



4th World Small-Scale Fisheries Congress
(4WSFC)

4WSFC Asia-Pacific:
Building Forward Better

Congress proceedings

May 10-12, 2022

Shizuoka City, Japan

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CONGRESS PROGRAM

TUESDAY, MAY 10th – DAY 1

OPENING REMARKS

Tuesday, May 10th, 10:00 – 10:30

Opening and welcome remarks

- Mr. Nobuhiro Tanabe, Mayor, Shizuoka City [video greeting]
- Mr. Junichi Miyahara, President, Yui Fisheries Cooperative Association
- Dr. Kungwan Juntarashote, Chair, TBTI Global Foundation
- Professor Hiroshi Saito, Dean, School of Marine Science and Technology, Tokai University

PLENARY SESSION #1 – Adjusting the GENDER lens

Tuesday, May 10th, 10:30 PM – 12:30

Location: Zoom

Chair: Alice Ferrer

The COVID-19 pandemic has clearly demonstrated the importance of women in fisheries. As such, recovery efforts should have gender equality, justice, and sustainability at its center. It is recognized that gender equality is first a matter of social justice and achieving it requires support by all. Sustainable development cannot be attained if there is an imbalance between men and women in the access to rights, resources, opportunities, participation, power, and justice. So the session will focus on drawing answers to three questions: (1) Does social justice benefit women and men equally?; (2) How to make men more supportive of women?; and (3) How to achieve gender equality in the future? The session will draw answers from invited panelists as well as from the session participants. The aim is to identify how recovery from the pandemic can be gender-responsive and to identify the much-needed work towards gender equality.

- Jariya Sornkliang, SEAFDEC, Thailand
- Madu Galappaththi, University of Waterloo, Canada
- Kumi Soejima, Setsunan university, Japan

Jariya Sornkliang started off the plenary session by highlighting the women's involvement throughout the small-scale fisheries value chain, from processing, gear maintenance and marketing. Next, Kumi Soejima raised the question - are national laws and policies supportive of women in fisheries? She went on

emphasizing that women's efforts are not recognized as important in supporting fisheries in local communities, stressing that we need to replace the current policies with ones that serve both women and men. Madu Galappaththi showcased her research on dried fish value chains with a focus on gender and intersectionality, governance and social wellbeing, whose goal is to bring women's lived experiences within the fishing sector to the centre of research which will help to fill some of the gaps in the knowledge.

Take home messages:

- Gender equality is first a matter of social justice. Achieving it requires support by all;
- Achieving gender equality will require a multifaceted approach, one that will need to work towards changing perceptions of gender roles, creating gender-sensitive policies, ensuring gender-based data, providing better access to education and creating more opportunities for women, securing inclusion of women in decision-making processes, and working together with stakeholders, including policy makers and the industry;
- Some of the ways in which men can be more supportive of women's effort in small-scale fisheries is through spreading awareness, encouraging more men in becoming supporters and partners, by providing incentives as well as more opportunities for women, and promoting wellbeing as a value;
- Sustainable development cannot be attained if there is an imbalance between men and women in the access to rights, resources, opportunities, participation, power, and justice.

LUNCH (12:30-13:30)

PLENARY SESSION #2 – Adjusting the GOVERNANCE lens

Tuesday, May 10th, 13:30 – 15:30

Location: Zoom

Chair/Moderator: Andrew Song

This plenary session will engage with some of the 'big' questions that grapple the governance of SSF. The four keynote talks will touch on: 1) the question of what is the 'right' mode of governance for SSF whether it be traditional/feudal governance based on traditional rights of small-scale fishers, hierarchical governance based on central government oversight or more democratic/participatory governance based on broad stakeholder participation and constitutional rights; 2) the problem of distinguishing SSF and LSF for the purpose of management when there are significant and important overlaps in the post-harvest activities of tuna and in its value chains; and 3) the issue of how governance reforms and programs may evolve in the context of wider and abrupt

regime changes (or other external factors) that put pressure on SSF and its management. In adjusting the governance lens to help us build forward better, this session will speak to these themes (and more) and facilitate lively discussions with the conference participants.

- Kate Barclay, University of Technology Sydney, Australia
- Suvaluck Satumanatpan, Mahidol University, Thailand
- Rick Gregory, Myanmar
- Rayhan Dudayev, Blue Ventures, Indonesia
- Prasant Mohanty Nirman, India

The presentations highlighted some of the issues and the future plans to strengthen equitable fisheries governance in the Asia-Pacific regions. Given the various internal and external challenges facing small-scale fisheries, including management hurdles, health urgency, value chain complications leading to food price hikes and shortages, political crises and even military dangers, there is a clear need to carefully recalibrate governance. Adjusting the governance lens is necessary, but sometimes it might also call for a more radical approach (to renew or re-engineer) to place small-scale fisheries governance on the right track.

Adjusting the governance lens requires attention to both the broader political backdrop and the more nitty-gritty policy/management issues. Improving small-scale fisheries governance can be very difficult in the face of a disruptive, non-supportive or threatening political environment. But even with a favourable political climate (or at least neutral/civil), some governance innovations are to be sought, experimented and maintained.

Take home messages:

- Governance reforms and programs may evolve in the context of wider and abrupt regime changes, such as value chain complications;
- Given the various internal and external challenges facing small-scale fisheries, including management hurdles, health urgency, value chain complications that lead to food price hike and food shortages, political crises and even military dangers, there is a clear need to carefully recalibrate governance. Adjusting the governance lens is necessary, but sometimes it might also call for a more radical approach (to renew or re-engineer) in order to place small-scale fisheries governance on the right track;
- It was highlighted that adjusting the governance lens requires attention to both the broader political backdrop and the more nitty-gritty policy/management issues. Improving small-scale fisheries governance can be very difficult in the face of a disruptive, non-supportive or threatening political environment. But even with a favourable political climate (or at least neutral/civil), some governance innovations are to be sought, experimented and maintained; and
- “Those closest to the problems are closest to the solutions” - Rayhan Dudayev

BREAK (15:30 – 16:00)

PARALLEL SESSION #1

Location: Zoom

Time	Session title
16:00 – 17:30	Parallel Session #1
	#1.1: Accelerating Coastal Community-Led Conservation through Gender inclusion in Small-Scale Fisheries tribution/consumption #1.2: The Vulnerability to Viability Approach: Understanding the processes of building strong small-scale fisheries #1.3: Current status of the distribution and consumption of small-scale fisheries marine products in East Asia #1.4: Adjusting the Gender Lens – Contributed papers

Parallel session #1.1: Accelerating Coastal Community-Led conservation through Gender inclusion in Small-Scale Fisheries

Organized by: Vinod Malayilethu, WWF-India, India; Marina Gomei, WWF International, Italy, Marina Honig, WWF International, Italy, Jawad Umer Khan, WWF-Pakistan, Pakistan

Synopsis:

Women’s contribution to small-scale fisheries and aquaculture is frequently overlooked and under-recognized by local and national governments, policy-makers, and community officials. Women are involved in all aspects of the fisheries sector and play important roles in the direct fishing, processing, marketing, and conservation of natural resources, while also maintaining their family and household responsibilities. Despite the important role that women play in small-scale fishery operations and the benefits of seafood to women’s and children’s health, women are over-represented in fisheries and labour but are underrepresented in governance and therefore face many barriers to meaningful participation.

This session aims to highlight the role of women in fisheries and the necessity of their access to the ownership of Means of Production for them to realize their full potential to their contribution to the industry, especially the fishing post-harvest practices. It is also critical we support women’s representation in decision making bodies appropriately as currently in our societies the women are neglected and have no membership even in the fisheries cooperative societies. In Pakistan and India, coastal communities, WWF and partners have adopted a wide array of locally led solutions including improved fisheries business models, gender inclusive fisheries policies and management plans, women empowerment programmes and solutions aimed at strengthening women-led small scale fisher networks. Scaling and

acceleration of those successes to catalyse national and regional social change will require a women-led small scale fisher global movement involving CSOs, government, non-profit organizations and local communities.

Speakers:

- Sneha Prakasamma, WWF-India, India
- Vinod Malayilethu, WWF-India, India
- Ms. Velvizhi, India
- Jawad Umer Khan, WWF-Pakistan, Pakistan
- Fiza Shah
- Ms. Zaibo

Parallel session #1.2: The Vulnerability to Viability Approach: Understanding the process of building strong small-scale fisheries

Organized by: Prateep Kumar Nayak, University of Waterloo, Canada; Derek Armitage, University of Waterloo, Canada

Synopsis:

Small-scale fisheries are often characterized as vulnerable, and their viability is a key issue in fisheries governance given their diverse contributions to economy, environment and society. However, vulnerability and viability are hard to define. Moreover, these concepts have almost always been treated exclusively, and the inherent linkages between vulnerability and viability have largely remained unaddressed. We use “Vulnerability To Viability (V2V)” as a novel approach and conceptual framing to highlight their interconnected nature and the potential for vulnerable small-scale fisheries to transition towards viability. As such, we recognize V2V as a process that is multidimensional, complex, highly dynamic, and relative, the study of which needs to be inter- and transdisciplinary. Recent insights emphasize a three-dimensional view of V2V that includes key measures such as changes in wellbeing, differential access to capitals (e.g., natural, financial) and shifts in resilience. Several related concepts offer additional perspectives on V2V: a social-ecological system view highlights fish-fisher connections; sustainable livelihoods offer necessary framing to understand pathways to navigate transitions; gender and political ecology concepts support examination of critical questions about control, exclusion, inclusion, winners, losers, dominant narratives, strengths and weaknesses; power analysis offers valuable directions to include social relationships, history, politics, and cultural dynamics across multiple scales for empowerment and capacity development; and interactive and multi-level governance promotes understanding of the role of the institutions and decision-making processes along with the values, principles and actions needed. These perspectives suggest that the V2V process needs to be understood not just in an economic sense but requires inclusion of social, political, and ecological aspects of small-scale fisheries.

In this session, researchers from the V2V Global Partnership in Asia (i.e., Bangladesh, India, Indonesia, Japan, Malaysia, Thailand) will present papers focusing on various dimensions of the Vulnerability to Viability (V2V) approach and provide conceptual directions on how small-scale fisheries systems can transition from vulnerability to viability. An introductory paper will be presented by the session organizers. The session will emphasize that while small-scale fisheries will continue to remain vulnerable to multiple challenges (e.g., climate change), building on their existing strengths may be an effective strategy to increase viability. Further conceptual development of the V2V approach is essential in this regard.

Speakers	Title
Gazi Md Nurul Islam	Understanding the social-political and ecological dimensions of vulnerability in the small-scale fisheries in Marine Protected Areas of Malaysia: Does livelihoods strategy reduce or redistribute the vulnerabilities?
Haseeb Irfanullah	How did COVID-19 pandemic and 65-day fishing ban in Bangladesh help us to understand small-scale marine fishers' resilience?
Indah Susilowati	The Way Forwards from Vulnerable To viable of Fishers's Livelihoods in Karimunjawa, Central Java Province: through Stakeholders' Empowerment
Jenia Mukherjee	The vulnerability-viability interface: Exploring situated adaptive practices (SAPs) in the volatile island ecologies of the Sundarbans
Suvaluck Satumanatpan	Regulatory injustice: The consequence of a non-regular process in fisheries law-making in Thailand
Yinji Li	'After a decision has already been made about the TAC': small-scale fishers' 'fighting' against yield thinking in Japan

Parallel session #1.3: Current status of the distribution and consumption of small-scale fisheries marine products in East Asia

Organized by: Tsutom Miyata, Japan International Research Center for Agricultural Sciences, Japan; Alyne Delaney, Tohoku University, Japan; Yinji LI, Tokai University, Japan

Synopsis:

Small-scale fishers and related stakeholders are highly interested in increasing the value of their marine products. In this session, panelists, comprised of fisheries economists and local fisheries governmental officials in East Asia, will discuss the distribution and consumption of marine products produced by small-scale fisheries.

While East Asian countries have some similarities in seafood distribution and consumption, they have numerous differences, as well. Moreover, these structures continue to be changed by market and consumer needs, especially by the external pressure due to COVID-19, and the catastrophic destruction of fishing villages caused by Great East Japan Earthquake. Through their discussion, participants will learn about actual situations of the distribution and consumption of fishery products in other countries, helping to improve their own marketing strategies for fishery products produced by small-scale fisheries. Furthermore, the implementation of such improvements in each country is expected to generate new discussions and ideas to improve marketing strategies.

Speakers:

- Fang CHEN, Dalian Ocean University, China
- Yoshitsugu HAGIWARA, Shizuoka Prefecture, Japan
- Minseok YOO
- Ching chun CHEN, National Taiwan Ocean University, Taiwan

Parallel session #1.4: Adjusting the Gender Lens – Contributed papers

Chair: Jariya SORNKLIANG

Contributions from individual papers.

Speakers	Title
Naohiko WATANUKI	Small-scale fisheries in the context of Japanese cooperation
Hana MATSUBARA	Gender aspects of small-scale fisheries in Japanese coastal areas: Gender-responsive research for achieving sustainability
Ryoichi KATO	Last Ama first diver: Tengusa fishery regeneration story in Inatori fishing community, Japan
Udani GUNAWARDANA	Gendered engagement in Dried-fish Processing Industry in Sri Lanka
Fazeeha Azmi MOHAMED IBRAHIM	Vulnerability and social justice among fishing households headed by women in Batticaloa, Sri Lanka

PARALLEL SESSION #2

Location: Zoom

Time	Session title
17:45 – 19:15	Parallel Session #2

	<p>#2.1: Ecosystem Approach to Fisheries Management in Indonesian Small-Scale Fisheries</p> <p>#2.2: Bettering the world through engaging with the world: Small-scale fishers' creative engagement with broader society for improving the environment</p> <p>#2.3: Adjusting the Governance Lens (I) – Contributed papers</p> <p>#2.4: Adjusting the Food Lens (II) – Contributed papers</p>
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Parallel session #2.1: Ecosystem Approach to fisheries Management in Indonesian Small-Scale Fisheries

Organized by: CFI Indonesia Child Project

Synopsis:

Small-scale fisheries account for a significant fraction of global capture and participation. Some 85 percent of small-scale fishers and fish workers primarily operate in coastal waters in developing countries (World Bank, 2012). In Indonesia, one of the developing countries, the coastline stretches 108,000 kilometres, where 90 percent of fishermen belong to small-scale fisheries, which make an important contribution to nutrition, food security and sustainable livelihoods. The Indonesian government is aware of this situation and has therefore tried to enable small-scale fishers to access and use fisheries resources. The Indonesian government has tried to provide capacity building, access to capital, life insurance, etc. for the small-scale fishers. To achieve effective fisheries management that focuses on small-scale and coastal fisheries, the Indonesian government has introduced the concept of Ecosystem Approach to Fisheries Management (EAFM). Through the Coastal Fisheries Initiatives (CFI) Indonesia Child Project, Indonesian Government focuses on small scale fishery efforts to implement the full spectrum of EAFM activities– a spectrum that includes four critical components: enabling conditions (policy and legal frameworks to support EAFM); enabling tools to promote EAFM (improved Marine Protected Area (MPA) management, Better Management Practices (BMPs), and fisheries improvement projects (FIPs) tailored to a specific fishery; and knowledge sharing and monitoring and evaluation. This session will be part of knowledge sharing on innovation, progress, and lesson learned from the implementation of EAFM on small-scale fisheries in Indonesia, particularly under the CFI Indonesia Child Project Framework.

Speakers:

- Ridwan MULYANA, Ministry of Marine Affairs and Fisheries, Indonesia:
 - The history and lesson learned of EAFM implementation in Indonesia
- Fery SUTYAWAN, Coordinator for Inland, Territorial, Archipelagic Sea and Fisheries Governance, Indonesia:
 - The next steps of EAFM implementation under the framework of CFI Indonesia Project

Parallel session #2.2: Bettering the world through engaging with the world: Small-scale fishers' and local stakeholders' creative engagement with broader society

Organized by: Alyne DELANEY, Tohoku University, Center for Northeast Asian Studies

Synopsis:

This session brings together Japanese small-scale fishers and related stakeholders to present their own, innovative activities for improving the world. The panel provides a platform enabling voices of the “local” from Tohoku Japan to speak for themselves. This includes: a nori fisherman who has not only recovered from challenging events (3.11), but who has a unique perspective on humans and the sea, and the steps he is taking for a better future; a member of a local tourism association who creatively works to spread the word on their specialty seafood products; and a local fishing cooperative association who works on citizen science activities to not only improve the health of their local marine environment, but also to strengthen their own harvests. The goal of the panel is to enable local voices to speak up and share their own unique activities and worldview.

The proposed session will include both traditional and multi-media presentations with fishers and related stakeholders. The session includes:

1. A nori cultivator and his history (post-3.11) educating others on our connections with the sea and the importance of our actions. He conducts workshops throughout Japan and even internationally.
2. Local FCAs who have agreed to take part in an international eDNA Octopus study. They have done so not only for its “environmental” merits, but also as it advances their own goals for “branding.”
3. Small town efforts to educate society about their marine products through special events such as photo contests, food competitions, and a new public activity space in a tsunami hit area.
4. Women-led entrepreneurship. From making new products, to beginning new businesses, women are often at the forefront of innovation in coastal communities. The session brings one such entrepreneur to speak about how and why she began.

The goal of the session is to highlight some of the “Building Forward Better” activities in Japan to educate others and provide inspiration, as well as to connect with other fishers and researchers in Asia.

Speakers/Panel participants:

- Futoshi AIZAWA (相澤太), Nori Fishermen (Nori Aizawa Suisan), Higashi-Matsushima, Miyagi, Japan
- Wakako SUZUKI (鈴木若子--すずきわかこ), Town of Shichigahama Tourism Association, Shichigahama, Miyagi, Japan
- Alyne DELANEY, Tohoku University, Center for Northeast Asian Studies, Japan

Parallel session #2.3: Adjusting the Governance Lens (I) – Contributed papers

Chair: Mohammad Mahmudul Islam

Contributions from individual papers.

Speaker	Title
Xin ZHAO	Towards sustainable small-scale fisheries in China: A case study of Hainan
Raymond AYILU	Small-scale fisheries in the Blue Economy: Review of scholarly papers and multilateral documents
Annie Young SONG	Shaping priorities in conservation: Political economy of protecting marine species
Thaug HTUT	Transforming small-scale fisheries in Myanmar: Lessons from inshore fisheries co-management in Myanmar
Wint HTE	Implementing Ecosystem Approach to Fishery Management (EAFM) in Gulf of Mottama, Myanmar
Iria GARCIA-LORENZO	Community-based fisheries organizations and sustainable development: Lessons learned from a comparison between European and Asian countries

Parallel session #2.4: Adjusting the Food Lens (II) – Contributed papers

Chair: Madu Galappatthi

Contributions from individual papers.

Speaker	Title
Victoria RAMENZONI	Taboos as tools of conservation? Understanding the role of dietary prescriptions in regulating access and use of marine resources
Udani GUNAWARDANA	Reviewing consumer concerns and producer practices on packing and labelling of dried fish to improve the dried fish market in Sri Lanka
Monoarul ISLAM BHUIYAN	Fishers' responses to changing storminess in the northern Bay of Bengal
Ilmi LOKUGAMAGE	The effect of X-Press Pearl Disaster on Marine fish consumption of Sri Lanka

Social event: Girls Who Fish Japan: Bringing girls and women to fisheries

19:30-21:00 JST

Chair/Moderator: Ratana Chuenpagdee (Memorial University of Newfoundland, Canada)

Speakers:

- Katia Frangoudes (University of Brest, France)
- Kimberly Orren (Fishing For Success, Canada)
- Yinji Li (Tokai University, Japan)
- Reiko Matsuura (Shizuoka Prefectural Government, Japan)
- Terue Kawaguchi (Shizuoka Prefectural Federation of Fisheries Cooperative Associations, Japan)
- Izumi Seki (Tokai University, Japan)
- Mizuho Onuma (Uchiura Fisheries Cooperative Association, Japan)
- Masakazu Saito (Mochimune Branch of Shimizu Fisheries Cooperative Association, Japan)

Girls Who Fish Japan is a program inspired by the Canadian ‘Girls Who Fish’ program in Petty Harbour, Newfoundland & Labrador, aiming to bringing girls and women to fisheries. Coordinated by TBTI Japan, the program members from eight to eighty years old gather together once a month at the Mochimune fishing community in Shizuoka and experience hands-on learning about the fisheries and fishing communities. The program is run through a collaboration of several organizations, institutions, projects, and networks, including Tokai University, V2V Japan, Shizuoka Prefecture, Shizuoka Prefectural Research Institute of Fishery and Ocean, Shizuoka City, Fishing For Success, and many others.

The speakers, who included government representatives, fishers’ organizations, fisher leaders, female fishers, and experts, discussed the importance of Girls Who Fish program, what needs to be done, and how to cope with current challenges related to gender equality and equity in fisheries.

DAY 1 Summary

10:30 – 12:30

PLENARY SESSION #3 – Adjusting the RESEARCH Lens

Wednesday, May 11th, 10:30 – 12:30

Location: Zoom

Chairs/Moderators: Suvaluck Satumanatpan & Prateep Kumar Nayak

Building Forward Better small-scale fisheries relies on how best we are able to (re)adjust multiple lenses to understand and respond to the challenges and opportunities within and beyond SSF sector. Multidimensional, complex and unpredictable problems within SSF require dynamic and diverse tools, approaches and knowledge as opposed to a static set of lenses. We focus on Adjusting the RESEARCH Lens as crucial to facilitate creation of new knowledge and appropriate use of existing knowledge to generate novel concepts, methodologies and understandings useful to respond to the complex and uncertain challenges facing small-scale fisheries social-ecological systems. Research enables us to analyse problems, develop diverse understandings and design adaptive response strategies through either strengthening existing mechanisms and methods or helping to craft new ones. In a transdisciplinary sense, research empowers us to ask different, unorthodox questions, the answers to which impact the future of humanity, and positions our pursuit of knowledge between, across and beyond disciplines and ways of knowing and doing.

Two principles guide the overall goals of this theme. First, research lens is integral to all other lenses and the overlapping connections amongst them is crucial for how SSF can be sustainable, resilient and viable. Second, the research lens in question is transdisciplinary in nature, therefore, it embodies the spirit of knowledge, theory, practice, action, advocacy – all in one place – and shuns the strict disciplinary boundaries, not to reject them but to create novel and hybrid spaces for everyone to engage.

Speakers:

- Ratana Chuenpagdee, Memorial University/TBTI, Canada
- Derek Johnson, Dried Fish Matters (DFM), University of Manitoba, Canada
- Prateep Kumar Nayak, Vulnerability to Viability (V2V) Global Partnership, University of Waterloo, Canada

Roundtable Panellists:

- Gazi Nurul Islam (Malaysia)

- Sisir Kanta Pradhan (Canada)
- Himli Mat Ghani (Malaysia)
- Jenia Mukherjee (India)
- Yinji Li (Japan)
- Kungwan Juntarashote (Thailand)

This Plenary was opened with some key questions and messages from the session co-chair and co-organizer, Suvaluck Satumanatpan. The key questions for this session were put to the panel speakers and discussants:

- What is the research lens and its significance within the current state of small-scale fisheries?
- How best can the research lens be characterized; what are the key elements?
- Are the existing research lenses and approaches sufficient to address the challenges facing small-scale fisheries?
- Is there a need to adjust the existing research lens and approaches?
- What are some of the key directions that research should take, especially with the Asia-Pacific small-scale fisheries?
- How is adjusting the research lens connected to the other lenses being discussed in the congress?

Ratana Chuenpagdee began with a reflection on the past 10 years of Too Big To Ignore, Global partnership, the first World Small-Scale Fisheries Congress in 2010 and all the research that has been completed under this partnership. She reflected on three important points of research, something which the TBTI partners aim to integrate into their research projects. It is important that research considers the co-production of the design, approach and dissemination. Derek Johnson reflected on the importance of critical self-reflection throughout the collaborative research process as well as creating a more ethically robust pathway to collaborative research. Prateep Kumar Nayak stressed how the research lens needs to address or respond to the ongoing changes and dynamism in small-scale fisheries as a static lens would be a gross mismatch with the goals we wish to achieve.

Take home messages:

- The research lens is integral to all of the other lenses and crucial to creating sustainable, resilient and viable small-scale fisheries;
- The research lens in question is transdisciplinary in nature, therefore, it embodies the spirit of knowledge, theory, practice, action, advocacy – all in one place; and
- The emphasis is on co-production, togetherness, fostering connections and contributing to or challenging the current knowledge and making any results from research more accessible to the general public.

LUNCH (12:30 – 13:30)

PLENARY SESSION #4 – Adjusting the FINANCIAL Lens – Accounting for Changes

Wednesday, May 11th, 13:30 – 15:30

Location: Zoom

Chair/Moderator: Yinji LI & Ratana Chuenpagdee

Financial security is one of the key conditions for 'Building Forward Better' for small-scale fisheries. Studies show that many small-scale fisheries people do not have access to credits and thus rely on buyers and collectors of fish for loans, which aggravates small-scale fishers' vulnerability in the value chain. They are also financially disadvantaged when it comes to government assistance programs, like subsidies, with the majority allocated to support large-scale industrial fisheries, which often leads to harmful fisheries and injustice issues. 'Adjusting the Financial Lens' is imperative to promote the economic viability of small-scale fisheries and remedy the above situations towards a just and sustainable ocean. How can we improve the research and financial lens on small-scale fisheries? How can such an account contribute to current policy debates around food security, resource management, and alternative and supplementary livelihoods? What needs to be done from the financial aspect by the key relevant sectors to help small-scale fisheries build forward better? This session will answer such questions and share meaningful insights for Accounting for Changes.

Format:

This session will feature a 30-min keynote presentation by an expert in the field, which a panel discussion will follow to present the perspective from Japan on the topic. Four panelists will represent a donor community, government agency, a fisher organization, and academia. Then, the floor will be open for views from other countries for general discussion. Lastly, a summary of the ideas and suggestions that emerged during the session will be provided. Simultaneous Japanese-English interpretation will be provided for the session.

- 30 min keynote (20 min presentation & 5-10 min Q&A)
- 50 min panel discussion (5 min comment by each panelist & 25-30 min general discussion)
- 10 min conclusion

Speakers:

Keynote:

- Michael Fabinyi, University of Technology Sydney, Australia

Panelists:

- Masanori Kobayashi, Ocean Policy Research Institute, Sasakawa Peace Foundation, Japan
- Kuwashi Suzuki, National Federation of Sea-area Fisheries Adjustment Commissions, Japan

- Hidenori Nakahira, Ministry of Agriculture, Forestry and Fisheries Takeshi Hidaka, Kindai University, Japan
- Takeshi Hidaka, Humanity-oriented Technology and Science, Kindai University, Japan

Michael Fabinyi started off the plenary with some key points for discussion and points out that there should still be focus on getting some of the basics in small-scale fisheries right. He provided the example of how small-scale fisheries still have significant negative impacts from industrial fisheries, which has been well known for decades but has still not been addressed. Addressing issues like these will go a long way to help increase the financial viability of small-scale fisheries. The panel discussion followed and presented the perspectives from Japan on the topic. Four panelists represented a donor community, government agency, a fisher organization, and academia. The panel centered around the financial investment approaches that can support fishers and fishing communities.

Take home messages:

- Bringing focus to the Blue Economy in terms of small-scale fisheries, what effects it will have on fishing communities and how it can benefit them; and
- The importance of balancing increased commodification and innovation in the industry with the effects of environmental degradation such as a loss of space and yields.

BREAK (15:30 – 16:00)

PARALLEL SESSION #3

Time	Session title
16:00 - 17:30	Parallel Session #3
	#3.1: Umigyo: Exploring the way of securing life above water and below the water #3.2: Collaborative process in research on dried fish in Asia: Social economy, nutrition, and 'improvement' #3.3: Prospects for small-scale fisheries transitioning from vulnerability to viability #3.4: Adjusting the Governance Lens (II) – Contributed papers

Parallel session #3.1: Umigyo: Exploring the way of securing life above water and below the water

Organized by: Yinji Li, Tamano Namikawa & Alyne Delaney

Synopsis:

Despite their roles and importance in securing fisheries sustainability, Japanese small-scale fisheries face various challenges today, including unstable fishing household income, aging populations, lack of successors, losing community vitalities, etc. In addition to those challenges, a recent policy change that enables private capitals to enter into coastal fisheries has caused great concerns to the situation. We argue the Umigyo strategy is an effective and essential way to cope with these challenges in such a new era. Umigyo is a series of economic activities carried out by community people centred on fishers and fishers' organizations utilizing fishery resources and all kinds of community resources, including landscapes, sceneries, cultures, heritage, etc. This session explores the Umigyo theory and practices to secure life above water and below the water. After two introductory talks and five short presentations on best practices with keywords of Stay, Play, Buy, Eat, Learn, a panel dialogue with fishers will follow.

Speakers:

- Sachiko HARADA, Tokyo University of Marine Science and Technology, Japan
- Tsutomu MIYATA, Japan International Research Center for Agricultural Sciences, Japan
- Hajime OSHIMA, Regional Planning Institute, Japan
- Takamitsu Fumoto, Suidosha Co., Ltd.
- Naruhito TAKENOUCHI, Ehime University, Japan

Fishers panel:

- Junichi MIYAHARA Yui FCA, Japan
- Masakazu SAITO, Mochimune FCA, Japan
- Kuwashi SUZUKI Inatori FCA, Japan
- Mitsuro TAKADA Ito FCA, Japan

Parallel session #3.2: Collaborative process in research on dried fish in Asia: Social economy, nutrition, and 'improvement'

Organized by: Derek Johnson, Dried Fish Matters, University of Manitoba, Canada

Synopsis:

This session reports on progress towards understanding the social economy of dried fish in South and Southeast Asia under the umbrella of the Dried Fish Matters

project. Rather than a traditional paper presentation format, the session is organized around a series of thematic mini-workshops on themes of transdisciplinary collaboration, social economy, nutrition, and 'improvement'. The first theme, collaboration, is embedded in the very design of the panel itself. The three other themes are the focus of each mini-workshop. These begin with short presentations of key observations and emerging questions, articulated in relation to visual material, that open up into a plenary brainstorming session on each theme. The panel is designed to reflect the work-in-progress stage of the DFM project. It takes inspiration from the idea that out of uncertainty and contingency, valuable new insights and suggestions for new directions may emerge.

Speakers:

- Derek Johnson, University of Manitoba
- Sujani Anupama, University of Ruhuna
- Mahfuzar Rahman, University of Manitoba
- Tara Nair, Gujarat Institute of Development Research
- Jeena Srinivasan, Centre for Economic and Social Studies
- Ramachandrudu Barigela, Village Service Society
- Nikita Gopal, Central Institute of Fisheries Technology
- Kyoko Kusakabe, Asian Institute of Technology
- Ben Belton, WorldFish / Michigan State University
- Arjilli Dasu, District Fishermen's Youth Welfare Association
- Sisir Pradhan, University of Waterloo
- Si Thu Lin, Asian Institute of Technology / Network Activities Group
- Nova Almine, Memorial University of Newfoundland
- Amalendu Jyotishi, Azim Premji University
- Raktima Ghosh, Indian Institute for Technology Kharagpur
- Rotimi Aluko, University of Manitoba
- Yasodha Hirimuthugoda, University of Ruhuna
- Eric Thrift, University of Manitoba
- Mahed Choudhury, University of Manitoba
- Mirza Taslima, Jahangirnagar University

Parallel session #3.3: Prospects for small-scale fisheries transitioning from vulnerability to viability

Organized by: Prateep Kumar Nayak, University of Waterloo, Canada

Synopsis:

Small-Scale Fisheries support over 90 percent of the 120 million people engaged in global capture fisheries, about half of them are women, and they contribute two-thirds of the global fish catch destined for direct human consumption. Strongly anchored in local communities, small-scale fisheries reflect a way of life, and they

provide critical contributions to nutrition and food security, poverty alleviation and livelihoods, and local and national economies, especially in developing countries. Yet, their multiple benefits and contributions are often overlooked as many SSF communities remain economically and politically marginalized, are highly vulnerable to change, and until recently, remained largely invisible in policy debates in most countries and internationally. These factors, together with increasing vulnerability due to climate, environmental, economic and policy drivers have created a global crisis in small-scale fisheries. Despite overarching nature of neglect, the survivability of many small-scale fisheries suggests they possess certain strengths and forms of resilience which remain less studied and poorly understood. While these strengths cannot be taken for granted, a holistic understanding of what causes vulnerability and what makes small-scale-fisheries viable is required. The goal of the panel is to critically examine the diverse factors and conditions contributing to the vulnerability of small-scale fisheries, and to reflect on ways that are crucial to enhance their viability. The terms vulnerability and viability not just in an economic sense but also to include social, political, and ecological aspects of small-scale fisheries.

Speakers:

- Alyssa ROBINSON, University of Waterloo, Canada
- Amrita SEN, Indian Institute of Technology Kharagpur, India
- Ana Carolina ESTEVES DIAS, University of Waterloo, Canada
- Emily FILINSKA, University of Waterloo, Canada
- Ruyel MIAH, University of Waterloo, Canada
- Sarmistha PATTANAİK Indian Institute of Technology Bombay, India
- Vandana BHARTY, University of Waterloo, Canada

Parallel session #3.4: Adjusting the Governance Lens (II) – Contributed papers

Chair: Rayhan Dudayev, Indonesian Center for Environmental Law, Indonesia.

Contributions from individual papers.

Speaker	Title
Dennis CALVAN	Opportunities to advance small-scale fisheries through local government devolution in the Philippine
Mina HORI	Constrains to continue eco-labelling: Case study from coastal small-scale fisheries in Kochi, Japan
Kaumi Lakmali PIYASIRI	Towards securing tenure rights of small-scale fishers: Reconciling ethics in SSF Guidelines
Rosewine JOY	Transforming Institutions in Transitional societies of fishing communities in India
Andrew SONG	Diffusion of trade-related measures to end IUU fishing: A global pursuit?

Sonja GANSEFORTH	Survey of Small-Scale Fishing Households in Japan: Livelihoods, COVID19, and Fishery Law Reform
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BREAK (17:45 – 19:15)

PARALLEL SESSION #4

Time	Session title
17:45 – 19:15	Parallel Session #4
	#4.1: Market-based access programs and small-scale fisheries: Learning from 20 years of experience #4.2: Reimagine Tuna: Leaving no one behind #4.3: Practicing transdisciplinary research in Thailand: Lessons and challenges #4.4: Adjusting the Research Lens – Contributed papers

Parallel session #4.1: Market-based access programs and small-scale fisheries: Learning from 20 years of experience

Organized by: Duncan Leadbitter, Fish Matter (on behalf of FastNet), Australia

Synopsis:

Market based programs in support of sustainable seafood have become common over the past twenty years and a variety of different approaches has evolved. Small-scale fisheries have a mix of experiences with such programs and the conference provides a timely opportunity to garner some of these experiences with the aim of ensuring that existing or new programs can improve their relevance and access for small-scale producers.

Speakers:

- Hisanori Kannno, Marine Ecolable
- Corey Peet, Asian Seafood Improvement Collaborative
- Martin Purves, International Pole and Line Foundation
- Matt Fox

Parallel session #4.2: Reimagine Tuna: Leaving no one behind

Organized by: Roy Bealey, International Pole & Line Foundation, Global

Synopsis:

This session will explore how the status quo of the industrial tuna sector can and should be disrupted and replaced by equitable, Sustainable-Development-Goal-aligned, small-scale-fisheries that contribute to food security, poverty alleviation and livelihood security by using sustainable one-by-one fishing techniques. Tuna is a global commodity that is consumed in high-end markets as steaks, sushi, sashimi, and poke, but it is also a vital affordable source of protein for many coastal communities in developing countries. One-by-one tuna fishers are often marginalized when it comes to governance decision-making and access to markets, despite its key contributions to socio-economic and food security benefits.

The session will start with presentations from guest speakers discussing the David and Goliath challenges facing small-scale-tuna-fisheries competing with rampant industrialized fisheries, followed by a discussion about how ocean leaders from business, civil society, international organizations, and science have an opportunity to conserve and sustainably use our oceans in a way that ensures “no one is left behind”. Subjects will include: the equity challenges in fisheries management and resource allocation, the impact of harmful fisheries, the importance of human rights at sea, and protecting biodiversity with a focus on solution-oriented discussions and examples.

Speakers:

- Roy BEALEY, IPNLF, Global
- Martin PURVES, IPNLF, Global
- Jeremy CRAWFORD, IPNLF, Indonesia
- Yaiza DRONKERS, IPNLF, Global
- Zacari EDWARDS, IPNLF, Global

Parallel session #4.3: Practicing transdisciplinary research in Thailand: Lessons and challenges

Organizer & Moderator: Ratana Chuenpagdee, TBTI/Memorial University, Canada

Synopsis:

Transdisciplinary research often happens, not as part of a purposeful design, but out of necessity. This implies that researchers are not always trained as transdisciplinary scientists but are learning to become one. For complex and dynamic problems like those involving small-scale fisheries, transdisciplinarity is a natural progression. While transdisciplinarity can be taught and learned, experiences from researchers and practitioners are valuable to help strengthen the practice. In this session, we first present journeys and lessons on transdisciplinarity based on the experience of TBTI Thailand researchers. Next, we invite participants to share their stories and join the discussion about challenges in transdisciplinary research and what can be done to overcome them.

Speakers:

- Kungwan JUNTARASHOTE, Kasetsart University, Thailand
- Suvaluck SATUNMANATPAN, Mahidol University, Thailand
- Thamasak YEEMIN, Ramkhamheang University, Thailand
- Jariya SORNKLIANG, SEAFDEC, Thailand

Parallel session #4.4: Adjusting the RESEARCH Lens – Contributed papers

Chair: Michael Fabinyi

Contributions from individual papers.

Speaker	Title
Rumana SULTANA	Multilevel resilience of fishing communities of coastal Bangladesh against Covid-19 pandemic and 65-day fishing ban
Baek EUN_YOUNG	A study on the current status of glass eel catch
Hyesoo HA	The current status and improvement plan of oyster seed production in South Korea: Focused on Nulcha Village in Busan
Rakhi DAS	Solar fishing boat: A groundbreaking initiative for small-scale fisheries & blue revolution
Hayato KANNO	Size limits on fishing: a simple prescription for managing data-poor small-scale fisheries

Social event: Book Launch: Life Above Water translated

May 11, 19:30-21:00 JST

Chair/Moderator: Ratana Chuenpagdee (Memorial University of Newfoundland, Canada)

Keynote: Svein Jentoft (University of Tromsø, Norway)

Panelists:

- Takeshi Hidaka (Kindai University, Japan)
- Joji Morishita (Tokyo University of Marine Science and Technology, Japan)
- Tetsu Sato (Ehime University, Japan)
- Ryutaro Kamiyama (Japan Fisheries Research and Education Agency)
- Shio Segi (Konan Women's University)
- Tamano Namikawa (Japanese Institute of Fisheries Infrastructure and Communities, Japan)

➤ Yinji Li (Tokai University, Japan)

Written by one of the founding members of TBTI, Prof. Svein Jentoft, *Life Above Water* offers thoughtful reflections on the issues and questions about small-scale fisheries. The book, which launched the TBTI Publication Series in 2019, is a compilation of essays that Prof. Jentoft has written throughout his long career. It brings to the fore the meaning and value of small-scale fisheries and why we should care about them.

The book was successfully translated with some extra contributions from Japanese fishers, bringing the experiences and knowledge from the book to the people of Japan. It functions to connect different cultures within the theme 'Life Above Water'. Through the Japanese translation of this book, the editors and translators hope to raise awareness of small-scale fisheries in Japan and provide an opportunity for everyone to think about appropriate governance and policies for small-scale fisheries In the Era of Big Change.

Take home messages:

- This book brings to the fore the meaning and value of small-scale fisheries and why we should care about them.
- "Life above water works differently from life below it. Life above water is about us." - Svein Jentoft

DAY 2 SUMMARY

10:00 – 10:30

PLENARY SESSION #5 – Adjusting the FOOD Lens

Thursday, May 12th, 10:30 – 12:30

Chair/Moderator: Izumi Seki, Tokai University, Japan & Derek Johnson, Dried Fish Matters, University of Manitoba, Canada

It is an obvious but crucial fact that small-scale fisheries produce food. The quality of that food has become increasingly important in current fisheries research: more and more attention is being given to the role of fish in a healthy diet. Yet, there is still much that we don't know about how small-scale fisheries function as part of local and global fish-food systems. This plenary foregrounds one model that seeks to highlight the positive role that small-scale actors can play with regard to fish. This is the idea of short value chains where retailers cultivate direct relationships with fish producers and processors (or vice versa) in order to foreground a broader set of values than simply profit. Fish in this model, thus may represent societal goods associated with small-scale fisheries like family or cooperative enterprises, ecologically sustainable fishing practices, or common heritage while also potentially providing fresh, tasty, local specialities.

The fish as food plenary grounds this theme of short value chains, and its potential benefits for small-scale fisheries, in an example from Shizuoka itself.

Speakers:

- Miki Jitsuishi, Women's Group of Yui Fisheries Cooperative Association, Japan
- Yasushi Mochizuki, Shizuoka Prefectural Set-Net Fisheries Association, Japan
- Takuma Aoki, Mochimune Branch of Shimizu Fisheries Cooperative Association, Japan
- Mizuho Onuma, Uchiura Fisheries Cooperative Association, Japan
- Yusuke Unno, Marukai, Ltd., Japan
- Sachie Kawauchi, Japan

Derek Johnson flipped the 'Adjusting the Food Lens' title by asking 'How does the advent of a food lens in fisheries social science adjust how we understand small-scale fisheries?'. He made two observations on how a food lens changes the way we look at small-scale fisheries; broadly, the heightening of interest of fisheries social science in fish as food deepens the tension to Life Above Water, as small-scale fisheries are first and foremost about food production. He also highlighted the importance of paying more attention to small-scale fishers as economic actors.

The second part of plenary featured local actors participating in local seafood chains, including fishers, seafood traders, processors, and even chefs; many of who were also active members of local Fishing Cooperatives. While showcasing their cooking skills using their own fresh catches, the panelists told their unique stories, which not only exemplified their intimate connections to local resources, livelihood traditions, and associated meanings but also their hopes and fears for the future.

LUNCH (12:30 – 13:30)

PLENARY SESSION #6 – Adjusting the JUSTICE Lens

Thursday, May 12th, 13:30 – 15:30

Location: Zoom

Chair/Moderator: Mohammad Mahmudul Islam

Small-scale fisheries have increasingly drawn attention as a sector that deserves justice and equity in the face of multifaceted deprivation and vulnerabilities. However, to strive towards a more equitable and just space, it is important to understand the current situation and explore the kinds of injustice and inequity that small-scale fishers face on a regular basis across different contexts. This session, composed of three presentations, is organized to showcase multiple cases of risks and injustices that need to be addressed. We will explore how blue economic growth leads to displacement, dispossession, exclusion, ocean grabbing and impacts the livelihoods of coastal smallholders, and of small-scale fishers in various parts of the world. However, the injustice is not only limited only to water. In the absence of any right to the land held by small-scale fishers led to inequitable distribution of relief assistance from NGOs, eviction, severe indebtedness, and loss of livelihood, all of which contribute to further marginalization of many fishers. The cases of inequality and injustice become more aggravated in the COVID-19 pandemic time. Particularly, the injustice resulted from the state policies/response to COVID-19 impact small-scale actors within the fisheries sector more profoundly. The session aims at exploring how different forms of injustice prevail in small-scale fisheries and how adjusting the focuses of justice lens could facilitate small-scale fishers as an equal and just partner in ocean development plans.

Speakers:

- Md. Sazedul Hoque, Patuakhali Science and Technology University, Bangladesh:
 - Knowledge, practice, and economic impacts of COVID-19 on small-scale coastal fishing communities in Bangladesh: Policy recommendations for improved livelihoods
- Shio Segi, Konan Women's University, Japan:

- How does the land policy intersect with disaster recovery for small-scale fishers?
- Jewel Das, Leibniz Centre for Tropical Marine Research (ZMT), Bremen, Germany:
 - Blue growth and Small-scale Fisheries in Bangladesh: Leaving who behind?

The plenary speakers discussed topics such as the effects of the COVID-19 pandemic on the income of fishers in Bangladesh, how the fishers received limited or no support, and how better knowledge of these impacts can be used to reduce income insecurity in the future. Supports such as improving local health services, which could include registering fishers with a health insurance plan and regular check-ups, could help reduce the negative impacts of a health crisis such as COVID-19. Support for coastal fishers could also be provided through means of food supplies or funds, provided in a sufficient, safe, dignified and equitable way. Shio Segi discussed the implications of disaster recovery for small-scale fisheries and how land policy intersects with disaster recovery for small-scale fisheries. He concluded that land security of small-scale fisheries should be a priority in the disaster recovery process and policy makers need to know who they are protecting and who they are supposed to protect with the work they do. Jewel Das presented work on how to leave no one behind when it comes to Blue Growth in small-scale fisheries and what questions we should be asking to ensure an equitable inclusion of small-scale fisheries in the Blue Growth plan in Bangladesh.

Take home messages:

- Adjusting the justice lens must include the voices of small-scale fishers as equal and just partners in ocean development plans;
- COVID-19 pandemic situation is like crisis within the crisis. Fishing communities are already burdened with crisis, COVID-19 further aggravates it;
- Policymakers are not prioritizing or even not doing just consideration to the long-term sustainability of coastal communities and the environment;
- Land security of small-scale fisheries should be priority in the disaster recovery process
- The evidence from coastal Bangladesh is already showing the developmental activities of the Blue Economy affective coastal communities' livelihood options; and
- Concern has been raised about what scientists are doing in dealing with all the vulnerabilities and shocks that small-scale fisheries face worldwide. We are producing excellent pieces of literature and writing about social injustices. But where is the end of them? Should we stop since the solutions that scientists are providing are not working? The panelists acknowledged that concern and argued that as scholars, we could suggest the governing authority or whoever holds power in making policies and execution. In such a case, power imbalance plays a significant negative role. As scientists, we can keep suggesting the best possible solutions, considering the interests of different actor groups.

BREAK (15:30 – 16:00)

PARALLEL SESSION #5

Time	Session title
16:00 – 17:30	Parallel Session #5
	#5.1: Introducing the “Dried Fish Matters” e-book #5.2: Opportunities and benefits for application of participatory fisheries governance in different countries #5.3: Adjusting the Food Lens (II) – Contributed papers #5.4: Adjusting the Justice Lens – Contributed papers

Parallel session #5.1: Introducing the “Dried Fish Matters” e-book

Organized by: Eric Thrift, Dried Fish Matters, University of Manitoba, Canada

Synopsis:

The Dried Fish Matters partnership, funded by the Social Sciences and Humanities Research Council of Canada, brings together a network of interdisciplinary research teams in six countries to study the economy of dried fish in South and Southeast Asia. This session will be a pre-launch event for our partnership's eponymous e-book, which provides a commentary on why dried fish matters to us as researchers, to the communities in which dried fish is produced and consumed, and to the gastronomic heritage of humanity. The Dried Fish Matters E-book will be launched formally on June 18, to coincide with the global observance of Sustainable Gastronomy Day. Our volume celebrates the cultural value of dried fish as food, while promoting the idea that dried fish can contribute to sustainable development according to its economic, social, and environmental dimensions. The session will include readings from several of the chapters, pre-recorded by the contributing authors, with introductions and thematic commentary by the volume editors. A selection of these chapters will be made available for early download to coincide with the pre-launch event. The formal presentations will be followed by a virtual reception and Q&A hosted by the editors.

Speakers

- Madu GALAPPATHTHI, University of Waterloo, Canada
- Eric THRIFT, University of Manitoba, Canada
- Ratana CHUENPAGDEE, Memorial University/TBTI, Canada
- Md Mahfuzar RAHMAN, University of Manitoba, Canada
- Raktima GHOSH, Indian Institute for Technology Kharagpur, India
- Derek JOHNSON, University of Manitoba, Canada

- Wae Win KHAING, University of Manitoba, Canada
- Aklima AKTER, Bangladesh

Parallel session #5.2: Opportunities and benefits for application of participatory fisheries governance in Asia-Pacific

Organized by: Rayhan Dudayev, Blue Ventures, Indonesia and Indah Rufiati, Blue Ventures, Indonesia

Synopsis:

Fisheries policy has traditionally focused on maximizing national fisheries production, profitability, and job creation, employing various tools including financial subsidies, incentives and management to achieve these aims. Centralized approaches have long dominated the discourse, but these have several shortcomings that can hamper their implementation at a local level. In response, coastal states are increasingly devolving responsibility for fisheries management to regional, provincial or local -level institutions. Drawing on experiences from three countries in Southeast Asia and Pacific, this side event will provide a community perspective on experiences and best practice in decentralization of fisheries management. Local organizations supporting participatory, fisher-led fisheries management will discuss benefits experienced by fishers and other stakeholders, and highlight recommendations for coastal states developing decentralized approaches to fisheries management and governance.

The session will share best practices and experiences in participatory fisheries management and governance from three Asia-Pacific nations.

Specific learning objectives

- Understanding locally led fisheries management and governance, and it matters.
- Sharing practical experiences of nearshore locally led fisheries management and governance and the best practices in community empowerment for participatory fisheries governance application
- Sharing experiences of the economic, ecological, and social benefits of participatory governance.
- Identifying policy recommendations for participatory fisheries governance in different countries.

Speakers:

- Aris BUDIARTO, Directorate of fisheries resources of Ministry of Marine Affairs and Fisheries of Indonesia, Indonesia
- Kristovel PAINO, Jaring Advokasi Pengelolaan Sumber Daya Alam (JAPESDA), Indonesia
- Dinna L. UMENGAN, Executive Director Tambuyog Development Centre, Philippines
- Alifereti TAWAKE, LMMA Network International Trust, Fiji

Parallel session #5.3: Adjusting the Food Lens (II) – Contributed papers

Chair: Kate Barclay

Contributions from individual papers.

Speaker	Title
Shinichiro KAKUMA	Satoumi Concept: A new relation between humans and coastal seas
Kate BARCLAY	Can food localism save small scale fisheries in Australia? Opportunities and constraints
Alexander TILLEY	A randomized controlled trial to test the effects of nearshore fish aggregating devices and SBC activities promoting fish consumption in Timor-Leste
Menake GAMMANPILA	Trophic ecology of fish communities in the Brush Park fishery of Negombo Estuary, Sri Lanka, and strategies for co-management
Md. Shafiul ALAM	Impacts of COVID-19 outbreaks on socio-ecological systems of the small-scale fisheries in Sundarban Mangrove forest, Bangladesh

Parallel session #5.4: Adjusting the Justice Lens (II) – Contributed papers

Chair: Mohammad Mahmudul Islam

Contributions from individual papers.

Speaker	Title
Mohammad Mahmudul ISLAM	A typology of responses to vulnerabilities of global small-scale fisheries
Sazedul HOQUE	Occupational safety and health status of sea-going fishers: Concerns for small-scale fishers in the coastal area of Bangladesh
Alice Joan FERRER	Mariculture parks in the Philippines push small-scale fishers out of, or far into, the waters
Emilie LITSINGER	Building fisheries resilience through multispecies management
Sisir Kanta PRADHAN	Reimagining value in dried fish value chain as wellbeing by applying SES lens

17:45 – 19:15

PARALLEL SESSION #6

Time	Session title
17:45 – 19:15	Parallel Session #6
	<p>#6.1: Integrated tools and approaches for making community-based EAFM Implementation more sustainable, inclusive and equitable</p> <p>#6.2: Illuminating Hidden Harvest: The contribution of small-scale fisheries to sustainable development in the Asia-Pacific region</p> <p>#6.3: Adjusting the Financial Lens – Contributed papers</p>

Parallel session #6.1: Integrated tools and approaches for making community-based EAFM implementation more sustainable, inclusive, and equitable

Organized by: Elin Torell, University of Rhode Island Coastal Resources Center, USA; Andre Uychiaoco, URI Fish Right Program, Philippines; Austin Humphries, University of Rhode Island, USA

Facilitated by: Elin Torell

Synopsis:

The session will be comprised of four 10-minute presentations followed by a facilitated discussion that will involve 2-3 respondents and the audience.

The four presentations will be centered around how to make community-based ecosystem approaches to fisheries management more sustainable, inclusive, and equitable.

Speaker	Title
Andre UYCHIAOCO	Implementation of an IUU Fishing Tool aims to increase compliance and make a dent in the fight against IUU fishing
Dawn KOTOWICZ	Fisheries Environmental Stewardship Model highlights the contribution of moral obligation in driving fisheries behaviors
Austin HUMPHRIES	Integrating ecological, economic, and socio-cultural data for more impactful EAFM decision making
Lauren JOSEPHS and Alfredo LAZARTE	A gender inclusive approach to EAFM strengthens the depth and reach of ecological and socio-economic impacts

The presentations will provide an overview of each approach and tool. They will also outline research methods and results from their application in the Philippines, Indonesia, Melanesia, and Micronesia. The respondents will include regional stakeholders, such as the Pacific Locally Managed Marine Area Network (represented by Alifereti Tawake), the University of Philippines Marine Science Institute (TBD), and the Path Foundation Philippines (represented by Joan Castro),

who will draw parallels to their own on-the-ground work and make connections to regional efforts and strategies.

Speakers

- Elin TORELL, University of Rhode Island Coastal Resources Center, USA
- Andre UYCHIAOCO, URI Fish Right Program, Philippines
- Austin HUMPHRIES, University of Rhode Island, USA
- Joan CASTRO, Path Foundation Philippines, Philippines
- Alfredo LAZARTE, Path Foundation Philippines, Philippines
- Dawn KOTOWICZ, University of Rhode Island Coastal Resources Center, USA
- Lauren JOSEPHS, University of Rhode Island Coastal Resources Center, USA
- Alifereti TAWAKE, Locally Managed Marine Area Network, Fiji

Parallel session #6.2: Illuminating Hidden Harvests: the contribution of small-scale fisheries to sustainable development in the Asia-Pacific region

Organized by: FAO, Italy, in collaboration with Duke University and WorldFish

Chair: Simon Funge-Smith, FAO, Italy

Synopsis:

As a contribution to the celebrations of the International Year of Artisanal Fisheries and Aquaculture, this session will present on the Illuminating Hidden Harvests. This is a global initiative of FAO, Duke University, and WorldFish to generate and disseminate new evidence about the benefits, interactions and impacts of small-scale fisheries to inform policy and practice.

The initiative helps to inform all levels of policy-making processes and contributes to empowering fishing communities, their organizations, and advocates to make a strong case for productive, sustainable and equitable small-scale fisheries.

In this way, the IHH initiative supports the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication and progress towards the UN's Sustainable Development Goals.

A key output of the IHH initiative is a major report, which provides a snapshot of the diverse contributions of small-scale fisheries globally. The report—which draws on diverse data sources, 58 country case studies, and 104 government questionnaires—represents a novel, multidisciplinary approach to assess and understand small-scale fisheries.

The session will introduce the approach and share findings with a regional focus on Asia and the Pacific. It will also share the experience of preparing country case studies for the report, as well as from the overall study preparation.

IHH team members, country case study authors, thematic study authors and members of the Technical Advisory Group will participate in the session which will allow for discussion on the approach and results with attendees.

Speakers:

- Maria del Mar Mancha-Cisneros, Sustainable Seafood Program Manager at Scripps Institution of Oceanography, University of California San Diego, USA
- Ilham Iljam, Marine and Fisheries Polytechnic of Jembrana, Bali / Ministry of Marine Affairs and Fisheries, Republic of Indonesia
- Michael Fabinyi, University of Technology Sydney, Australia / IHH Technical Advisory Group member

Parallel session #6.3: Adjusting the Financial Lens – Contributed papers

Chair: Yinji Li & Ratana Chuenpagdee

Contributions from individual papers.

Speaker	Title
Carmela Therese NOVILLA	Initial experiences and outlook in implementing a cooperative system for seaweed farming in selected sites in the Philippines
Clement BRESSON	Supporting Indigenous small-scale seafood enterprises in Australia: lessons from a case study in Maningrida, Northern Territory
Tek GURUNG	The COVID-19 impact on fisheries value chain in Nepal
Yinji LI & Ratana CHUENPAGDEE	Steps to strengthen financial security for small-scale fisheries

19:45 – 20:15

FINAL SUMMARY AND CLOSING REMARKS

ABSTRACTS – CONTRIBUTED PAPERS

Impacts of COVID-19 outbreaks on socio-ecological systems of the small-scale fisheries in Sundarban Mangrove forest, Bangladesh

Alam, Md. Shafiul, Department of Geography and Environmental Studies, University of Rajshahi, Bangladesh, shafiul.geo@gmail.com

The current pandemic of the novel coronavirus (COVID-19) has enormous global implications in public health, economics, food security, and society, including divesting effects on developing countries like Bangladesh, which lack the essential resources to cope with this catastrophe. Sundarban, the largest Mangrove forest globally, conquers about 6017 km² in Bangladesh, consisting of rich biodiversity and a novel ecosystem of great ecological value offering multiple ecosystem elements and services. COVID-19 in Bangladesh has been studied for its probable effects on a wide range of concerns; however, research into the challenges and food securities to aquatic resources and dependent communities has been limited. Accordingly, this study aims to analyze the Impacts of COVID-19 on Sundarban's socio-ecological systems of the small-scale fisheries and fill a knowledge void by connecting COVID-19's impact on the small-scale fisheries with its dependent livelihood. Primary fieldwork and secondary data analysis were both used to conduct the research. Secondary data examined dynamics of COVID-19 outbreaks and nexus between small-scale fisheries, aquatic food production and the market were also looked at simultaneously. Public opinion was collected through Focus Group Discussion (FGD) to show how the aquatic food chain, small-scale fisheries, and dependent communities were affected. The key impacting factors were mangrove destruction, illicit extraction, increased salinization, natural calamities, widespread household consumption of mangrove wood, Shortage of manpower, transportation abstraction, food supply complexity, weak value chain, and low consumer demand, and increasing commodity costs. The study's findings also revealed how the social-ecological dynamics of the Sundarbans mangrove forest hinder the dependent small-scale fishers community. The mangrove-dependent fishers used a variety of approaches to deal with the pandemic situation, including creating collaborations, breaching fisheries management laws and regulations, local migration, giving women more responsibility, and exchanging fishing knowledge and information. Finally, this study proposes ways to achieve long-term sustainability in small-scale fisheries from the adverse effect of the COVID-19 pandemic and socio-ecological dynamics.

Small-Scale Fisheries in the Blue Economy: Review of Scholarly Papers and Multilateral Documents

Ayilu, Raymond, Faculty of Arts and Social Sciences, University of Technology Sydney, Australia

Fabinyi, Michael, University of Technology Sydney

Barclay, Kate, University of Technology Sydney

The blue economy concept has been discussed at high-level policy fora since the 2012 United Nations Conference on Sustainable Development. Simultaneously, a burgeoning body of literature on the blue economy is emerging from academia. This scoping analysis uses data from journal articles and policy documents to provide a preliminary understanding of how small-scale fisheries in the blue economy are framed by academics and policymakers. We found that high-level policies include ideal proposals for fisheries and other ocean sectors, but in ways that suit industrial-scale fisheries and aquaculture more than small-scale fisheries. Academics highlight emerging uncertainties for small-scale fisheries. The review points out differences between small-scale and industrial-scale fisheries, particularly the social aspects that could make small-scale fisheries more suitable for achieving some of the stated goals of a blue economy. We conclude that, while the blue economy in its broadest sense is still a work in progress, it should be guided by clearly articulated goals in terms of governance that supports small-scale fisheries.

Can food localism save small scale fisheries in Australia? Opportunities and constraints

Barclay, Kate, University of Technology Sydney, kate.barclay@uts.edu.au
Kirsten Abernethy, Sea Change Consulting, kirsten.abernethy@gmail.com

Abstract

Food localism has been a growing movement for some years. The desire to source food locally can be tied to concerns about: supporting regional and rural economies; celebrating local food cultures; reducing food miles; trust in local food safety and quality systems; and supporting environmentally sustainable production methods. At the same time as food localism has been growing as an opportunity for small scale fisheries in Australia, however, other governance developments regarding coastal resource access and market conditions have limited consumers' access to local seafood. This paper draws on several research projects conducted from 2014-2019 on the social and economic contributions of fisheries to coastal communities in south eastern Australia. Pursuing coastal conservation through preventing fishing in marine protected areas has reduced fishing grounds, as has a policy to support recreational fishing through banning professional fishing in favoured locations. A lack of public awareness about the environmental sustainability of professional fishing, and strong public discourses by environmental movements and recreational fishing lobby groups against professional fishing means the fishing industry is in a vulnerable political position. Moreover, existing logistics and market channels mean chefs and consumers who want to source local seafood may not easily do so. The paper presents case study material about the obstacles to sourcing local seafood in south eastern Australia, as well as solutions being implemented by some businesses, and further ideas from the research about improving the availability of produce from local small-scale fisheries.

Supporting Indigenous small-scale seafood enterprises in Australia: lessons from a case study in Maningrida, Northern Territory

Bresson, Clement, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra, Australian Capital Territory, Australia, clement.bresson@anu.edu.au

Wilton, Don, Traditional Aboriginal Owner and fisher, Maningrida Community, Northern Territory, Australia

There is strong interest from coastal Indigenous communities of Northern Australia, and in particular of the Northern Territory (NT), to develop locally run seafood enterprises that directly benefit Traditional Owners to generate financial, social and cultural outcomes. These aspirations occur in the context of Aboriginal 'saltwater people' – who have secured formal ownership of the inter-tidal areas of 84% of the NT coastline. This theoretically gives them significant leverage to participate in inshore commercial fisheries, in particular mud crab, barramundi or trepang fisheries. Most operators in these commercial fisheries are relatively large and based in Darwin. In contrast, many saltwater people aspire to run small-scale seafood enterprises based on their homelands, linking customary practices and local economic development. How can these visions for SSF enterprises be realised? To address this question, we use a case study approach to consider the business model of a small-scale seafood enterprise led by group of senior Traditional Owners from the Maningrida region of the NT, through local Bawinanga Aboriginal Corporation. We investigate the support that is required to realise aspirations and regular long term SSF enterprise and how this support may be best delivered from a local Aboriginal perspective. We argue there is a need for a variety of support strategies, both at the local and regional level to support small scale commercial Aboriginal fishing enterprises in the NT. Consistent with the literature on community-based enterprises, the research also illustrates the crucial role of partnerships in enabling seafood enterprise development. The findings have implications for both economic development and fisheries management policy framework.

Opportunities to Advance Small Scale Fisheries Through Local Government Devolution in the Philippine

Calvan, Dennis, Rare, dcalvan@rare.org
Candeze Mongaya, Rare, cmongaya@rare.org;
Angeli Joyce Barafon, Rare, abarafon@rare.org

The Philippine Supreme Court ruled out in 2018 that local government units (LGUs) will have an increased Internal Revenue Allotment (IRA) from national taxes starting in 2022. This provides opportunities for small-scale fisheries, which for the longest time has been plagued with high poverty incidence and decreasing production, to be given substantial support by LGUs. However, policy and institutional gaps need to be addressed to ensure that available funding will not go down the drain. This paper will provide policy analysis to highlight that improving local governance are essential in

sustainably managing our coastal fisheries. It will describe the budgeting process at the local level and will cite an example of a coastal municipality that has successfully allocated budget for small scale fisheries. Aside from the policy gaps and recommendations, it intends to show how artisanal fisherfolk themselves can demand to duty bearers such as the national and local governments the needed support as provided for in various democratic spaces made available to them such as their participation to Municipal/City Fisheries and Aquatic Resources Management Councils (M/CFARMCs) and local development councils.

Solar fishing boat: A groundbreaking initiative for small scale fisheries & blue revolution.

Das, Rakhi, Sage University, Bhopal, India, rakhi.d@sageuniversity.edu.in
Dr. Shriparna Saxena, Professor, Aquaculture, Sage University, Bhopal, India, shriparna.s@sageuniversity.edu.in

Sea is a valuable asset for our human beings. Blue revolution & small scale fisheries are inextricably linked. Continuously increasing the rate of pollution in marine water bodies destroy our valuable fishery resource indiscriminately. The Addition of emerging technologies in fishing operations could manage the risk factor in fishing operations. Utilizing solar fishing boats for fish operations can lower the pollution rate in the sea & upgrade the lifestyle of the fishing community. Taking a great step by the government with private sector & State wise fund endorsement on this issue may reduce the loss in small scale fisheries & save our natural resources from being extinct.

A study on the current status of glass eel catch

Eun_Young, Baek, Fisheries Outlook Centre, Korea Marine Institute, eybaek@kmi.re.kr

Eel farming is the second largest among fish farming by values in South Korea. The significant characteristics of eel farming is that it is totally dependent on wild fishing of glass eels. Thus, the supply and demand of eels farming depends on the catch of glass eels. After the European eel, *Anguilla Anguilla*, was listed in CITES Appendix II in 2009 and it has been banned from international trade in 2013, *Anguilla japonica* and *Anguilla rostrata* were listed on the IUCN's red list as an endangered species in June and November 2014, respectively. Therefore, management of glass eels fisheries is important for sustainable eel farming until artificial reproduction of the glass eels is achieved and industrialized. In this study, it will be examined on current state of distribution and related politics focusing on glass eels, which is the first stage of eel farming. Based on these, management development plan of glass eels fisheries will be suggested.

Mariculture Parks in the Philippines Push Small-Scale Fishers Out of, or Far into, the Waters

Ferrer, Alice Joan, University of the Philippines Los Baños, Laguna, Philippines, agferrer@upv.edu.ph
H.A. Francisco, Economy and Environment Partnership for Southeast Asia, University of Economics, Ho Chi Minh City, Vietnam, harocena@yahoo.com.sg
J.C. Hopanda, University of the Philippines Visayas Foundation, Inc., Miagao, Iloilo, Philippines, jinkyhopanda18@gmail.com
B.M.M. Carmelita, University of the Philippines Visayas Foundation, Inc., Miagao, Iloilo, Philippines, benzcarmelita@yahoo.com
C.D. Predo, University of the Philippines Los Baños, Laguna, Philippines, cdpredo@up.edu.ph

This paper focuses on distributive and social (in)justices in the context of small-scale fisheries in Balingasag Mariculture Park, Philippines. We revisited data collected in 2015 using a justice lens. The case of Balingasag Mariculture Park, established in 2007, is an example of how mapping, zoning, fixing, or allocating space for different resource users can create injustices and inequities due to poor implementation of regulatory measures and the non-engagement of fishers from preparatory to implementation stages. In particular, local fishers catching various wild fish species were replaced in their former fishing grounds by rich and more powerful groups of fish farmers growing one to two fish species. The situation offers opportunities for improvement and guidance of changes to be made in Balingasag Mariculture Park in particular, and for the country's mariculture park program in general. Establishing avenues for interaction between fishers and the Management Board in all stages can improve the quality of interaction and, thereby, governability.

Trophic Ecology of Fish Communities in the Brush Park Fishery of Negombo Estuary, Sri Lanka, and Strategies for Co-management

Gammanpila, Menake, Department of Zoology and Environmental Management, University of Kelaniya, Sri Lanka, menakegammanpila@gmail.com
Professor Upali S. Amarasinghe, Department of Zoology and Environmental Management, University of Kelaniya, Sri Lanka zoousa@kln.ac.lk
Professor M. Jayantha S. Wijeyaratne, Department of Zoology and Environmental Management, University of Kelaniya, Sri Lanka, zoomjs@kln.ac.lk

Brush park fishery or locally called "mas athu" in Negombo estuary, Sri Lanka is a form of traditional small-scale fishing practice, which relies on fishes attracted to artificial woody fish aggregation devices constructed in shallow regions of the estuary. In the present study, an attempt was made to investigate whether coexistence of constituent species in these brush parks exhibited morphological variations in relation to their dietary habits, and whether such fish communities attracted to brush parks

could be grouped into divergence trophic guilds and empirically verify adoption of fishers' traditional ecological knowledge (TEK) accumulated over generations through experience for the sustainable management of brush park fisheries.

Seventeen morphological attributes and diet composition of fish species were analyzed in terms of relative bio volume of 11 broader taxonomic groups. Levin's index of niche breadth was calculated to define relative level of diet specialization. Data were collected from 245 brush parks with a view to empirically verifying TEK of brush park fishers. The institutional robustness of the community-based management system was assessed for compliance with Ostrom's modified design principles.

Principal component analysis of morphometric attributes and dietary habits indicated that the species in the higher trophic levels were characterized by slender, long body shapes and those occupied lower trophic levels were predominantly laterally compressed with deep body shapes showing predictive power of ecomorphological correlates with diets of fish species. Based on the mean composition of food items, they could be grouped into 8 trophic guilds. In each trophic guild, constituent species represented different trophic indices indicating trophic divergence and less inter-specific competition. It was evident that the degree of community-based fisheries management that exists in the brush park fishery is not sufficient for governance of the dilemma of common pool resources (CPR). Since community rights of brush park fishers were not strong enough to make responsible fisheries management, co-management regimes that empower local communities to contribute to management decisions are essentially needed for the sustainability of the brush park fishery and exploitation of allied resources in the estuary.

Survey of Small-Scale Fishing Households in Japan: Livelihoods, COVID19, and Fishery Law Reform

Ganseforth, Sonja, Deutsches Institut für Japanstudien, ganseforth@dijtokyo.org
Mitsutaku Makino, The University of Tokyo,
Raphael Ramon, UN Ocean Decades ECOPS,
Aoi Sugimoto, FRA

This paper presents findings from a nation-wide survey among Japanese small-scale fishers conducted in late 2021 with the support of the National Association of Fishery Cooperatives (JF Zengyoren). The survey comprised questions concerning the livelihoods of small-scale fishing households, self-assessments of their economic situation and future prospects, their social capital and networks, perceived challenges and coping strategies, as well as attitudes towards fisheries in general. The survey also inquired how the current resource management regime as well as the implications of the 2018 reform of the Fishery Law are evaluated by small-scale fishers in Japan.

The findings from 740 responses suggest a strong sense of crisis and insecurity about the current situation among coastal fishers, with a pessimistic outlook for the future contrasting with nostalgic views of the past. Economic factors such as high input costs and low producer prices constitute a major problem for fishers, and the Covid-19 pandemic has exacerbated already existing problems in seafood value chains in Japan, highlighting the need for better value creation in order to increase producer prices.

Knowledge of the recent Fishery Law reform is very low, and expectations among those knowledgeable of the reform are remarkably negative. However, there seems to be a strong awareness of the risks of climate change and environmental destruction, and a sense of urgency and need for better resource governance, indicating a great opportunity to include fishers in cooperative conservation efforts.

Vulnerability and social justice among fishing households headed by women in Batticaloa, Sri Lanka

García-Lorenzo, Iria, Department of Applied Economics, ERENEA, ECOBAS, University of Vigo, Spain, iriagarcia@uvigo.es

Manuel Varela-Lafuente, Department of Applied Economics, ERENEA, ECOBAS, University of Vigo, Spain, mmvarela@uvigo.es

Ashan, Dewan, Department of Sociology, Environmental and Business Economics and Co-head, Danish Center for Risk and Safety Management, University of Southern Denmark, Denmark, dah@sam.sdu.dk

In Sri Lanka, women play an important role in the small scale- fisheries value chain. Batticaloa, in the east coast, had to witness the impacts of war (1983-2009) and the 2004 Indian Ocean Tsunami. Prior to war and tsunami, many people including women were engaged in fisheries related activities for their livelihood. With the return of normalcy, Batticaloa's fish production showed substantial growth and became increasingly competitive. Drawing on the analytical framework from the fisheries governance literature, this chapter aims to unpack female fishers' vulnerabilities and thus identify how social justice in small-scale fisheries related activities is hindered. Stories of three female fishers illustrate how the tsunami and the post-war situation, through different governance orders have exacerbated pre-existing and new vulnerabilities hence challenge social justice. These women lack access to appropriate resources due to their limited power and agency to negotiate and solve their problems and create new possibilities. Interactive governance is basically gendered and happens to a limited extent for women fishers.

Reviewing consumer concerns and producer practices on packing and labelling of dried fish to improve the dried fish market in Sri Lanka

Gunawardana, M.U.N., Department of Agricultural Economics, Faculty of Agriculture, University of Ruhuna, Sri Lanka udaninayanathara2@gmail.com

De Silva, W.N., Department of Agricultural Economics, Faculty of Agriculture, University of Ruhuna, Sri Lanka , nilanthade@agecon.ruh.ac.lk

Thakshila, R.P.A.D., Department of Agricultural Economics, Faculty of Agriculture, University of Ruhuna, Sri Lanka dilinitakshila1@gmail.com

Food packaging is a key element in ensuring and communicating food safety and quality. Producers of dried fish in Sri Lanka have become incapable of marketing their products due to quality deficiencies and safety risks. Packing was identified as the least followed quality practice among producers. Therefore, our focus is on reviewing consumer concerns and producer practices on packaging and labeling of dried fish as a quality practice. Ten producers and 180 consumers of dried fish of southern Sri Lanka were interviewed. The results show that all the producers follow the standard practices to ensure the quality of organoleptic properties. In wholesale trading of dried fish, only 5 producers follow the standard practices given by Sri Lanka standard Institute in packaging while none of them practice the standard practices in retail trading. Though product labelling is compulsory in quality standards, producers have not developed labels for dried fish. Conversely, analysis of consumer's attitude towards packaging of dried fish shows that majority of 56 consumers consider that packaged and labeled dried fish are in better quality than non-packed stuff. Moreover, 67 consumers know that vacuum packaging contains the highest quality. Inversely, 46 consumers were unable to differentiate the quality of packaging. Hence the study concludes that consumers consider packed and labelled dried fish is a quality product; producers should be encouraged to use standardized packaging to expand the market potential; specially focusing to vacuum packaging.

Gendered engagement in Dried-fish Processing Industry in Sri Lanka

Gunawardana, Udani, Department of Agricultural Economics, Faculty of Agriculture, University of Ruhuna, Sri Lanka, udaninayanathara2@gmail.com
W N De Silva, Department of Agricultural Economics, Faculty of Agriculture, University of Ruhuna, Sri Lanka, nilanthade@agecon.ruh.ac.lk

Dried fish processing is a reliable alternative income source to minimize the uncertainty of fishing income. Hence, women in fishing communities are mainly occupying in fish processing activities as a supplementary income source. This study focuses to find out the gendered engagement in dried fish processing in southern Sri Lanka. Randomly selected 60 female fish processors have been interviewed using a pre-tested structured questionnaire survey along with focus group and key informant discussions. Results reveal that 34% women are able to build up emergency funds while 32% are able to meet their additional expenses from dried fish processing industry. In the process of dried fish making 71.4% of the process is mainly handled by female. Though the females' engagement is dominant in fish processing activities, trading and marketing is mainly handled by the males. Therefore, men have received more opportunities to build up linkages with outside markets. However, results show that women's involvement has been increasing recently as 24 women have able to sell their products in various markets. So that, they have encountered various opportunities for selling their products in high prices, explore new market areas and finding training programs. Hence, women should be encouraged and facilitated to do value additions and to access new technology in order to improve dried fish processing as a business.

The COVID-19 impact on fisheries value chain in Nepal

Gurung, Tek, Agriculture and Forestry University, Nepal, tek_fisheries@hotmail.com

The outbreak of the COVID-19 pandemic started to spread since December 2019 causing the death of millions of people worldwide. To prevent the loss of human life many countries imposed travel and gathering restrictions along with mandatory social distancing rules by declaring lockdown. From 24 March 2020, Nepal declared lockdown with travel restrictions. Here, we present an assessment on the impact of COVID-19 from the very beginning of the lockdown in March until August 2020 on the fisheries value chain in Nepal. The data were collected from secondary sources, and the primary data was generated through pre-structured wireless interviews and e-surveys. The e-survey covered fish farmers, traders, processors, government officials and fish hatchery operators involved in trout and carps seed producing value chain. Although COVID-19 does not affect fish, but many fish farms were impacted in terms of market access, transportation and border restrictions. The Covid-19 has hit hard with huge impact on fisheries. To overcome the problems of Covid-19 like pandemics, promotion of door to door 'live-fish supply system' through fish cooperative, by popularizing the advantages of fish consumption on health in radio, TV, toll-free helpline, electronic portal of producer organizations, linkage with demand, supply and prices of the products might prevail opportunities for all value chain components. For resilience against such pandemics, a compact approach of small-scale fishers, producers, hatchery, market, feed, agro-vet, and mechanization should be prioritized.

The current Status and improvement plan of oyster seed production in South Korea: Focused on Nulcha Village in Busan

Ha, Hyesoo, Korea Marine Institute, hyesoo8712@kmi.re.kr

The oyster production of South Korea is about 300 thousand tons (live weight including shell). About 27 million oyster seeding lines are needed to produce these oysters, and most (90%) of them are supplied through natural seed collection. The amount of oyster seeds from Nulcha village in Busan accounts for approximately 30% of its total supply. In particular, 230 fishermen in this village are engaged in the production of oyster seeds, such as oyster seed collection from wild, tempering and reassembling customized to oyster farmers. Recently, however, climate change and regional development plan pose a serious threat to this village, which is significantly important for oyster farming. In other words, there is a great potential for an imbalance in the supply and demand of oyster seeds. Despite the importance of oyster seeds, few studies on it are have been conducted so far. Thus, the current status and improvement plans of oyster seed production focused on Nulcha village will be examined in this study.

Occupational safety and health status of sea-going fishers: Concerns for small-scale fishers in the coastal area of Bangladesh

Hoque, Md. Sazedul, Department of Fisheries Technology, Patuakhali Science and Technology University, Dumki, Bangladesh, sazedul.fst@pstu.ac.bd

Kate Pike, Associate Professor Emeritus of Solent University, Southampton, UK
Despena Andrioti Bygvraa, Teaching Coordinator Centre of Maritime Health and Society, University of Southern Denmark

Muhammad Mahmudul Hasan, Department of Fisheries Technology, Patuakhali Science and Technology University, Dumki, Bangladesh

Asma Akter, Department of Fisheries Technology, Patuakhali Science and Technology University, Dumki, Bangladesh

Darren Mitchell, 4FISH Safety Foundation, Kapiti Coast, New Zealand

Eric Holliday, 4FISH Safety Foundation, Kapiti Coast, New Zealand

In Bangladesh fishing, particularly artisanal small-scale sea fishing has become one of the most dangerous occupations in the country, where safety standards and facilities are poor, and safety training is virtually non-existent. The study purposively determined the sea-fishing socio-demography, and occupational safety and health hazards faced by small-scale fishers in the coastal area of Bangladesh. The results discussed focus on two survey data sets were carried out in the coastal villages of Mahipur and Alipur of Patuakhali in 2018 and Pathorghata of Barguna in 2019 by the Patuakhali Science and Technology University, Bangladesh. Our results provided the original base line data on the natural, social and health, and anthropogenic safety hazards facing artisanal fishers encountered at sea, as well as the socio-economic impacts on their related communities. The study identified cyclonic storms in high seas as the major natural hazards due to which large numbers of fishermen perish at sea every year. Data about the fishing vessels and fishing practices also identified several areas where safety should be of concern. Significantly, the studies also explore the fisher's own suggestions and recommendations to create a better safety environment on board. Whilst this study was not extensive, the data points to key safety recommendations that can be made to the Bangladesh government and to boat owners and fishers. These recommendations could ultimately help to save lives and reduce the devastating impact on the associated families and communities when a fisher and main income earner's life is lost at sea.

Constraints to continue eco-labelling: Case study from coastal small-scale fisheries in Kochi, Japan

Hori, Mina, Kochi Prefecture Fisheries Promotion Department Muroto Fisheries Guidance Center, mina@kochi-u.ac.jp

Hazuki Shimanouchi shima_0305@icloud.com

Toshiyuki Ookawa, Kochi Prefecture Fisheries Promotion Department Muroto Fisheries Guidance Center, toshiyuki_ookawa@ken3.pref.kochi.lg.jp

Eco-labelling has been implemented widely to promote sustainable fisheries, however in Japan, certified number of capture fisheries are still limited. To grasp the current situation of individual fisheries who holds the Marine Eco-Label Japan (MEL) eco-label, 6 fisheries targeting 4 species in Kochi prefecture were studied. Information regarding how fishers decided to introduce eco-labelling to their fisheries, procedure of selling eco-labeled fish, effect of eco-labelling, roles of prefectural office and fisheries cooperatives, and price data of each species were collected. Detailed information was collected through questionnaires and interviews to fisheries cooperatives, prefectural office, and supermarkets from September to December 2020. Prefectural office expected higher fish price through eco-labelling also promotion for consumers through Olympic Games. However, after each fishery was certified, intermediaries of 2 fish species did not apply for the certification, therefore the fish was sold without labelling. 1 species got labeled and sold, however the unit price did not increase after the labelling. Prefecture office and fisheries cooperatives tried to promote by advertisement, however distributors and retailers did not apply, thus labeled fish were not able to be sold till the end of the distribution channel. The fact that unit price of fish did not increase after the labelling lead intermediaries and distributors hesitate to pay the cost for certification. As a result, fisheries cooperatives gave up labelling the fish even it was qualified to be labeled. Coordination to involve intermediaries, distributors and retailers are necessarily for the better implementation of the MEL eco-labelling.

Implementing Ecosystem Approach to Fishery Management (EAFM) in Gulf of Mottama, Myanmar

Hte, Wint, Gulf of Mottama Project, Helvetas Myanmar, wint.hte@helvetas.org
Soe Min Oo, Gulf of Mottama Project, Helvetas Myanmar, soemin.oo@helvetas.org
Than Htike Aung, Gulf of Mottama Project, Helvetas Myanmar,
thanhtike.aung@helvetas.org
Kyaw Thu Aung, Gulf of Mottama Project, Network Activity Group,
kyawthuaung169@gmail.com
Wut Yee Kyaw, Gulf of Mottama Project, Helvetas Myanmar,
wutyee.kyaw@helvetas.org
Zin Min Tun, Gulf of Mottama Project, zinminmin.tun87@gmail.com

Gulf of Mottama (GoM) is an area of unique intertidal and coastal wetland with astounding global biodiversity of species of conservation concern as designated as Ramsar site. The ecosystems provide food security and livelihoods for millions of people living along the 3,000 km coastline of the gulf. Since 2015, the Gulf of Mottama Project (GoMP) is initiated in GoM as multi-sector project focusing on conservation, livelihood development and governance of natural resources in the gulf. The project was largely centered on fisheries and starting in 2019, it is planned to integrate other conservation concerns and issues through Ecosystem Approach to Fishery Management (EAFM). EAFM in GoM is adopted from Fishery and Agriculture Organization (FAO) and aiming to manage the small-scale fishery in the GoM from the lens of ecosystem management while stabilizing the equilibrium between ecological

well-being and human well-being through development of good governance. However, the synergic effects of military coup and COVID 19 pandemic substantially disrupted ongoing works toward implementation of EAFM. Despite the turmoil, the project consulted with village representatives to develop EAFM plans for 8 townships in the GoM. As result, the project planned 8 Fishery Management Units (FMUs) in each township. The project will highlight how the project achieved the EAFM as well as challenges the project encountered in the complex socio-ecological systems and unstable political landscapes for effective management of these systems and wise-use of its resources in GoM.

Transforming small-scale fisheries in Myanmar: Lessons from Inshore Fisheries Co-Management in Myanmar

Htut, Thaug, Wildlife Conservation Society, Yangon, Myanmar, thtut@wcs.org

Meira Mizrachi, Wildlife Conservation Society, Yangon, Myanmar,

mmizrachi@wcs.org

Kyaw Thinn Latt, Wildlife Conservation Society, Yangon, Myanmar, ktlatt@wcs.org

Antt Maung, Wildlife Conservation Society, Yangon, Myanmar, amaung@wcs.org

Min Khant San, Wildlife Conservation Society, Yangon, Myanmar, msan@wcs.org

Thu Rein, Wildlife Conservation Society, Yangon, Myanmar, trein@wcs.org

Maung Maung Kyi, Rakhine Coastal Resource Conservation Association, Kyeintali,

drmgmgkyiktl@gmail.com

Aung Myo Naing, Rakhine Coastal Resource Conservation Association, Kyeintali,

aungmyonaing.rca@gmail.com

Soe Lwin, Kyeintali Inshore Fisheries Co-management Association, Kyeintali,

Myanmar, soelwin.kifca@gmail.com

In support of ongoing fisheries reform efforts in Myanmar, WCS and local partners have been developing an inshore fisheries co-management project involving 36 coastal communities of Western and Southern Coastal Regions in Myanmar. WCS is working with many partners to understand the communities' socioeconomic situation and analyze their current and historic fishing practices. We have mapped fishing grounds and compiled information on preferred gear types, targeted fish species, and seasonal fishing activities. We also installed vessel monitoring systems to track fishing boats – which confirmed the data gathered from participatory mapping and helped further define the community's fishing grounds. These activities aided us in identifying a co-management area and establishing a new fisheries association – the Kyeintali Inshore Fisheries Co-Management Association (KIFCA) – comprised of 20 representatives from each of the participating villages (one man and one woman) to collaboratively oversee the area. Within the co-management area, specific zones – such as no take zones, seasonally-closed areas, and gear-restricted areas – have been delineated by the communities themselves and a co-management plan drafted to guide implementation. On August 8 Myanmar's Department of Fisheries formally designated the Kyeintali co-management area, one of the first such arrangements in the country. This is ongoing of the process and additional efforts will be needed to continue supporting co-management implementation and strengthening of KIFCA in

order to present a successful model that can be replicated across Myanmar. This presentation will provide an overview of the co-management demonstration process, lessons learned to date, and implications for further replication in the Myanmar context.

A typology of responses to vulnerabilities of global small-scale fisheries

Islam, Mohammad Mahmudul, Department of Coastal and Marine Fisheries, Sylhet Agricultural University, Sylhet, Bangladesh, mahmud.cmf@sau.ac.bd
Ratana Chuenpagdee, TBTI, Department of Geography, Memorial University of Newfoundland, ratanac@mun.ca

Small-scale fisheries and vulnerability are intimately linked. Vulnerability undermines small-scale fisheries' role as providers of sustainable livelihoods, good health and well-being, food security, and economic development, thus hindering achieving the United Nations Sustainable Development Goals (SDGs) targets. Addressing these unfavorable situations requires timely, effective, and coordinated responses from all stakeholders at a different scale. To help identify what the appropriate responses should be, to reduce small-scale fisheries vulnerability, a typology of responses is developed based on a systematic review of the literature and an assessment of the performance of the responses in the context of multifaceted vulnerabilities. Using the I-ADApT framework, we evaluated both short-term and long-term responses employed by natural, social, and governance systems of global small-scale fisheries. The study reveals what responses may be transferable or scalable. The typology and learning about the specific context where responses are successful can help guide small-scale fisheries sharing similar characteristics to think about how they might be able to address their vulnerability in a timely and cost-effective manner.

Fishers' responses to changing storminess in the northern Bay of Bengal

Islam Bhuiyan, Monoarul, mahmud2512@gmail.com

Mohammad Mahmudul Islam, Department of Coastal and Marine Fisheries, Sylhet Agricultural University, Bangladesh, mahmud.cmf@sau.ac.bd

Unfit weather conditions due to cyclones and tropical depressions negatively impact sea-going fisheries' occupational safety and socio-economic conditions. However, this aspect of environmental risk has been less studied, particularly in the Bay of Bengal region. Based on the Bangladesh Meteorological Department data, this study assessed the trend of tropical cyclones and depressions (caused by lower atmospheric pressure) in the Bay of Bengal. Socio-economic implications of changing storminess have also been identified from a survey with marine fishing communities. The findings suggest that marine fishers' vulnerability to storminess mainly manifested in fatalities and morbidities of fishers and incurred income loss due to no fishing or incomplete fishing

trips. Nevertheless, a section of fishers often ignores the cautionary signal of unfit weather conditions and faces the risks of abnormal storm surges. Several factors shape the fishers' decision regarding the trade-off between facing physical risk at sea and exploring the fishing opportunities under dangerous weather conditions. This study offers insight into biophysical, socio-political, economic, and technological factors that shape fishers' perceptions and decision-making towards fishing in the storminess in the Bay of Bengal. These insights can inform and help decision-makers to develop targeted strategies to increase the adaptive capacity of sea-going fishers who are increasingly vulnerable to changing climate conditions in the Bay of Bengal.

Transforming Institutions in Transitional societies of fishing communities in India

Joy, Rosewine, Presidency University, Bangalore, rosewinesamuel@gmail.com

Efforts to combat climate variability, pollution and adapt to its effects is the major challenge human race is facing this century. Many studies point out the risk induced by environmental changes in grain production. However, the cooperative initiatives by small and marginal fisher households to address the associated risk, use of new technology from developing countries are under-represented in environmental negotiations. Aim of this study is to understand the formal and informal institutions followed by small-medium aquaculture communities to address climate-based production risk along Southern Indian peninsular. Three cases are used to illustrate and compared on how the paddy-shrimp rotational farming communities (less than 2Ha land) adapt to changing salinity levels in the estuary by bringing institutional transformations. The first case study shows how agrarian farmers negotiated with local panchayats for deconstructing the water barrier for best use of water quality for shrimp farming, the second case study shows how rotation rice–shrimp farmers form groups to raise their concerns on constructions along wetlands which affect their crop production in scenarios of unpredictable sea surges, while the third case study points out how farmers moved legally for their right to good quality water. We studied cases using unstructured questionnaires and focus group discussions. The results show that though the market could give signals on crop production, in the transitional societies it's the institutional initiatives linking multiple institutional players helped the farmers to adapt to changing climate scenarios.

Satoumi Concept – a new relation between humans and coastal seas

Kakuma, Shinichiro, Saga University, kakuma77@gmail.com

“Sato” means the area where people live and “umi” means the sea in Japanese. The Ministry of the Environment, Japan once described Satoumi as “coastal sea areas in which there is a harmonious coexistence of Nature and human-being.” In many parts of Japan, people put effort to create Satoumi. This movement is spreading not only in Japan but also throughout the world. The most important aspect of Satoumi is that

the ecosystem functions of coastal waters are enhanced through environmental conservation and resource management in which local people are closely involved. The Satoumi concept goes beyond the idea of protecting pristine nature by eliminating humans. It is about creating coastal environments where humans closely connect with the sea, which leads to the effective conservation and sustainable management of various natural resources and ecosystem services. Satoumi creation requires both active measures (direct actions to improve ecosystem functions) and passive measures (a variety of management activities), Integrated Local Environmental Knowledge as a knowledge base, and residential researchers and bilateral knowledge translators as the key actors. In the Satoumi creation, transdisciplinary approaches are needed in which scientists and local stakeholders collaborate to co-design the research agenda, co-create the knowledge, and co-deliver the research outcomes in highly complicated and uncertain coastal social-ecological systems. The significance of Satoumi in the small-scale fisheries, the history of Satoumi expansion in Japan and in the world, and cases of Satoumi creation mainly in coral reef areas are also discussed in the presentation.

Size limits on fishing: a simple prescription for managing data-poor small-scale fisheries

Kanno, Hayato, Graduate School of Global Food Resources, Hokkaido University, Japan, h.kanno@fish.hokudai.ac.jp

Despite the food security and socio-economic importance, small-scale fisheries are largely unmanaged. Small-scale fisheries are often affected by socio-economic and governance constraints and thus largely lack access to fisheries information. Although conventional methods for assessing and managing fisheries can be applied to small-scale fisheries, the lack or poor quality of data has been an obstacle for sound calculations. Managing fisheries through quantitative stock assessments remains paramount, however, the priority in small-scale fisheries should be to establish simple prescriptions that are feasible and affordable. Controlling the size selectivity of fishing is one of the simplest forms of fisheries management. It can be implemented simply by limiting the minimum mesh size of fishing gear and is therefore considered feasible even in data-poor small-scale fisheries. This study aimed to test the potential of size selectivity control to resolve stock status and produce sustainable yields. Previous studies have provided that when the size at first capture is sufficiently greater than the size at maturity, both yield and biomass can be maintained at high levels, regardless of fishing pressure. Our study developed this wisdom and generalized the conditions for size selectivity to achieve optimum fishing for stocks with different life-history strategies. The results showed that optimum yields and healthy stocks were obtained by fishing at the length where the biomass of the stock was maximized. In addition, the length at maximum stock biomass could be generalized from three different life-history parameters. Our findings will help unmanaged small-scale fisheries to start taking steps towards sustainable development.

Building Fisheries Resilience Through Multispecies Management

Litsinger, Emilie, Environmental Defense Fund , elitsinger@edf.org

Kendra Karr, Environmental Defense Fund, kkarr@edf.org

Edwina Garchitorena, Environmental Defense Fund, egarchitorena@edf.org

Andi Yasser Fauzan, Environmental Defense Fund, afauzan@edf.org

Fish live in communities, and most small-scale fisheries catch multiple species, yet fishery management predominately focuses on single species. In many small-scale fisheries, a variety of species are generally caught together. Failure to account for this adequately in management has resulted in serial depletion and alterations to the ecosystem. Ideally, multispecies fisheries management should strive to produce good yields from specific valuable stocks and avoid adverse impacts of fishing on marine ecosystems. Moreover, multispecies management should aim to build resilience to changes in stock productivity and distribution driven by climate change. Here, we present tools and pathways that several fisheries are adopting to achieve these goals. These case studies – from the Philippines, Indonesia, Mexico, and Cuba– differ in data richness, governance structure, and management resources. The management systems are also in various stages of evolution from unmanaged to complete management of a single species but transitioning to multispecies management. While various analytical tools and decision- making processes are described in the case studies, a common feature is the use of participatory stakeholder processes to build capacity and socialize the importance of multispecies management. We use lessons from these cases to recommend a multispecies management approach to overcome the limitations of current practices (typically single-species catch limits or large spatial restrictions), using the participatory processes and data-limited assessments to create stock complexes that simplify multispecies management (i.e., the “fish baskets” approach).

The effect of X-Press Pearl Disaster on Marine fish consumption of Sri Lanka

Lokugamage, I.P., Department of Agricultural Economics, Faculty of Agriculture,
University of Ruhuna, Sri Lanka, piyumalee94@yahoo.com

M.U.N. Gunawardana Department of Agricultural Economics, Faculty of Agriculture,
University of Ruhuna, Sri Lanka, udaninayanathara2@gmail.com

W.N. De Silva Department of Agricultural Economics, Faculty of Agriculture,
University of Ruhuna, Sri Lanka nilanthade@agecon.ruh.ac.lk

The X-Press Pearl disaster of May 20, 2021, threatened the food security of Sri Lankans by raising fears of contaminating fish, their main source of protein. Studies around the world have shown that oil spills and shipwrecks cause a reduction in fish consumption and a negative perception of fish safety. This study therefore focuses on changes in marine fish consumption with the sinking of the X-Press Pearl. We selected 125 consumers using the convenience sampling method and conducted a web-based survey in early July 2021. The study revealed that although 29% of respondents in the sample had declined, about half (48%) had completely stopped eating marine fish. The results show that average household spending Rs 1265 per week on marine fish

changed significantly to an average of Rs 503 ($t=10.4$, $df=116$, $p\text{-value} \leq 0.001$). This directly affects the change in their average household usage from 1454g to 528g per week ($t=9.3$, $df=121$, $p\text{-value} \leq 0.001$). Furthermore, weekly average household marine fish consumption was limited to 2 days ($t=13.1$, $df=122$, $p\text{-value} \leq 0.001$). Results indicate an average reduction of 64% in marine fish consumption of the respondents in the sample and this takes a slightly higher value as 71% for the respondents in the highly affected districts i.e. Gampaha, Colombo and Kalutara. A majority of respondents (79) do not know with certainty about the time period of consuming fish as usual. However, 86% of the respondents are ready to return to their general eating habits for marine fish, if scientific studies prove it is safe.

Gender aspects of small-scale fisheries in Japanese coastal areas: Gender-responsive research for achieving sustainability

Matsubara, Hana, University of Tokyo, hmatsubara@g.ecc.u-tokyo.ac.jp
Makino, Mitsutaku, Atmosphere and Ocean Research Institute (AORI), University of
Tokyo, mmakino@aori.u-tokyo.ac.jp

Since the importance of including the gender lens in research and policy discussions for achieving sustainable development has been recognized, research has been conducted on gender-differentiated roles, knowledge, and networks in small-scale fisheries; further, policy implications have been provided for gender-responsive fisheries development. In Japan, some studies have examined the gender aspects of small-scale fisheries. Many such fisheries in Japan are family businesses, engaging both men and women in production on the basis of gendered labor. While capture fisheries are reportedly male-dominated, pre- and post-harvest activities (e.g., financing, processing, and marketing the catch) is female-dominated in many areas in Japan, with some women also participating in marine capture fisheries with their husbands. Women's groups are coordinated as subgroups of Fisheries Cooperative Associations (FCAs) in many areas. Their activities widely vary from processing and marketing local seafood and promoting seafood consumption to leading beach cleaning activities; they focus on positively impacting and adding value to local seafood products and revitalizing rural communities. However, challenges such as the lack of women's participation in decision-making bodies still exist. Research on the impact of women's activities on ecosystems and resources or gender-differentiated impact and gender-responsive policies for emerging issues (e.g., the COVID-19 pandemic and climate change) is still scarce. This presentation reviews studies on gender aspects of small-scale fisheries in Japan and aims to identify research gaps in gender-responsive research to make such fisheries sustainable.

Vulnerability and social justice among fishing households headed by women in Batticaloa, Sri Lanka

Mohamed Ibrahim, Fazeeha Azmi, Department of Geography, University of
Peradeniya, Sri Lanka, faseehaazmi@pdn.ac.lk

Ragnhild Lund, Department of Geography, NTNU, Norway,
ragnhild.lund@ntnu.no

In Sri Lanka, women play an important role in the small scale- fisheries value chain. Batticaloa, in the east coast, had to witness the impacts of war (1983-2009) and the 2004 Indian Ocean Tsunami. Prior to war and tsunami, many people including women were engaged in fisheries related activities for their livelihood. With the return of normalcy, Batticaloa's fish production showed substantial growth and became increasingly competitive. Drawing on the analytical framework from the fisheries governance literature, this chapter aims to unpack female fishers' vulnerabilities and thus identify how social justice in small-scale fisheries related activities is hindered. Stories of three female fishers illustrate how the tsunami and the post-war situation, through different governance orders have exacerbated pre-existing and new vulnerabilities hence challenge social justice. These women lack access to appropriate resources due to their limited power and agency to negotiate and solve their problems and create new possibilities. Interactive governance is basically gendered and happens to a limited extent for women fishers.

Initial Experiences and Outlook in Implementing a Cooperative System for Seaweed Farming in Selected Sites in the Philippines

Novilla, Carmela Therese, Philippine Rural Development Project, Department of Agriculture, Philippines, ctnovilla@gmail.com
Triambulo, Ulysses, Philippine Rural Development Project, Department of Agriculture, Philippines
Estoce, Maximo Jr., Philippine Rural Development Project - Department of Agriculture. Philippines
Sta. Teresa, Ronald, Philippine Rural Development Project - Department of Agriculture, Philippines

The socio-economic benefits of seaweed farming to coastal communities in the Philippines is vast. It is estimated that about 116,000 families in the country are engaged in the culture of seaweeds (Rebours, 2014). However, low income among farmers remains persistent. A cooperative farming approach and consolidation trading is seen as one of the viable ways to raise farmer's incomes, increase market leverage and optimise production and efficiency of operations. The Philippine Rural Development Project of the Department of Agriculture is in key marine Key Biodiversity areas in the Philippines, providing sustainable seaweed farming opportunities to fisherfolks involved in Marine Protected Area (MPA) management. In five (5) sites in the country, PRDP has assisted local government units in operationalising consolidated production and marketing of Raw Dried Seaweed (RDS) to address key issues. Perceptions and experiences of seaweed farmers were gathered from these sites using qualitative survey techniques based on informant interviews, focus group discussions, and secondary data. Key factors that influence production and marketing, according to farmers are disease, typhoon and vulnerability to low and fluctuating prices of seaweed. The general lack of ability to influence price due to small

production size and relative distance and isolation from direct buyers puts farmers in a disadvantageous position against middle traders. There is a favourable view of consolidating produce at the community-level, however, the lack of trading capital and storage facility hampers efforts to form cooperatives of farmers. Strengthening organisations and producer groups is a key step towards a more cooperative direction.

Towards securing tenure rights of small-scale fishers: Reconciling ethics in SSF Guidelines

Piyasiri, Kaumi Lakmali, National Aquatic Resources Research and Development Agency, Colombo, Sri Lanka, kaumi.khklpiyasiri@gmail.com
Oscar Amarasinghe, Ocean University of Sri Lanka, oamarasinghe@yahoo.com

Tenure rights in fisheries are closely related to fishers' rights to coastal land and adjoining aquatic resources. In fact, secured tenure rights form the basis of social and cultural well-being of small-scale fishers. The national consultations carried out in 12 out of 15 coastal districts, under the implementation of SSF Guidelines project during 2018-2019, attempted at identifying the issues related to tenure rights of small-scale fishers in Sri Lanka. Power asymmetry between fishers and tourism stakeholders (especially, hoteliers) was evidently a serious issue of tenure rights. The utmost lament of coastal fishers of all 12 districts was that they had been gradually dispossessed of their traditional access routes to the beach, anchorage sites, beach seining sites and fish drying areas, due to unregulated constructions of hotels and resorts along the coastal region bordering the beach. Undoubtedly, these issues are associated with governance and management failures. Governance of tenure in small scale fisheries and resource management, as laid down in articles 5.2-5.12 of the SSF Guidelines, highlight the need for secure, equitable, and socially and culturally appropriate tenure rights, the need for recognizing, respecting and protecting legitimate and customary rights and the need for facilitating equitable access to fishery resources. While the focus and coverage on securing tenure rights in the SSF Guidelines is unrivalled, it could be asserted that the effective implementation of SSF Guidelines would be a crucial step towards resolving tenure issues confronted by small scale fishers.

Keywords: Tenure, Rights, Land, Governance, SSF Guidelines.

Reimagining value in dried fish value chain as wellbeing by applying SES lens

Pradhan, Sisir Kanta Sustainability management, University of Waterloo, Canada, sisir.pradhan@uwaterloo.ca
Prateep Kumar Nayak, SEED, Faculty of Environment, University of Waterloo, Canada

Dried fish is an important sub-sector of SSF, which experiences similar marginalizing trends in social, economic, political conditions of people involved in its production, and the ecosystems they depend on. Dried fish accounts for 12% of the total fish consumption globally but can increase up to 36% in low-income countries. About half

of the people involved in dried fish production and marketing are women. The approach taken to analyze dried fish sector has so far followed a narrow subset of commodity chain approaches with a focus on financial value, transmitted in a linear 'vertical' fashion across value stream. Such a neoclassical perspective of dried fish value chain undermines the complex human-nature interactions that is contingent upon specific histories, people, place, and practice as evident in social-ecological system (SES). It also adversely influences how the fishers and producers realize wellbeing in their material, subjective and relational aspects of life. Understanding the diverse ways in which value is conceived and shaped is essential to understanding the form that the dried fish economy takes and the ways in which it is governed. While SES governance approach provide for nuanced understanding of value chain nodes, social wellbeing framework help reimagining value as material, relational and subjective wellbeing. This paper enquires the research question- how the shift from neo-classical economic orientation of value chain to SES oriented value chain contribute to sustainable outcome as three-dimensional well-being (material, relational and subjective) for fishers and dried fish workers in the context of eastern coast of Bay of Bengal? The paper with mixed method research framework outlines key attributes of SES oriented value chain that contribute to the wellbeing of upstream value chain actors.

Taboos as tools of conservation? Understanding the role of dietary prescriptions in regulating access and use of marine resources

Ramenzoni, Victoria, Department of Human Ecology, Rutgers University,
victoria.ramenzoni@rutgers.edu

There is a long tradition within anthropology concerned with the study of dietary taboos and prescriptions. Because prescriptions prevent individuals from extracting, processing, and consuming specific food items, ritualistic prohibitions have been associated with the goals of biodiversity conservation. Yet, the notion that taboos can be subsumed to a conservation rationale has been shown to be overly simplistic. In this article, I build upon ethnographic fieldwork, dietary questionnaires (n: 120), and archival research among Coastal Endenese in Southeast Asia to better understand the role played by taboos in regulating marine and coastal resources. By documenting the presence and tracing the history of different prohibitions in regard to fish and marine mammals, I explore how kinship, gender, and power relations shape dietary practices that can have concrete consequences for an individual's health and ultimately lead to the overuse of other resources. Endenese consider fish as having originated from terrestrial creatures, creating a continuous cycle of movement from land to sea and back. This interrelation underscores the need to comprehend taboos within the larger cosmological and sociological settings but also the importance of historical explorations of dietary changes and trends. Studies which focus on the conservation to the detriment of more complex interpretations, ignore the correlates of reciprocity and obligation systems along with the many strategies that individuals may deploy to counteract restrictions. I conclude by discussing processes of essentialization and exoticization of taboos into "good" and "bad" practices and their consequences for

indigenous food sovereignty, overfishing discourses, and resource co-management approaches.

Last Ama First Diver: Tengusa Fishery Regeneration Story in Inatori fishing community, Japan

Kato, Ryoichi, Graduate School of Oceanography, Tokai University, Shizuoka, ryoichikato@fuji.tokai-u.jp

Li, Yinji School of Marine Science and Technology, Tokai University, Shizuoka, riginki@tokai-u.jp

In Japan, there have been Ama (women diver) for about 2,000 years, who dive into the sea to collect shellfish, sea urchins, and seaweed that live on the seabed. In the Inatori fishing community, Shizuoka Prefecture, the tradition of collecting Tengusa(Gelidium) a type of seaweed, has been handed down from generation to generation. However, with the death of the last Ama, there is no successor, and the history of the fishery is in danger of being lost. Under such circumstances, the regulations on exercising fishery rights have been revised in the Inatori Branch of the Izu Fisheries Cooperative Association, and the general divers are conducting the Tengusa collection currently. In this study, we will use the I-ADApT framework, a decision support tool developed by the Integrated Marine Biosphere Research Project (IMBeR) and now is the major methodology of the V2V Global Partnership Project, to identify the vulnerability of the Tengusa fisheries in the Inatori, and to examine the challenges toward the Tengusa fisheries sustainability.

Diffusion of trade-related measures to end IUU fishing: A global pursuit?

Song, Andrew, University of Technology Sydney, andrew.song@uts.edu.au

Sonia Garcia Garcia, University of Technology Sydney,

sonia.garciagarcia@alumni.uts.edu.au

Alin Kadfak, Swedish University of Agricultural Sciences, alin.kadfak@slu.se

Focusing on the ongoing European Union policy that restricts seafood imports of countries associated with IUU fishing, this work studies the effects of this unilaterally devised policy on non-EU countries' domestic efforts to control IUU fishing. The overall question is what is the current outcome of the international spread and adoption of such trade restrictive measures? Is this policy effective, and is it likely to spread to other countries? Drawing on two case studies from the Asia-Pacific – Thailand and Australia, we examine its impact on seafood governance in these countries, whether the EU policy ambition aligns with the country-specific contexts, and how much of a diffusion potential it holds to prevent IUU fishing on a global scale. In Thailand, the 'yellow card' has put pressure on the government to conform to the EU IUU regulation. The Thai fisheries reform indicates manipulating and socialization processes from the EU as techniques to spread the EU IUU policy into Thai institutions and regulations. Domestically, the issues of labour rights violations came out as a

strong a local priority that uniquely altered the makeup of the reform. The Australian case shows the capacity of the EU policy to influence internationally the framing of IUU fishing as a problem. But it also highlights the difficulties to 'translate' this discourse into specific socio-specific contexts that differ on traceability and labelling controls. From these analyses, our work offers insights on how likely it is that countries will adapt to the changing policy norms regarding IUU fishing.

Multilevel Resilience of Fishing Communities of Coastal Bangladesh Against Covid-19 Pandemic and 65-Day Fishing Ban

Sultana, Rumana, University of Liberal Arts Bangladesh, Dhanmondi, Dhaka, Bangladesh, rumana.sultana@ulab.edu.bd

Haseeb Md. Irfanullah, Center for Sustainable Development, University of Liberal Arts Bangladesh, Dhanmondi, Dhaka, Bangladesh

Samiya A. Selim, Center for Sustainable Development, University of Liberal Arts Bangladesh, Dhanmondi, Dhaka, Bangladesh and Leibniz Centre for Tropical Marine Research (ZMT), Bremen, Germany

Syed Tauheed Raihan, Center for Sustainable Development, University of Liberal Arts Bangladesh, Dhanmondi, Dhaka, Bangladesh

Joy Bhowmik, Center for Sustainable Development, University of Liberal Arts Bangladesh, Dhanmondi, Dhaka, Bangladesh

Shaikh Giasuddin Ahmed, Manusher Jonno Foundation, Dhaka, Bangladesh

The unusual situation that arose due to the COVID-19 pandemic and the 65-day fishing ban (national policy to boost depleted fish stocks) affected the lower-income fishing communities in coastal Bangladesh. Shocks and stresses were posed, and community people adopted strategies to adapt to the changes. In the process of adaptation, social-ecological systems resilience at different levels plays a crucial role. Though resilience is acknowledged as multilevel feature, studies on the interaction between the levels while understanding communities' responses to shock and stress are limited. Thus, in this study, we explored the shocks and stresses the fishing community faced and their views on the resilience feature at different levels (i.e., individual, household, and community level) in coastal Bangladesh during the COVID-19 pandemic and 65-day fishing ban period. The study found that the most resilience promoting features (e.g., diversified livelihood, friendship, network of supports) were adopted at the individual and household levels. However, positive and negative interactions were explored between resilience features at all levels. Low community-level resilience was not translated into a lack of household-level resilience, and strong individual-level resilience did not mean high household-level resilience. It was noted that the increased resilience of a particular individual or household could negatively affect community resilience. Resilience features showed inconsistent interactions within or among the three levels' resilience features. The study also revealed that multilevel resilience features stressed the importance of combining persistence (i.e., keeping fishing as the main livelihood) and adaptation process (e.g., livelihood diversification). The study showcases the importance of considering multilevel resilience that offers insight into crucial resilience factors which would not be evident

if only one level were studied. The overall finding of this study will contribute to framing governance strategies to ensure sustainable coastal management even in the time of any abrupt or expected changes, such as the COVID-19 pandemic and the fishing ban policy.

A randomised controlled trial to test the effects of nearshore fish aggregating devices and SBC activities promoting fish consumption in Timor-Leste

Tilley, Alexander, WorldFish, a.tilley@cgiar.org,
Kendra A Byrd, Independent Consultant, k.byrd@cgiar.org
Lauren Pincus, Independent Consultant, lpincus@gmail.com
Katherine Klumpanyan, Mercy Corps, kklumpanyan@mercycorps.org
Katherine Dobson, Independent Consultant, kedobson1@gmail.com
Joctan do Reis Lopes, WorldFish, j.dosreislopes@cgiar.org
Kelvin Mashisia Shikuku, ILRI, k.m.shikuku@cgiar.org

Timor-Leste is one of the world's most malnourished nations where micronutrient-deficient diets are a contributing factor to the prevalence of child stunting, currently estimated to be 45.6% of children under five. Small-scale fisheries are an important source of food and micronutrients that form a crucial part of nutritious rural diets. However, with a small national fishing fleet producing low catch volumes, fish out of reach of most inland and upland populations where it is needed most. Fish consumption is very low in rural areas compared to coastal, regional, and global averages. This trial is a one-year, cluster-randomized, partially masked, controlled trial among families living in rural, inland Timor-Leste. We aim to compare the effects of two treatments, alone and in combination, on the frequency and volume of household fish consumption in upland areas as a proxy for improved dietary diversity and micronutrient intake. Treatment 1 is the installation of nearshore, moored fish-aggregating devices (FADs) to improve catch rates with existing fishing gears. Treatment 2 is social and behaviour change (SBC) activities to promote fish consumption. Our study will determine the impact of an improved supply of fish, along with nutrition-oriented SBC activities, on the fish purchasing and consumption practices of rural, inland households.

Small-Scale Fisheries in the Context of Japanese Cooperation

Watanuki, Naohiko, OAFIC Co., Ltd., watanuki@oafic.co.jp

This article overviews the small-scale fisheries in the context of Japanese cooperation in developing countries based on the author's experience. Small-scale fisheries have long been supported the life of coastal communities in many countries around the world. This has not changed even now. However, small-scale fishers, women and children tend to become vulnerable and live-in poverty just because of depletion of fishery resources, market distortion, a few means for value addition and lack of global cooperation. It is happening in Japan as well. There have been a lot of natural

disasters, aged fishers, uncertain fishing practices, competition between domestic and imported fish, strict quality control of sushi and sashimi, giving Japan hints on how to contribute to developing countries. Despite having problems, it is said that Japan's strengths in fisheries cooperation are fisheries co-management, including community organization, and value addition in fish for local consumption and export. The former was started in the early 2000's. It is interesting to note that approaches and methods in fisheries management are different between Japan and Western countries. This article explains in detail. The latter is one recent trend. A slogan is "Fish Less, Earn More". The enhancement of the value of fish rises the price of fish. As a result, livelihood of fishing communities is maintained. Case studies of Senegal, Timor-Leste, Philippines, Cabo Verde will be presented. It is necessary to combine fisheries co-management and value addition in fish. To analyze small-scale fisheries objectively, how people are viewing Japanese Cooperation will be discussed.

Towards sustainable small-scale fisheries in China: A case study of Hainan

Zhao, Xin, Marine Development Research Center, East China Normal University,
Shanghai, China, xzhao@re.ecnu.edu.cn
Jia, Peihong, School of Politics & Public Administration, Hainan University, Haikou,
China, jiaph@nju.edu.cn

Little is known about China's small-scale fisheries (SSFs). This paper uses Hainan Province as a case study to examine the present situation, predicaments, and future changes of China's SSFs during a process of transition from extensive to green development. By following the social-ecological system (SES) framework, we analyzed Hainan's SSF-related settings, resource systems, governance systems and actors. Marine fisheries in Hainan are SSF-dominated, experienced dramatic increase and became the main source of most fishermen's livelihood. Fish community structure and fishing targets have shifted from a mix of large-bodied demersals and pelagics to smaller-bodied pelagics with high growth rates and fecundity levels. This degradation puts stress on China's central and local governments to enhance the preservation of marine ecosystems. Effort controls failed to reduce fishing power due to subsidies, a series of measures were introduced in 2015 to correct these problems. Hainan has explored different development directions for SSFs, including supporting offshore fisheries, enhancing fishery value, standardizing SSF vessel, delineating operating areas, developing fishing port economy, and building beautiful fishing villages. These practices illustrate that China's centralized government can likely command transformational changes in ecological and socio-economic outcomes according to policy objectives. Also, a broadened perspective considers the ecological, social, and economic dimensions of SSFs as whole is also crucial. Moreover, the integration of fishery policies with other related socioeconomic policies, and the interdepartmental cooperation is needed to achieve policy consistency across local governments.