 2020 - but this is a 12% loss of government revenues
- Inshore FADs as a way to bring tuna into people's diets OR local market distributions (need a strong government policy) [But how do FADs lead to local markets?]
- Should we tax unhealthy foods?

Using aquaculture to address Vitamin A deficiencies

What are we currently managing fisheries for?

- Legally: Global fishery management regime is defined by MSY
 - Dominant policy discourses: MEY - recovering the 'sunken billions', limiting loss of biodiversity
 - Alternative policy discourses: securing livelihoods, adaptive capacity, social well-being (not necessarily food security)
- Typical local value chain vs. global value chain (this is where the MEY policy, Market Integration, ITQs, FIPs is heading)
 - Reduces the number of people fishing and promoting stronger market integration and economic instruments and transformative governance
 - BUT this shifts the sector dominated towards large-scale fisheries to national/multinational buyers/processors/global distributors/importers, wholesale retailers, retail outlets, consumers...
 - Working to sustain the value chains that are SSF - independent fish traders - local and regional consumers
 - Need to generate more added value at the local level to sustain them
 - Conservation and Food Security
 - Theory of Change: MPAs lead to more fish which leads to food security
 - Not a lot of evidence for this
 - Doesn't take into account governance and a lot of other issues
 - Seascape conservation/planning
 - Foale et al 2014 Marine Policy
 - linking reef conservation with food security
 - attempts to fill in/articulate the theory of change
 - Causes of malnutrition is lacking access to capital (finance, natural, human, physical, social)
 - Poverty traps - inadequate care, lack of services, household food insecurity
 - Finding the gaps and designing research to fill them can be very useful
 - Aswani & Furusawa 2007: Coastal Management
 - Fish consumption is high near MPAs

What would governing for food security look like?

- We'd catch and eat more small nutrient-dense fish (reconsider size limits?)
- We'd conserve more big fish because some are worth more alive than dead

- We would orient aquaculture systems to produce nutrient-rich fish and shellfish at low trophic levels
- We would support the access regimes and value chains of inland and coastal fisherfolk supplying fish to local and regional markets
- We would reverse our current policy emphasis on getting more of the world's fish to the plate of rich, over-fed people [not a no-trade argument just being aware of when this works and when it doesn't]

- Future Work: From environmental change to human health outcomes via fish
Harvard institute of Public Health, UBC, UCSB, UW et al. SESYNC proposal (2016-2018) Abundance (OHI, Climate Models)
- Catch (Sea Around Us)
- Consumption (Diet and Health Survey, Age-Sex Allocation, Aquaculture Stats, Food elasticity analyses)
- Nutrition (FAO, USDC, Epidemiological studies)
- Health

Global synthesis, led by Andrew Johnson

Presentation

ISSF - official launch was in 2014. The website is available at <https://dory.creat.mun.ca/>. To contribute, visit the website

2014-2015: Enriching and cleaning the database, adding new datasets and functionalities

Need to be able to package the outputs for a range of audiences

- Funders
- Fishermen
- Managers
- NGOs
- Scientists
- Students
- Public
- Government

The 20 questions about SSF (i.e. SSF Profile) are the overarching questions for all clusters

- This can be the conduit for people to go through and fill in from other clusters
- OR we need to check that the information is asked or not with the profiles and then make sure there are other questions

Discussion

Challenges

- How to ground truth the data?

Incentives?

- may need to provide recognition if you provide data/case studies
- Profile of the week?

Wrap up, Discuss TBTI/COS future partnership

Stewardship Cluster

- Notions of stewardship and examples of it
- Focal areas: Megafauna bycatch and area based conservation
- Working to develop typologies; definitions for world conservation monitoring center
- Considerations: enabling and limiting factors; concepts of stewardship and the sources of those; process of how they are put into use; intent vs. realization
- Action items: template for the information; communicating with other groups (especially the I-ADAPT group, indigenous group)
- Need to streamline

I-ADAPT

- Underscore the case studies that need to be added
- Are there any other things to add?
- How to get the word out to people we know in our networks? Alida will send around

SSF Guidelines

- We are going to instigate a revolution
- Seems like a useful approach to achieve change
- Tagline: "Fishing for Solutions..."
- Target funding communities
- Drawing from lessons learned based on previous experiences
- Get feedback on the questions and how to collaborate with TBTI
- What scale should we be conducting our review and audiences? Who are we bringing to the table?
- Let's have a conversation with the SSF Guidelines Cluster and our group; Amsterdam meeting will be a place to have that conversation in two-weeks?

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RESEARCH

POLICY

MOBILIZATION