

# GAF

2018

# Expanding the H O R I Z O N S

📍 Bangkok

📅 18-21  
October



## 7<sup>th</sup> Global Conference on Gender in Aquaculture & Fisheries



# Book of ABSTRACTS



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7<sup>th</sup> Global Conference on  
**Gender in Aquaculture & Fisheries**

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## **GAF7: Expanding the Horizons**

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## Foreword

### WELCOME TO GENDER IN AQUACULTURE & FISHERIES CONFERENCE 2018!

Welcome to the 7<sup>th</sup> Global Symposium on *Gender in Aquaculture and Fisheries: Expanding the Horizons* (GAF7). We are excited to have our event hosted by the Asian Institute of Technology in Bangkok, the capital city of “Amazing Thailand.” This setting offers a wonderful opportunity to learn more about Bangkok, Thailand and its major fishing and aquaculture sectors.

Thanks to you, our participants, our programme includes a rich variety of knowledge, and will showcase the newest ideas and findings from researchers and practitioners in the field of gender in aquaculture and fisheries. To support the exciting exchange of ideas and knowledge we will feature special sessions, training workshops, special workshops, oral and poster presentations and discussion panels, not to mention plenty of time for mixing and meeting new and old colleagues and friends.

We invite you to take full advantage of your time here, pick up new ideas and refresh your commitment to furthering the quest for gender equality in the aquaculture and fisheries!



**Kyoko Kusakabe**  
Asian Institute of Technology  
Co-Chair, Overall Organising Committee  
Chair, Local Organising Committee



**Meryl Williams**  
Chair, Gender in Aquaculture and  
Fisheries Section, Asian Fisheries Society  
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Globally, 800 million people, including many poor and marginalized women, men and youth, depend on fish for food, income and nutrition. Fisheries and aquaculture provide 3.2 billion people with 20 percent of their animal protein. Demand for fish in Africa, Asia and the Pacific is growing fast, and in many countries a doubling or more of fish production will be needed by 2030.

Led by WorldFish, the CGIAR Research Program on Fish Agri-Food Systems (FISH) is a collaborative global partnership to foster impact-driven research innovations across fisheries and aquaculture production systems and value chains, with the goal of achieving sustainable increases in socially and gender-inclusive production of nutritious fish and equitable distribution to those who need it most.

FISH research addresses the two interlinked challenges of sustainable aquaculture and small-scale fisheries, with crosscutting themes of youth, capacity development and gender. FISH gender research identifies and addresses gender-related barriers that limit women's engagement in and benefits from small-scale aquaculture production and hinder women's involvement in fisheries management. Research findings will be used to develop and test strategies to overcome these barriers.

## Silver Sponsors



The Thailand Bureau of Congresses and Exhibitions (TCEB) is tasked with promoting and developing the business tourism sector in Thailand. Since 2004, TCEB has successfully established Thailand as Asia's largest business events hub, by providing amenable service support for MICE programs.

The Crawford Fund is an Australian charity that raises awareness of the benefits to Australia and developing countries of Australia's engagement in international agricultural research and development; supports training programs for developing country and Australian scientists and farmers, drawing on Australian experience; and encourages and supports young Australians in their careers, studies and volunteering in agriculture for development.

The Fund's training scheme offers short-term, hands-on training for men and women from developing countries who are engaged in agricultural research and development. Practical, highly-focused instruction is given to trainees who are selected from, and return to, on-going research and development projects in countries in which Australian firms, institutions or agencies are already playing a role.

In the 30 years since our founding, we have trained over 12,000 individuals from 54 countries. Most recent examples of some of our fisheries and gender training has included a Master Class in fish passage engineering design, construction, ecology and monitoring and a workshop on how gender equality is currently being progressed in agricultural development projects in the South Pacific.

Keep up to date on our work through our website, and follow us on Twitter and Facebook



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### The Gender Agenda – turning #Me Too into #We Too in Aquaculture and Fisheries



**Darian McBain, PhD**

Dr. Darian McBain is the Global Director of Sustainable Development at Thai Union, the largest seafood processor in the world. Her previous work includes serving as the Sustainable Procurement Lead for the United Kingdom’s National Health Service, advising the United Nations, working in partnership with the World Wildlife Fund, and heading her own strategy and sustainability consultancy. She holds a PhD on social indicators for global supply chain analysis from the University of Sydney, where she serves as an Adjunct Senior Lecturer of Integrated Sustainability Analysis.

## **Workshops & Special Sessions**

# Photovoice: Researching Gender in Aquaculture and Fisheries through the Camera Lens

**JANINE PIERCE\***

University of South Australia

Photovoice is an increasingly used and respected ethical and respectful feminist research methodology that uses photos and associated comments to facilitate participants to become the researcher in telling their own stories. Photovoice transcends barriers of gender, social class, and levels of literacy. Photovoice projects have been conducted in a number of gender related projects in many communities. Photovoice enables research on issues, documenting projects, acts as support for funding applications, translating well also into conference presentations and journal publications. Photovoice empowers those who often do not get heard, providing a point for reflection, and is a catalyst for influencing decision makers and policy.

This interactive workshop takes participants through the Photovoice process, how and why to use it in gender research, formulating questions suited to this qualitative research approach, and resources needed, Emphasis is on importance of following strict ethical guidelines accompanying Photovoice research. The role of focus groups as part of the Photovoice process is also explained, Approaches to analyse and write up Photo data are discussed, with important follow up strategies to publicise Photovoice as a vehicle for change being discussed. Examples from Photovoice projects will also be shared. The facilitator is an experienced Photovoice researcher who has written a manual and guidebook for Photovoice researchers in AwF, and has other publications relating to Photovoice. She has done Photovoice projects in developing and developing countries, both in relation to aquaculture and also other community related issues. Workshop participants will be given an electronic copy of the AwF Photovoice manual and an electronic copy of a guidebook to customise forms and project checklists for Photovoice projects. This Photovoice workshop provides the information and tools to GAF researchers to take their research into the realms of an innovative but respected research method, consistent with feminist ideals of empowerment and inclusion.

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# Using “Intersectionality” in Research on Gender and Fisheries and Aquaculture: A GAF 101 Training Session

**MARILYN PORTER\*, HOLLY HAPKE and KYOKO KUSAKABE**

In 1989 Kimberle Crenshaw uncovered the ways in which different kinds of identity - such as race, gender or class - can intersect with one another to produce more complex forms of discrimination, subordination and inequality. In the landmark DeGraffenreid case, five Black women sued General Motors, alleging that the seniority system discriminated against Black women. They failed because the court refused to recognise the intersectional effect of being both black and a woman.

In a research toolkit, significantly entitled “Everyone Belongs”, CRIAW (Canadian Research Institute for the Advancement of Women) describes how taking an intersectional approach can enrich the research process - from developing policies to implementing programs. They lay particular emphasis on how intersectionality helps make visible the most marginalised in society and how to develop policies to help them.

The concept of ‘intersectionality’ is particularly useful for studies that cross disciplinary and other boundaries, such as gender and fisheries. It is valuable both in defining more nuanced research projects and in ensuring that the projects genuinely reflect the diversity of the populations they study. It is particularly useful in studies of aquaculture, as this sector often involves complex and understudied relationships between activities and actors, some of which are invisible in standard policy approaches.

Building on scholars’ and practitioners’ use of intersectional analysis, especially in feminist ways, this workshop will explore how both the original concept and its later iterations can help us deepen our research and analysis of gender and fisheries and aquaculture. Analysis that is cognizant of individuals’ multiple social identities allows for a nuanced analysis of how power and privilege manifest in complex ways. The experience of discrimination and inequality faced by racialized women fishers from more privileged social groups may differ from that of racialized women fishers from more marginalised groups.

The workshop will open with an account of the theory behind intersectionality and the breadth of ways in which it has been applied. It will then develop the particular application to gender and fisheries research, with a particular focus on aquaculture research. In the final section, we will analyse a fishing, aquaculture or fish processing project volunteered by a participant at the workshop. Using this example, and involving the workshop participants, we will collectively develop a ‘model’ intersectional research project related to the example provided.

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# Furthering/Deepening Feminist Perspectives in Fisheries

**NALINI NAYAK\* and CORNELIE QUIST**

International Collective in Support of Fishworkers

Gender mainstreaming in fisheries has begun to gain importance in the last decade or more. While this has facilitated a growing awareness and developed an important amount of documentation of the role and space that women occupy in fisheries, gender mainstreaming per se does not challenge on going power imbalances and patriarchal nature of fisheries development and its policies. In the thrust to increase fish production and economic wealth, the role of environmental destructive fishing technologies and practices, 'ocean grabbing', vertical fish value chains and the growing centralised policy measures increasingly impinge upon the nurture dimension of this natural resource, and the sensitive ecosystem it requires, as well as upon the well-being and self-reliance of fishing communities and fishworkers. In the absence of articulating a feminist vision of society, it is difficult to move towards a feminist perspective in fisheries development. Feminist researchers and activists in alliance with fishworker movements need to develop approaches towards a socially and environmentally just fisheries that sustain life and livelihood and highlight policy measures that contribute to this thereby also impacting on global fisheries development.

This Workshop will aim at articulating feminist visions and deepening the feminist perspectives in fisheries. It will commence with sharing the experience of the women in fisheries programme of the International Collective in Support of Fishworkers (ICSF) and through an interactive process will seek to evolve tools of feminist analysis of on-going global fisheries development. Examples of inspiring feminist approaches and struggles of women in fisheries may be identified. Hence, this workshop will not have a series of paper presentations.

Nalini and Cornelia are aware that there need not be just one articulation of a feminist vision, but the discussion will help throw up important ideas which will need to be further explored and will also inspire the younger generation to ask deep questions and think creatively in the future.

It will be important for those who wish to participate in this workshop to sign up in advance so that some preparatory guiding questions may be circulated.

**Note:** The ICSF is a collective of individuals committed to the interests of small scale fisheries and fishing communities, in existence since 1986. **ICSF's mission** is "to support fishing communities and fishworker organizations, and empower them to participate in fisheries from a perspective of decent work, equity, gender-justice, self-reliance and sustainability". In this endeavour, ICSF works in collaboration with organizations of fishworkers and other like-minded groups.

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# Exploring Gender Equity and Equality in the SSF Guidelines

**DANIKA KLEIBER\*, WHITNEY YADAO-EVANS and CYNTHIA MCDUGALL**

WorldFish and Conservation International

The Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (SSF Guidelines) outline a clear commitment to gender equity and equality. The SSF Guidelines can also provide a useful framework to identify gender equity and equality priorities in different small-scale fisheries and aquaculture contexts. Once these priorities are known, institutional needs (such as education, gender expertise etc.) can also be identified. As GAF7 brings together experts and practitioners from around the world, this would be a wonderful opportunity to recognize and record shared priorities and needs for gender equity and equality in small-scale fisheries and aquaculture contexts. This workshop will use a variety of activities to first explore basic issues of gender, offer information about the SSF Guidelines, then elicit feedback from participants about their institutional priorities and needs in relation to the SSF Guidelines.

## **Overall Purpose:**

- To encourage participant interaction and knowledge sharing (All activities)
- To explore issues of gender that will create a shared understanding for the following activities (Activity 2)
- To share information about gender equity and equality principles in the SSF Guidelines and reflect on gender-related strengths, weaknesses, opportunities and questions associated with the SSF Guidelines (Activity 3)
- To co-create a list of gender issues being prioritized and/or SSF Guidelines aspects being implemented by different institutions (Activity 3)
- To co-create a list of institutional needs for implementation of gender equity and equality priorities (Activity 4)

## **Desired Outcomes:**

- Greater understanding of gender in the SSF Guidelines by workshop participants.
- Understanding of how gender equity and equality issues in the SSF Guidelines are being prioritized or implemented, and key institutional needs moving forward. This could be turned into a science publication following the workshop. Any publication or report would acknowledge the contributions of all participants either through authorship or other agreed upon recognition based on the level of contribution.
- Networking for possible future collaborations on gender and small-scale fisheries governance.

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# **Role of Women Fishworker Organizations towards Implementation and Monitoring of Small Scale Fisheries Guidelines; Case of African Women Network of Fish Processors and Traders (AWFISHNET)**

**EDITRUDITH LUKANGA\* and KAFAYAT ADETOUN FAKOYA**

The 1995 Code of Conduct for Responsible Fisheries does not mention gender/women, and nor do its >50 instruments and technical guides. The Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication is one notable exception with further elaborations in the gender equitable small -scale fisheries supplement. Women account for about 50 percent of the workforce in small-scale fisheries, particularly in processing and trade where they control multiple supply chains from home consumption to commercial sale of fresh, dried, or otherwise processed fish products. Gender is a cross-cutting theme in small-scale fisheries and gender division of labour in fisheries is becoming increasingly dynamic with women's contributions present in all activity spheres including harvesting, net mending and boat maintenance. Despite their significant numbers and roles, women's real importance remains invisible because all these activities are considered to be extensions of women's social functions or domestic responsibilities.

Achieving sustainable management of fisheries resources, improved livelihoods and positive nutritional outcomes for fishing communities are dependent on gender equity and equality. Women empowerment was prioritized at the United Nations Millennium Development Goals and remains a focal interest to achieving Sustainable Development Goals (SDGs) on poverty reduction and food and nutrition security. Although, some progress has been made in reducing inequity in terms of power relations between men and women, the women in developing world are still at a serious disadvantage where they face substantive challenges to engaging in and benefiting equitably from the sector. Hence, this workshop will assist in drawing the map for future directions in the small-scale fisheries from lessons and experiences shared on the fisheries and the gender equality situations in selected developing countries.

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# **Gender Transformative Approaches in Fisheries and Aquaculture: An Exploration of Strategies and Emerging Outcomes**

**CYNTHIA MCDOUGALL\*, STEVEN COLE and AFRINA CHOUDHURY**

WorldFish

Approaches to gender within fisheries and aquaculture can be understood as occurring on a spectrum from gender blind to accommodative to transformative. Gender transformative approaches differ from accommodative approaches in that they do not only work around (i.e., accommodate) gender barriers, they also encourage women and men to examine and question existing gender dynamics and norms – and their influence on individual, family and community wellbeing and outcomes. Most fundamentally, they aim to enable locally-driven, context-appropriate shifts in inequitable gender norms, attitudes, behaviours and practices and the related imbalances of power.

The purpose of this session will be to increase shared understanding amongst participants about gender transformative approaches, their uses and outcomes, in fisheries and aquaculture based on current empirical case evidence.

This session will be an engaging exploration of gender transformative approaches using a WorldCafé process. Following an introductory overview to gender transformative approaches, participants will choose and rotate between 'Café tables'. Each table will present a different case study or key issue. The table host will give a very brief presentation followed by time for sharing and discussion. Key learning questions will be developed in line with the emerging conference themes.

Tentatively, WorldFish would provide 2-3 tables (cases) and would solicit 1-2 in advance from other institutions. The former will likely focus on empirical cases from WorldFish research in Zambia (relating to processing in fishing camps and/or savings groups), in Bangladesh (homestead polyculture production), and a table on challenges and ways forward with measuring gender transformative change. The table(s) from other institutions will be selected either from amongst submitted abstracts or solicited directly. It may focus on a different type of scale of gender transformative approach, such as a household methodology.

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# **Gender Analysis through Micro and Small Aquaculture Operation (MiSAO) Best Aquaculture Practises (M-BAP)**

**ZUMILAH BINTI ZAINALALUDIN\***

Senior Lecturer, Department of Resource Management and Consumer Studies, UPM, Malaysia

This workshop aims to share methods of gender analysis through Micro and Small Aquaculture Operation (MiSAO) Best Aquaculture Practises (M-BAP) as well as to gain input for improvement. The M-BAP is a questionnaire which aims to measure the BAP of MiSAO as well as gender analysis questionnaire to capture who does what in MiSAO. There are four stages of the questionnaire development. First stage is the elements identification from Medium and Large Scale Aquaculture Operation (MeLSAO) that are suitable for MiSAO. In the future MiSAO has to scale up and becomes MeLSAO. Therefore the BAP of MiSAO should targeting MeLSAO. However the elements have to be suitable with the size of MiSAO. Second stage - in order to capture women involvement the M-BAP should take into consideration levels in System Theory (domains) - input, throughput and output. The MeLSAO BAP is only focusing at the throughput process - the process of fish farming. To trace the involvement of women in MiSAO the input and output levels of system theory should also been considered. Thus in this second stage is focusing to 'domain' of M-BAP. Therefore at third stage various Time Use Study (TUS) and Nominal Group Technique (NGT) procedures have to be conducted to capture who does what (gender analysis) in order to develop the statements in each domain. Respondent will answer yes/no for each statement to represent wheather he/she does the activities, as well as yes/no wheather the activities are performed in his/her farm. At the fourth stage the questionnaire statements are formulating. In each element there are 3-domain respectively then is followed by relevant statements. This M-BAP should be able to capture the level of MiSAO BAP as well as who does what in MiSAO activities. The following process is validiting the statements, pilot testing the M-BAP and then improve the statements through validity and reliability process.

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# Mainstreaming Gender in Fisheries Education

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SALIN KRISHNA and KUMI SOEJIMA**

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In the past twenty years, a number of efforts have been made to integrate gender issues in fisheries, including coming up with a guidance document to promote gender-equitable small scale fisheries in the context of implementing the FAO's Small Scale Fisheries (SSF) Guidelines, and institutionalizing the Gender and Fisheries Section of the Asian Fisheries Society. We have seen the proliferation of gender research in a range of resource use, governance, rights-based and other topics in the fisheries sector, leading to heightened gender awareness and sensitivity. In some countries, certain policies even mandate that government institutions dealing with fisheries extend particular focus on the gender dimensions. However, despite these significant strides, we have yet to see gender concerns mainstreamed in fisheries education, including teaching and other curricular matters.

The proposed special panel will look into the state of fisheries curricula in selected countries in Asia-Pacific and highlight the extent to which gender concerns have been integrated or mainstreamed at the undergraduate and graduate levels. Experiences in India, Thailand, Japan and the Philippines will be presented in the panel, with 4-5 presenters. The task of moderator may be assigned to one of the panel members or may be asked of someone else.

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# **Session I: Gender assessments in fisheries and aquaculture**

# Gender Equity in Bagnet Creek Fishery of North-West Coast of India

**S. ABUTHAGIR IBURAHIM<sup>\*</sup>, SURAJ KUMAR PRADHAN<sup>1</sup>, T.NIRMAL<sup>1</sup>, T.VELUMANI<sup>1</sup>,  
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Bagnet operated in the north-west coast of India is locally called *Dolnet*, *Bokshi jal* or *Kavi jal*. The bag nets are mostly operated by the poorest segments of coastal communities which majorly involve juvenile fishing. Koli fisherfolk of Maharashtra were well known for their skills in fishing and marketing of fishes. The role of women in dolnet fishing in the creek of the northwest coast was documented in the present study between September 2016 to May 2017. The fisherwomen and fishermen of same family share their works starting from net making to fish selling, which is a tradition got inherited through generations which still exists in the creek dolnet fishery. But usage of smaller meshes noted in the present study is alarming that there is a need for sustainable fisheries by increasing their responsibility through coordinated management measures.

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# **Coconut Water Treated Bottled Sardines *Sardinella Fimbriata* Technology Transfer: Gender Roles**

**CORAZON P. MACACHOR<sup>\*</sup>, JESSON T. TAMUNDOC, MARIBEL V. RAMOS,  
CHERRYLENE G. MACACHOR and RENISSA S. QUINONES**

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Tropical species of fish like Sardines *Sardinella fimbriata* are considered low cost fishes due to its taste which can be enhanced with coconut water as an ingredient during pre-treatment process. The study aimed to determine the acceptability and viability of coconut water treated bottled sardines and tried to identify gender role to the identified organized communities of Cebu Province for technology adoption. After two years of project implementation in collaboration with the Department of Science and Technology, Department of Trade and Industry, Philippine Coconut Authority, Cebu, Philippines, the university was able to transfer the technology to five groups of communities who belong to small and medium entrepreneurs. The product is now commercialized through the effort of the Department of Trade and Industry, Go Negosyo Center of Bantayan, Cebu and distributed by Lamac Multipurpose Cooperative in collaboration with Philippine Carabao Center 7 in the Dairy Box outlets. Ninety percent out of the 150 respondents are female adopters, who range from 25-70 years in age. The role of female participants are: preparation of the raw materials which includes washing and dressing the fish, brining, packing and steaming, and sealing the finished products. The male participants usually purchase the raw materials, prepare the pressure cooker, process the bottled fish and label the processed fish.

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# Women Entrepreneurs in Fish Value Chains: A Micro Level Study of Vulnerability and Resilience in India

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Entrepreneurs operating in subsistence markets, especially women, are often more susceptible to external shocks than those in affluent markets. Vulnerability could be due to the role of any number of factors, including regulatory, economic, social, harvest-related, technological, and market-related. Against the backdrop of these vulnerabilities, endowment of social, financial and human capital among entrepreneurs plays an important role in resilience and ability to adapt to changing market dynamics. This paper studies the vulnerabilities and resilience of women entrepreneurs involved in marine fish economies in southern India. The interplay of vulnerability and resiliencies is reflected in women's movements across nodes in the value chain. We locate women entrepreneurs within fish value chains situated in the east and west coasts of India, tracing their movements and transactions within and across nodes to identify the factors that most critically impact their economic livelihoods.

By studying the role of women as entrepreneurs in the fish value chain we intend to make a twofold contribution. At the first level we advance understanding of the role of women entrepreneurs in throughout the spectrum of fish value chains. Second, through the qualitative analysis based on interactions with the women entrepreneurs in the east and west coasts of India we provide a framework to analyze the characteristics and movement of women entrepreneurs in this value chain, shaping the specific vulnerabilities they face and their sources of resilience and adaptation.

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# Women's Empowerment through Improved Seaweed Farming Technology: The Story of "Sea PoWer" In Zanzibar

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Seaweed farming using pegs and ropes was introduced in Zanzibar 30 years ago and became an important livelihood source for the women of the island. Since then, climatic variations, low productivity and prices, inappropriate technology and difficult work conditions have increasingly challenged their economic and social benefits from the activity. To achieve more than increased productivity, the introduction of an improved farming technology needs to be mindful of gender dynamics and socio-cultural context. We will tell the story of "Sea PoWer", a winner of the 2016 Blue Economy Challenge award (<http://theblueeconomychallenge.com>), whose goal is to simultaneously address seaweed productivity challenges and enhance women's empowerment through the gender-sensitive promotion of tubular nets. Whilst tubular nets are showing promise over the traditional peg and rope technology to improve 'cottonii' seaweed productivity and local ecosystems, they are more suited to deeper water, and thus, require either swimming or boat handling skills that women do not have. Understanding their cultural acceptance, potential to transform women's farming practices and livelihoods, and to act as a vector for their emancipation is critical to prevent the hijacking of the benefits of the technology from women, and to prepare the ground for any scaling out operation. We will show how the results of our growth trials are validating the effectiveness of tubular nets. Using insights from the producers themselves, elicited through an innovative enquiry embedded in the Theory of Planned Behaviour and gender analysis, we will reveal women's perceptions of the benefits of tubular nets and we will share how our gender-sensitive approach to the promotion of a potentially challenging seaweed farming innovation is contributing to their empowerment. We will also highlight the remaining challenges that need to be lifted to ensure the sustained adoption of tubular nets and their transformative impact on the lives of women producers.

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# How has Organization Benefited Women in the Barbados Flyingfish Fishery? A Look from within

MARIA PENA<sup>\*</sup> and PATRICK MCCONNEY

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Fisherfolk organizations are as diverse, complex, dynamic (and possibly contentious) as the fisheries to which they are linked. Institutional arrangements among individuals and groups of stakeholders range from formal to informal organizations of collective action and cooperation, to those steeped in conflict. Efforts to implement the 2014 *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication* (SSF Guidelines) led by FAO have resulted in increasing global and local attention to fisherfolk organizations, their strengthening and governance, and women's roles and participation in them both as members and leaders. In Caribbean small-scale fisheries, the contribution of women's roles in fisheries value chains is largely undocumented. There is limited literature on women in fisherfolk organizations in Barbados where flyingfish comprise more than half of the annual total landings. Women are conspicuous in the postharvest sector of the flyingfish value chain, but their participation in fisherfolk organizations is unclear. The Gender in Fisheries Team (GIFT) has conducted participatory action research with the only postharvest fisherfolk organization in Barbados, which comprises women engaged in the flyingfish fishery. Central Fish Processors Association (CFPA) formed to address challenges small fish processors (fish vendors) were experiencing in their livelihoods. Despite not being a formal organization, participation in the female-led, predominantly female, CFPA and its activities is high, especially in times of crisis. Through group and individual interviews, and document analysis, the benefits to the women from participation in the organization, and the challenges they face, were investigated. The research is the first of its kind focused on organized women in the Barbados flyingfish fishery, deviating from the typical focus on men in its harvest sector.

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# Addressing Gender Gaps from a Programmatic Perspective

**ANGELA L. CRUZ<sup>1\*</sup>, PATRICK J. CHRISTIE<sup>1</sup> and ALAN T. WHITE<sup>2</sup>**

<sup>1</sup>University of Washington

<sup>2</sup>USAID SEA Project

The United States Agency for International Development (USAID) Sustainable Ecosystems Advanced (SEA) Project is offering technical assistance to the Indonesian government to maintain or increase fisheries production. The conversation surrounding gender and fisheries is ever growing and USAID pays special attention to gender integration in all their programs. In the 2017 work year, USAID SEA found that female respondents had consistently lower knowledge of all issues pertaining to fisheries and marine protected area management. Due to women's large role in the fisheries sector as processors and marketers of fish, a gender assessment is performed to examine how USAID SEA is addressing female needs in project site communities. Methods include semi-structured interviews with USAID SEA Project and partner staff, a literature review, and the application of a livelihoods framework. The gender interventions by USAID SEA are matched to Gender Project management indicators and assessed for their potential in resulting in gender inclusion. The relevant activities and their potential for inclusion are discussed, and further recommendations are made. Furthermore, we offer suggestions for other international development projects that could be considered "best practices" for gender integration in fisheries projects.

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# **An Evaluation of Recent Initiatives on Gender, Women and Livelihoods in Small-Scale Fisheries in Indonesia**

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In this presentation we report on the results of a collaborative research evaluation activity to examine findings from 20 livelihood development and enhancement projects implemented in coastal communities in Indonesia. The aim of the research was to assess the effectiveness of initiatives in enhancing livelihoods, the incorporation of a gender approach, the degree of involvement of women, and lessons learned. A secondary objective was to document knowledge gaps and future research needs.

The evaluation of projects covered a range of internationally funded development, government and non-government initiatives. The methodology applied a qualitative approach to compare projects and analysis of project variables. We categorised projects according to their gender approach ('none', 'gender accommodating', or 'gender transformative') recorded how and why men and women were involved in the project activities and the purported impacts and

The results show that many attempts have been made to create, enhance and diversify livelihood strategies in coastal communities across Indonesia; however, programs were often not informed by thorough gender analysis nor particularly concerned with gender outcomes. Instead, they had a given a predominate focus on implementing fisheries and marine protected area management regimes and managing capture fisheries harvesting. This limited their potential to lead to gender transformative change, an approach evident in only 10% of reviewed projects.

This review draws attention to the need for transparent evaluation, reporting of, and learning from small-scale fisheries livelihood intervention programs, as well as learning from compatible action research-driven gender transformative programs in agriculture and health in the design and implementation of such programs in Indonesia's coastal zone. It also highlights the need to develop a tool-box to facilitate gender approaches for understanding coastal livelihoods and the role of gender in these communities.

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# Human Development of Small Scale Fishers in Indian Reservoirs: A Gender Based Assessment

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The fisheries sector is an important source of livelihood for millions of people across the world. Inland fishing has a significant role in socio-economic improvement of the developing countries. Among all the inland open water bodies, reservoir fisheries assume substantial role in providing a vital source of protein as well as income for many families. In this context, the present study attempts to assess the human development of fishers dependent on the reservoirs for their livelihood and specifically understand the role played by both fisher men and women in fisheries related activities in Indian reservoir regions. UNDP's macro level Human Development Index (HDI) and Gender Development Index (GDI) have been adapted to study the sub-set of a population (fishers) at the micro-level. All the three components of HDI viz. living standard, education and health of fisher men and women were assessed at both individual and household level. The data were subjected to relevant statistical analysis in order to understand the human development status of fishers living around two large reservoirs (>5000 ha) namely Rihand (Uttar Pradesh) and Upper Wardha (Maharashtra) in India. Unlike coastal fisheries, women are involved throughout the value chain of reservoir fisheries including pre-harvesting and harvesting, more specifically in fishing, harvesting, prawn harvesting using traps, net and prawn traps making, marketing of smoked-dried fishes in local markets, especially in Upper Wardha reservoir. It has been found that that the living standard, education and health were better in Upper Wardha reservoir, for both men and women. The level of fisheries governance as well as the extent of involvement of women appears to significantly contribute to higher HDI status in Upper Wardha reservoir, underscoring the fisher women's contribution in capture fisheries.

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# Gender Differentiated Needs and Preferences of Farmers for Rohu Fish in Bangladesh and India

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The prime objective of the study was to identify high priority traits for Rohu (*Labeo rohita*) by farmers with potential of satisfying needs of both male and female farmers in society and which is representative of economic impact at large scale and is also feasible to incorporate in genetic improvement program.

The study was conducted in two districts of Bangladesh and three districts on Odisha state in India (ongoing). The study has followed a multi-stage sampling to make the results representative at district-level. The information is collected using mixed method approach.

The findings presented here are based on information collected from male and female in 144 dual-headed farm households and 25 focus group discussions from male and female groups separately. Different methods are used to derive unique and economic-worth traits. Weight, skin color, gill color and price of fish are prime economic value traits identified from a preference-based choice experiment using 1000minds software. Body shape and taste are found as least identified trait. From primary survey at household level, we found more than 60 per cent of farmers would like to have fast growing strain. The other preferences were improving size of fish in short period, less bone fish, uniform size of fish and high survival rate. The focus group discussion affirms above results of growth and size. Traits like skin color and gill color as identified in 1000minds were found to be more related to freshness of fish. Further exploring this aspect, farmers suggested rising trend of selling and buying live fish. Gender-disaggregated results suggests that there are common preferences for weight and growth, the rest of traits preferences are highly influenced by the prime activities of the person involved. Field data collection in Odisha is ongoing, but preliminary results suggests that farmers preferred traits are to reduce culture period from their present practice of 7-8 months (on average) to less than 6 months and increase fish size from their present cultivation i.e. 600-700 gram (on average) to more than one kilogram.

Very limited research is available to address this aspect as we found in a systematic literature review conducted before the empirical approach. Though we are in process of collecting and analyzing data, we believe, this will provide a systematic assessment of men and women's needs for improved Rohu fish in studied districts.

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# Engagements of Women and Men in the Municipal and Commercial Tuna Fisheries in Sarangani Province, Philippines

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This paper compares and contrasts gender roles in the municipal and commercial tuna value chains in Sarangani, Philippines, with focus on the production and trading nodes of the chain. It discusses the pre-fishing and fishing activities of women and men, to include sourcing of starting capital and subsequent arrangements with women and men financiers. It shows the pervasive role of financiers in tuna trading and tackles efforts toward sustaining tuna fisheries, particularly the advocacy against illegal, unreported and unregulated (IUU) fishing by putting in place catch documentation and traceability (CDT) schemes. Data were gathered mainly through key informant interviews with key players in the production and trading nodes of the value chain, and with Sarangani Province and General Santos City-based officials of government regulatory fisheries agencies and enumerators of the fisheries stock assessment program, and through direct observation. Findings were supplemented with secondary data and presented in an industry-wide, multi-stakeholder workshop.

Women involvement in the pre-fishing and fishing activities were found to be similar in both municipal and commercial tuna fisheries, but more pronounced among the fishing crew in the latter. Family involvement in financing activities was noted, especially in the municipal tuna fisheries, with women taking lead roles. Financing was observed to result to consolidating fish and in dominating the tuna trade; the active role of women in financing inevitably extended to consolidating and trading. Value additions were consistently higher in the post-harvest nodes than in the production node. Efforts towards sustaining tuna stocks need to be pushed, and national fisheries regulations and global tuna trade sanctions have obliged the commercial tuna fishery sector to put in place CDT processes at sea which, because of conditions obtaining, engage only men. Increasing the engagement of women in sustaining the tuna industry therefore requires urgent attention and action.

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# Organizing Women to Promote Gender Equity: The Case of Fishing Villages in Miagao, Iloilo, Philippines

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This paper aims to assess the state of women's organizing for gender equity in fishing villages in the town of Miagao, located in the Province of Iloilo, Philippines. Miagao is a coastal municipality in Southern Iloilo that currently ranks third in the province for having the most number of small-scale commercial fishing activities. Miagao is also home to the University of the Philippines Visayas, with its College of Fisheries and Ocean Sciences considered to be the leading fisheries institution of higher learning in the country. Fishing communities in Miagao have therefore been exposed to a variety of institutional capacity-building interventions through the years, including those geared towards improving women's livelihood opportunities. Women's organizations were established in the process of engaging them in these seminar-workshops aimed primarily at improving knowledge and skills, ranging from net mending to managing MPAs.

Organizing women in the fishing villages of Miagao is indeed a crucial step in achieving gender equity and promoting their empowerment over-all. However, a series of individual and group interviews with members of women's organizations in the area have also highlighted that institutional interventions involving women are more often than not, top-down, with participants least likely to be consulted on their needs prior to project implementation. Apart from livelihood skills training and initial financial support, the women's organizations were minimally provided with trainings on organizational or financial management, thus, resulting to organizational sustainability issues. Some organizations are also closely associated with local politicians, which can sometimes prove disadvantageous. Moreover, the women's frequent identification of household maintenance tasks as hindrance to their full participation in organizational activities, highlights the still glaring need for raising gender-awareness and sensitivity in small-scale fishing villages. Such sensitizing efforts may eventually lead to equitable sharing of productive, domestic and community responsibilities among fishing women and men.

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# Gendered Differences in Nutritional Status of Fish-Dependent Households in Kerala, India

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Malnutrition refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients. It covers two groups of conditions viz., 'under nutrition' and 'over nutrition' that impacts households, communities and countries with 0.46 and 1.90 billion adults being under and over nutrition respectively. The level of malnutrition is generally higher among women and children. The United Nation General Assembly has declared UN Decade of Action on Nutrition from 2016 to 2025 for addressing malnutrition in all forms worldwide. A cross sectional study was undertaken to study the nutritional status of fishers in Vaadi fishing village, Kollam district, Kerala, India to assess the prevalence of malnutrition in the fisher households. The Body Mass Index (BMI) was calculated using WHO classification. The results showed that majority of adults (64.71%) were in the healthy weight group (56% women and 73.08% men). The nutritional status was assessed in terms of fish eating habits of fishers. The factors influencing the nutritional status of fishers were also looked into.

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# Promoting Women's Empowerment and Gender Equality in Myanmar Fisheries and Aquaculture Sub-Sectors

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Although Myanmar fisheries and aquaculture have been the subject of recent study, little attention has paid to the role of gender in the sector's development process, specifically, the roles of women in the overall management of fisheries and aquaculture. Lack of understanding and attention to the gender dimension of fisheries and aquaculture management can result in policy interventions missing their target of creating effective interventions and sustainable livelihoods at the community level. There is no doubt that fishing-dependent communities, and people involved in the aquaculture value chain have a vital role to play in the overall development process of the country, but without a complete understanding of the complexity of gender within these communities, the goal of sustainable livelihoods, and the achievement of the Sustainable Development Goal (SDG) 5 targets, is unlikely to be reached. In order to improve knowledge about gender, and provide policy makers with some guidance as to where interventions might be most useful, this paper analyses the negative gender norms and relations affecting women and men's participation in, and their benefit from, small-scale aquaculture. Qualitative findings from four villages in 2016 in the Ayeyarwady Delta and Central Dry Zone found that women and men have distinct and shared gender roles in small-scale aquaculture. We further explored how gender relations in the division of labour shape women and men's potential benefits from small-scale aquaculture. We conclude that policy interventions in pursuit of creating sustainable livelihoods in small-scale aquaculture need to be mindful of the gender in the development process. This would also help to inform projects, programmes and policy and assist to give the same level of attention for improved post-harvest practices as that of production by specifically targeting women in post-harvest interventions that will potentially benefit them and ensure sustainable livelihoods at the community level.

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# Digital Story Telling of Women in Fisheries and Aquaculture in Nigeria: Assessment of Their Roles and Contributions Using Specific Case Studies

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Women are significant actors in the fisheries and aquaculture subsectors of the economy in Nigeria. They play major roles in the marine and inland capture fisheries, aquaculture, teaching and research, management and policy decisions at the three - tiers of government in Nigeria. However, their roles are poorly evaluated and thus are rarely given economic value or recognition in Nigeria. The paper will attempt to give a brief overview of global and continental assessment of women in fisheries and aquaculture and relate this to what obtains in Nigeria. Hence, the goal of this study will be to evaluate the roles and contributions of women in all the value - chains in fisheries and aquaculture in Nigeria highlighting the scope of their involvement. Pictorial presentation of specific case studies will be provided by a blend of interviews, focused group discussions and key informants complemented with secondary data. The assessment of women will detail years of experience, their level of involvement, investments, empowerment, challenges and opportunities and contributions to the sectors. It will also investigate and document policies and interventions targeted towards encouraging and empowering women in specific value- chains. The prospects for their overall sustainability within the economic space will also be discussed. Deductions made would suggest way forward and next steps for Nigeria.

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# Gender in Aquaculture and Fisheries in Odisha: A Study on Worldfish Program

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In Odisha, women are involved and play multiple roles throughout the aquaculture and fisheries value chains. Local norms and practices which influences and informs their participation in and benefits they derive from their work in the sector typically work to favor men. Realizing the differences of the two gender groups in terms of roles and responsibilities; opportunities and constraints; decision making; and access to and control over resources; and the ways in which these differences impairs the development of the sector, disadvantaging women, government and non-governmental agencies have in the recent decade made women to be more visible in their policies and practices in the state. However, the recognition of women alone is inadequate to improve their position and enable greater equality. Gender needs to be both effectively integrated in development programs and harmful norms and practices addressed through strategic means. This study will explore and identify barriers and opportunities to enable equal opportunities for women and men to take up aquaculture activities in selected WorldFish project component in Odisha. It will do so by assessing the projects, project staff and beneficiaries using gender and wider social lens. The study will identify inequalities that exist within the institution and provide suggestions to address these inequalities. It will also suggest ways to prevent the project from perpetuating or further reinforcing existing inequalities within the communities. These suggestions could potentially be utilized to enable equal participation of women and men in and benefit they derive from aquaculture initiatives in WorldFish program in Odisha.

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# **The Role of Women in Coastal Region of Pekalongan and Tegal – Indonesia: A Value Chains Selection between Fish vs Others**

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The study is aimed to formulate a strategy to improve the welfare of women's household given the opportunities in fisheries versus other jobs. In Pekalongan people are sensitive in selection of value chain between fish and Batik (traditional textile industry). While in Tegal, the option is between fish and traditional restaurant called as "warteg". Both quantitative and qualitative approaches were applied to analyze the data. Atlas TI software had been employed to construct the triangulation from the qualitative data.

Wonoker sub-district in Pekalongan and Tegal Barat sub-district in Tegal were selected as the study area. People in the study area are sensitive in value chain selection, particularly for fish versus other jobs. An alternative portfolio to find the suitable jobs could be provided.

The results revealed that the women fishers in the study area were likely to involve in fisheries sector, particularly for the wives of fishers. While, for the younger generation are prefer to engaged in Batik and Warteg jobs since these jobs are more formal or closer to manufacturing or industry compared to the fisheries sector.

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# Increasing the Profit Position of Women Small Scale Entrepreneurs in the Rock Oyster Industry of Samar, Philippines

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The rock oyster (*Saccostrea cucullata*) value chain is predominantly a woman's work space. Mothers and grandmothers are active value chain players most particularly in the processing and trading nodes. This is the reality in the small island of Majaba, city of Catbalogan, province of Samar, in the Philippines. The locale, composed of 75 households only, is famous for its rock oysters ("sisi"). Despite its market potentials, the rock oyster industry has remained traditional and small, is family-based, has a very domestic source of demand, and a product quality that have much room for improvement.

Using the value chain framework, women's roles/activities, their access to the rock oyster and similar resources, as well as the benefits derived from the industry were generated. Data was gathered in early 2015, where ten rock oyster gatherers, four processors, two vendors and two consumers were purposively selected as respondents to a quick survey and key informant interviews.

Results showed that while women are gathering, fermenting, and selling "sisi," the men are in small-scale fishing. The couples' combined incomes, however, are still way below the poverty threshold. Women small-scale entrepreneurs are trapped in a low-profit, poor value-addition, slow-moving, and unstable "sisi" business.

Value chain enablers to include government agencies and the universities/training institutes, face the challenge of providing not just the capitalization, but the appropriate technology which will make possible the culture of "sisi" such that its supply is regular, constant and abundant. Technology for fermenting newly-harvested rock oysters, for packaging, and for longer shelf-life, as well as better marketing channels and distribution strategies are other ways to increase the profitability from the "sisi" industry. Moreover, research is necessary for science-based gender-responsive policy making, program formulation, and the drafting of the rock oyster industry roadmap in the locality whose island-residents depend on the sea and the "sisi."

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# **Socio-Economic Determinants of Gender among Small Scale Fishers Practicing Alternate Livelihoods along Coastal Andhra Pradesh, India –An Empirical Study**

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Small Scale fishers along the East Coast of India engage in a pluralistic pursuit of alternate livelihoods, wherein a new occupational enterprise replaces an existing one (instances of which are rare and remote) or complements the existing occupation, (mostly observed) either through integration or through additions to the list of already existing livelihood portfolios. Often, the stream of income generating activities arise from the opportunities provided by the ecological diversities and the interplay of land and water resources at their disposal. In this context, gender plays a pivotal role in defining the array of income generating activities in which fishers engage in. The present study attempts to delineate the socio-economic determinants of gender among small scale fishermen and women engaged in Alternate livelihoods in Visakhapatnam district of Andhra Pradesh. In addition to marine fishing, alternate livelihoods in which fishers engaged in were dry fish making, collecting and selling cashew from leased in plantations and working as wage laborers in Thermal power plants. The data was analyzed using descriptive statistics as well as non parametric tests such as Mann-Whitney U test. Among the 22 socio-economic variables studied, variables such as age and annual income of fishermen and fisherwomen showed a significant difference. (U=220.00, P=0.001, U=510.00, P=0.002 respectively). Gender wise, it could be observed that the mean ranks for men were higher for variables such as educational status, annual income, Occupational experience, credit orientation and marketing behavior whereas fisherwomen scored over their counterparts with respect to age, alternate livelihood participation, self-confidence, scientific orientation, risk preference, trainings undergone, managerial ability and decision making.

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# Occupational Hazard among Women Fish Smokers in Coastal Areas of Ondo State, Nigeria

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The study analyzed the occupational health hazards of fish smoking among women in the coastal areas of Ondo State, Nigeria and further proffered strategies for their management and control. Fish smoking combines the effects of drying, heating, and smoking coupled with salting. The pre-treatment involves gutting, splitting and smoking using firewood. Smoking is the oldest, convectional and most common methods used where the heat from the fire dries the fish while chemicals from the smoke impregnate the flesh. Simple random sampling technique was used in the selection of 120 fisher-folks as sample size. Descriptive statistics were used for the objectives while Pearson Product Moment Correlation was used to test the hypotheses. Fish processing, the activities associated with fish and fish products between the time fish were caught or harvested, and the time the final product is delivered to the customer is fraught with potential hazards and risks which are categorized into occupational, environmental, food safety and public health. In the study area, it was observed that female dominated the processing sector (70%) and majority are married and educated up to secondary level. They have spent 5-10 years in the fish smoking business. Results of correlation showed that positive and significant relationship existed between occupational health hazards and income loss. Major occupational hazards recorded in the study areas are; redness and swelling of the eyes which is the commonest, chronic obstructive respiratory diseases, stress related health problems sting from fish spines, knife cuts, snake bites while fetching firewood (physical), parasitic and pathogenic infection (biological), hazards from disinfectant used (chemical), broken bones and dislocation, back strain (ergonomic), prolong work hour and high mental demand (psychosocial). Fish smoking also has some challenges. Fish industry stakeholders should therefore ensure that guidelines and policies which promote an environmentally friendly and sustainable industry are instituted and enforced.

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# Gender Differences in Possession of Unused Livelihood Skills and Desire to be Involved in Livelihood Opportunities in Coastal Households in the Philippines

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This paper assessed the reported unused livelihood skills and the livelihood opportunities desired by men and women in coastal households using survey data collected from 467 men and 318 women from fishing and non-fishing households in seven coastal municipalities in the Philippines in January to August 2015. Results showed that seven in 10 men (70% from fishing and 76% from non-fishing) and women (74% from fishing and 69% from non-fishing) in coastal communities reported possessing livelihood skills that were not used to earn income. In fishing households, most men reported to possess carpentry/construction work skills (28%), agriculture production-related skills (19%), and retail business skills (13%), while women reported they were capable of running businesses related to agriculture production (23%), retail trading (18%), and food vending (12%). Similarly, women in non-fishing households reported having skills in agricultural production (23%), retail trading (21%), and food vending (19%), while the men reported to possess skills in agricultural production (22%), machine and electrical-related work (19%), carpentry/construction (13%), and driving (13%). The lack of capital (financial and equipment) was the main reason cited by majority of the study participants (54% from fishing and 54% from non-fishing) for not using these skills to earn income. In both fishing and non-fishing households, most men (81% and 78%, respectively) and women (87% and 86%, respectively) reported wanting to engage in other livelihood activities. Retail business was the most common desired livelihood activity reported by men (29% fishing and 26% from non-fishing households) and women (45% from fishing and 52% from non-fishing households). The need for additional income was identified as the main reason for wanting to engage in other livelihood activities. Appropriate livelihood support should be provided especially to fishing households to wean them from fishing activity to allow the fishery resources to rehabilitate.

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# Gender Differences in Contribution to Coastal Household Income in the Philippines

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This study assessed the contribution to household income of men and women in coastal households in the Philippines using survey data collected from 785 households (489 fishing and 296 non-fishing households) in seven coastal municipalities representing the three major groups of islands in the Philippines in 2015. The mean annual income of fishing households (PhP 110,445.80) was significantly lower (10% level of significance) compared to non-fishing households (PhP 124,381.00). In both types of households, there were men income earners only (64% in fishing and 48% in non-fishing households), women income earners only (1% in fishing and 15% in non-fishing households), and both men and women income earners (36% in fishing and 38% in non-fishing households). The men earned and contributed more than the women to household income: the men contributed 86% (PhP 94,594.05) and the women contributed 14% (PhP 15,851.73) to fishing household income, and the men contributed 60% (PhP 84,983.19), and the women contributed 32% (PhP 39,434.56) to non-fishing household income. More diverse sources of income was observed among women in fishing households and among men and women in non-fishing households. In fishing households, the major income sources of men were fishing (98%), animal raising (16%), and construction work (13%), while the income sources of women were market vending of agricultural products (20%), running a retail store business (15%), private employment (16%), and pension/conditional cash transfers (16%). In non-fishing households, the major income sources of men were construction work (21%), driving (21%), self-employed livelihood activities (17%), private employment (15%), and animal raising (13%), while women mainly derived income from private employment (25%), pension/conditional cash transfer (21%), retail store business (15%), government employment (11%), and owning a food-selling business (11%). Equal access to livelihood opportunities for both men and women in coastal communities should be promoted.

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# Role of Gender Focused Intervention in Haor Floodplain: Case of Women-Led Cage Aquaculture from Kishoreganj Haor Areas

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*Haors* are natural low-lying watersheds inundated for 5-6 months by flood waters across the northeastern part of the country covering 57 upozilas under 7 districts and home to about 20 million people. Capture fisheries has been the main livelihood for fishers supplying natural fish highly relished by people. With the decline of natural productivity of *haor* fishery, research funded by Krishi Gobeshona Foundation took initiatives to bring *haors* under selective aquaculture including better post-harvest practices to improve fisher's income.

Fishermen in *haors* are mainly engaged in fishing, while the fisherwomen involved in wetfish trading, fish drying, net mending, crafting traps and gears but never engage in aquaculture. Bangladesh Agricultural University with assistance from local NGO attempted gender focused interventions to bring the fisherwomen in to seasonal cage culture in 4 upozilas of Kishoreganj district. This paper discusses various dimensions of community participations in women-led cage aquaculture as an alternative livelihood for *haor* areas. In spite of social taboos and traditions restricting women to be engaged in fishery related activities outside home, the gender focused interventions found attracted both women and men in groups to the innovative model of cage aquaculture including ancillary activities generating backward and forward market linkages.

The interventions include formation of women groups from two distinct fishing communities of Kishoreganj - Ethnic Fisherwomen (EFW) and Mainstream Poor Women (MPW) groups, where 10 cages of Tilapia monoculture had been demonstrated with hands-on training and inputs. Results from women groups showed higher rate of adoption of cage aquaculture against traditional fishing with EFW groups compared to non-ethnic MPW groups. A 4-month cage culture study, having a cage size 27 m<sup>3</sup>, obtained 15.56 kg.m<sup>3-1</sup> and 14.52 kg.m<sup>3-1</sup> respectively in EFW and MPW with FCR values of 1.11 and 1.21 in that order ( $p > 0.05$ ). The produce of EFW group were sold by themselves in both wholesale and retail markets, while MPW took assistance of their husbands in selling fish only in wholesale. The profit margins lessened by 3.54% in the later then the former. However, the results of this study found encouraging towards adopting commercial cage aquaculture as viable alternative livelihood option involving fisherwomen for resource poor fishing community across *haor* floodplain.

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# Promoting Gender in Fisheries in Lao PDR

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Lao PDR has been highly commended in promoting equality between women and men and having a gender balance at the higher levels of decision making positions in every sector including fisheries. On the other hand, there is also a need to improve living conditions and quality of life for all women in fishing communities.

In order for the government to fulfill its commitment, there is a need to collect information and build up the capacity of all Fisheries staff to increase knowledge and skills so the needs of both women and men in fisheries and aquaculture can be appropriately addressed. These capacity building activities include learning from the field and study visits, looking at both good practices and bad examples as case studies. It is also beneficial to have exchange of experiences and share leanings with other sectors in Laos as well as with international organizations. Some of the projects implemented included research on how women especially from the rural areas, could solve problems they faced, particularly in the area of time availability and access to information and social services.

As to the government sector, women are present at both the ministry (10%) and department (15%) levels and 30% of village heads are women. Within the Fisheries Section, a Gender Advisor has been appointed, and Gender Focal Points are present in each section, division and each Provincial Agriculture and Forestry Office (PAFO), Provincial Livestock and Fisheries office (PLFO) and District Agriculture and Forestry Office (DAFO). Government officers and staff from central to district levels as well as from high to low positions understand about gender equality and give more priority to women to attend meetings and avail of scholarships.

At the community level, more people are becoming aware and have more understanding of the gender concept and 2 % of women in fisheries community become a hear of Fisheries committee Management (FCM) and 5% of local women have become One Village One Product (OVOP) trainers. Men help the women to do house work thus the women can have more free time to learn and have more knowledge and obtain more information.

In order to sustain the awareness at all levels, there is a need to continue building and strengthening capacities of local staff who work with gender-related activities, promote more gender-sensitive staff to decision making positions, continue to implement gender action plans at the community level, encourage gender mainstreaming in fisheries and aquaculture, and provide opportunities for women participation at national and community events.

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# Understanding Gender Dimensions in Small Scale Fisheries of Kep Province, Cambodia

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Undertaken in two fishery communities of Sangkat Okrosar and Sangkat PreyThom in Kep Province of Cambodia, this study aims to understand the information and knowledge gap that exists on gender aspects in fisheries. Primarily utilizing qualitative methods, such as, focused group discussions, participant interviews, direct observations, key informant surveys, etc., the study analyzed typical gender roles prevailing in households and communities. Men and women belonging to same and different households, who were directly involved in fishing activities, were the target respondents of the in-depth survey. Like in many patriarchal communities of Asia, men are considered the main earners of the households, while women are merely believed as their subordinates in the study area. Patriarchal beliefs have been guiding what men and women shall do in their households and communities, often treating women as inferior to men in most aspects. For the elected leadership positions, such as that of a fishery community leader, women's candidature is not welcome as they are considered less capable than men for the leading roles. Hence these positions have ever been elusive to women of the study area, signifying women's absence in decision-making roles.

While both men and women are significantly involved in various activities related to fisheries, venturing into the sea for fishing is a male domain. Women support men in their fishing endeavor at the sea with onshore activities such as, cleaning nets and vessels, cleaning and segregating the catch, processing and marketing the catch, etc. Based on above findings, the study suggests that the gender-biased and discriminatory perception against women shall be abolished in order to ensure equal participation of both genders in all fishery related activities. Likewise, in order to have women's full participation in decision-making, their candidature to elected leadership positions shall be welcome. Only with elimination of such existing barriers, meaningful participation of women in fisheries can be achieved which will in turn contribute to food security and poverty reduction.

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# Seaweed Farming in Western Visayas: Strengthening the Roles of Women

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Seaweed farming is not only a major contributor to the Philippine economy, but more importantly, also contributes to the livelihood of small-scale growers in coastal communities. In Sabang, Sibunag, Guimaras Province and Naburot, San Dionisio, Iloilo Province, seaweed farming is a major source of food and livelihood. Majority of the seaweed growers and traders are the womenfolk in the barangay, giving them the opportunity to earn cash and contribute to the well-being of the family. Although farming is often a family affair, most of the monitoring and management activities are done by women. The women and children participate in the staking of the longlines and tying the plants. Daily inspection of seaweeds to check for epiphytes and other unwanted organisms are included in the women's regular task. These activities are done alongside their household tasks. During monitoring, the women are immersed waist-deep in the waters, examining individual plants along the line, unmindful of the inconvenience and threat to their health. Actual management, often left to the women of the household, is converted into a family-binding activity. The women believe their participation in seaweed growing is household obligation and contribution to the family income and thus, has minimal monetary or labor cost valuation. Nevertheless, seaweed farming allows the inclusion of the womenfolk in the economic sector.

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# **Lens on Gender in Oyster Farming and Grouper Fish Farming in Vietnam**

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Photovoice (a method of giving cameras to participants to tell their stories) was used in this study to assess social impact of Australian government funding on community members in Vietnam engaged in aquaculture. One question in the study forms the basis of this presentation: 'Gender Roles in Aquaculture'. Findings from both male and female participants indicated a similar story that there was equality overall in Vietnamese aquaculture ventures, but that women sometimes did do the lighter roles. However the story was mainly one of equality and mutual acceptance, with jobs and roles for both males and females. This presentation has added value in demonstrating how Photovoice can be applied in aquaculture and fishing field research to gain authentic participant perceptions.

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# **Gender Equity and Women Empowerment in the Fisheries Value Chain in Bitung, North Sulawesi, Indonesia: A Case Study**

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Bitung city is the centre of fisheries in North Sulawesi and in the Eastern Indonesia region, with tuna fisheries being its prime fishery product. Tuna fishing is predominantly a male-dominated industry. Although women play key roles in post-harvest activities, their contribution to the industry has often been undervalued and unappreciated. Therefore, a gender analysis was conducted to understand the different roles and interactions among male and female actors along the tuna value chain and to identify key issues and constraints to achieve gender equality and women empowerment within the scope of USAID Oceans; and to map out strategic areas of intervention to empower and build capacity of women along the fisheries value chains at the learning sites.

Through literature reviews, field data collection and the conduct of a value chain mapping workshop, the following findings have been established. Men control the access to physical resources (ships, fishing gear and industrial-scale processing units), while women only gain access to small-scale processing units and local marketing activities. Access to capital and information resources, especially for small-scale ventures, are most often dominated by women. Both men and women have roles in Bitung's fisheries sector. Men complete more heavy physical tasks like fishing and transporting fish, while women are more involved in fish processing and marketing. The participation of women and men in fisheries value chain is relatively comparable. Men were found to be more knowledgeable in fishing activities, while women have more knowledge in fish processing and marketing activities. These gender roles are reinforced in the community through beliefs and perceptions that women are not suitable for fishing, because of perceived physical limitations or their responsibility to take care of their household. Time spent by women and men in the tuna value chain is relatively equal. Women spend more time than men in fish processing activities, but outdoor activities along the value chain are relatively comparable between men and women. Men and women have equal legal rights and status in all activities of the tuna value chain. Empowerment and decision making varies across the value chain, but on average are relatively equal.

Following these findings, a number of practical recommendations for subsequent actions by the key stakeholders in the areas of policy, research and interventions. The recommendations can be summarized into 3 categories into Women Empowerment, Services and Capacity building. Women empowerment includes strengthening existing groups of women fish processors, formation of new women groups that will start business as fish vendors and fish processors, capital assistance programs for women-owned businesses and a balanced role between women and men in public decision-making. Services category includes provision of day care facilities for female workers in fish processing plants, accompaniment programs for women entrepreneurs to conduct business diversification, market expansion, product development, packaging design, etc. Capacity building includes tailored training to improve women's entrepreneurial, managerial and technical skills, capacity development for women entrepreneurs to gain greater access to raw materials and financial resources.

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# Shrimp Industry Gender Gap in India: Case of Maharashtra State

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In India, Maharashtra state, offers vast scope for development of brackish water aquaculture. A study was done in order to assess the gender gap in this industry. The study revealed that in shrimp farming during 1990's, participation of women was seen in pond construction, seed collection, feed making and post-harvest. However, with modernization, pond construction is now done by machines, wild seed collection has been replaced by procuring seeds from hatcheries, feed making is done by feed industries and marketing is done through sea food companies. All jobs in which women were involved have been eliminated. But there has been consistent increase in shrimp production resulting in profits to shrimp farmers who are usually men. There are 165 registered shrimp farms in Maharashtra and 6% are registered in women's name but at ground level these are run by men. Out of 165 farms, 45.7% have their own ponds and 54.3% had taken ponds on lease. The reasons for poor participation of women are lack of knowledge/skill, high investments, high risk, remote location of farms and lack of favourable policies. Masculinity of capital seems to have inclined towards investing resources among men. A couple of women in shrimp farming cannot be showcased as symbols of women empowerment. However, efforts to bring women farmers into the mainstream observed one such efforts is that 15th October has been earmarked as Women Farmers Day (Mahila Kisan Divas) by Government of India. It is expected that an inclusive approach, from policy to implementation, will bring women in brackish water shrimp farming into mainstream.

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# **Gender Participation in Extension Programme in South Reclamation Project Affected Families**

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South Reclamation Project-Project Affected Families (SRP-PAF) is a non-government organization with 13 member barangays comprising 3,700 households in the City of Cebu, Philippines. Cebu Technological University (CTU) is an institution mandated through Republic Act 9744 to deliver instruction, conduct research and perform relevant and responsive extension services that addresses community needs. Descriptive-survey method was used in the study employing triangulation strategy. There were 65 respondents of the study all of them are members of the SRP-PAF organization and had availed the extension services of CTU-Main Campus, Cebu City. Majority of the respondents were female (92.31%) with only 7.69% male. Most of them were middle-aged (45-54 years). 52.31% were unemployed, 40.0% are self-employed and 7.69% are employed in public and private sectors. Roughly PhP 5,000.00 to PhP 15,000.00 is the gross family monthly income in most of the households. The extension program as perceived by the beneficiaries was "Highly Effective" based on the identified parameters. It is concluded that the program extended had an impact in the economic, social and environmental aspects. It is recommended to sustain and enhance the implementation of the extension program.

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# **Inclusive Value Chains: The Case of Seaweeds Farming in Zamboanga Peninsula, Philippines**

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A number of studies on seaweed productivity enhancement have capitalized on value chain analysis to identify upgrading solutions that would advance the industry. While past value chain studies on seaweeds have usually presented the role of the poor farmers and participation of women in the industry, providing details on these has been limited. This paper transcends the conventional description of roles of key players in the value chain of seaweeds in Zamboanga Peninsula in the Philippines with the accentuation on gender. It also estimates the value additions done and the income gained by the key players, as well as identifies constraints and possible points for entry or increased participation, particularly of the marginalized sectors. The framework for rapid appraisal of fisheries management systems (RAFMS) within the value chain context was adopted as a guide to the study. Profiling and assessment of the industry involved secondary data collection. Mapping the chain involved primary data collection through observation, key informant interviews and focus group discussions. The identification of constraints and potential solutions employed the participatory systems analysis as a complementary tool. Results of the study reveal that though men are very visible in the different nodes of the chain, women have significant involvements in production, post-harvest and even in marketing stages. Findings also display that the gains of the poor men and women farmers are minimal in comparison to the profits of the other players in the chain. Although women are not directly paid for their efforts considering that seaweed farming is generally a family venture, they contribute a considerable share in the family income. This indicates that the need to integrate gender in value chain development may also prove valuable in value addition or realization of greater value added, ensuring household income stability and enhancing sustainability of the resource.

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# **The Triple Roles of Fishers' Wives to Support Their Household Economy: An Empirical Study in Tegalsari and Muarareja Villages, Tegal – Indonesia**

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This study aims to explore the triple-role of fisherman wife, their contributions to the family economy, and determine the strategies of the wife in retaining the continuity of household in the coastal area in Tegal city. Purposive sampling of 100 respondents was carried out. In-depth interviews with the key persons was also conducted. It was observed that fishermen wives have triple-roles. They work to earn income, become housewives and are active in social life. Contribution of fisherman wife in increasing contribution to family income at 38.81%. Several strategies to empower fishermen's wives with economic, socio-cultural and technical approaches in the analysis was done using qualitative analysis tools ATLAS.ti and can be one of the considerations in realizing the economic independence of fishermen families.

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# **An analysis of social relations outcomes on women participating in small scale fish value chains on Lakes Malawi and Chilwa**

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Understanding women's social relationships and their roles in the value chains is a critical first step in designing strategies for the development of inclusive fish value chains. This paper provides a synthesis of findings for a study that was undertaken to examine the perceptions and social relations outcomes on women participating in small scale fish value chains in communities' dependent on fisheries at Kachulu beach on Lake Chilwa and Msaka beach on Lake Malawi. The objectives were two fold to determine the social relation outcomes on women participating small scale fish value chains and examine the obstacles related to women's participation in the value chains. Qualitative methods were used to generate information following a case study approach to assess the perceptions about women participation in the role of fish collectors. Social relations framework and critical institutionalism approach was used in the study. Focus Group Discussions were held with the value chain participants and Key Informant Interviews were also conducted with value chain participants, local leaders and extension staff. The results demonstrated that positive social relations inculcate hope among women to meet their basic needs for women who are involved in the value chain affect their whole life cycle. The research found that there are both positive and negative social relations exist affecting empowerment pathways. In the context of obstacles, the research found the social institutions that limit women's empowerment including early marriages, domestic violence and polygamy. The research has generated knowledge that will contribute to deepening understanding the gender relations within the value chains in the African Great Lakes Region. The findings also show the critical role that women play in the fish value chains and how they can influence change in values and practices of fisheries resource managers. Overall, this insight will enable fisheries managers to gain support to furthering opportunities for promoting gender responsive practices at all levels of the value chain.

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## **Session II: Gender-disaggregated statistics**

# Vulnerability Levels among Male and Female in Malaysian Fisheries and Aquaculture Community

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This paper aims to identify level of vulnerability by number of vulnerability type (VuT) among vulnerable community member (VCM) by sex disaggregated in Malaysian fisheries and aquaculture community (FAC). Vulnerable in this paper is referred to economic disability to work and generate income and 7-conceptual definitions obtained in literature- i) older person, ii) poor single mother/father, iii) handicapped person, iv) bed ridden care givers (BRCG), v) suffering of serious illness (diabetic, heart problem, kidney failure, hypertension, and cancer), vi) poor and living alone, vii) child labor, and viii) others. A questionnaire developed for this study and distributed by the community leaders (CL) to respondents in their respective village at Kuala Kedah and Langkawi. Fifty male and female respondents were randomly selected by the CL at Langkawi and Kuala Kedah respectively. A total of  $n=219$  data collected and exceed the sample size ( $n=200$ ) because 300 questionnaires distributed by the CL to capture respondents rejection to participate. Data consist of 75 males (34.25%) and 144 females (65.75%); 41.5% of respondents have single VuT and 58.5% multiple VuTs. Thus, this study categorises two levels of vulnerability - vulnerable (single VuT) and high vulnerable (multiple VuT). Among 100% of male and female respondents respectively, there are 46.7% male and 38.2% female are vulnerable category; and 53.3% male and 61.8% female respondents in multiple VuT category. This paper concluded that more male suffer single VuT than female; and more female suffer multiple VuT than male respondents. Therefore female are more vulnerable than male. This paper may recommend policy and program guidelines related to VCM should be gender sensitive. The vulnerable category can be assisted to become transient vulnerable group which can work or running an enterprise to generate income.

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# Gender Mainstreaming in Fisheries' Household in Indonesia

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Women play a significant role in fishing activities, but their role has not been taken into account and involved in fisheries development. The general objective of this research is to analyze the role of gender in fisheries households in Indonesia. The specific research objectives are: 1) to know household characteristics factors which is related to the role of gender in the fishery household; 2) to know the socio-economic conditions; 3) analyze the relationship between household characteristic factors which is related to the role of gender in the fishery household; 4) analyze the relationship between socio-economic conditions with decision making in the household fishery.

The research method used in this research is a combination of quantitative and qualitative methods. This combination is done to enrich the data and better understand the social phenomena studied. Qualitative approach used in this research is descriptive case study method, to know the description of research location and general description of respondents. Qualitative data was obtained through in-depth interviews and direct observation at the research sites. Quantitative approach used is to process data survey and census results collected by national statistics Indonesia. This quantitative research is explanatory research explaining the causal relationship between variables through hypothesis testing.

The result shows that household characteristics and socioeconomic factors are linked to gender roles and decision-making in fisher households. The community attitude may be influenced by work opportunity and culture through family education. The coastal fishery development program which is gender sensitive has the most chance and is considered important by stakeholders to be implemented in human resource development program for both men and women.

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# Fisheries Professionals of India: Gendered Analysis of Profile, Academic Performance and Career Growth

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As the knowledge revolution is increasingly transforming the economies, cultures and institutions across the globe, fisheries have to be alive to this reality in order to seize the opportunities. In India, fisheries and aquaculture are vibrant economic activities, and has been one of the fastest growing food production systems during the last three decades. Considered still a sunrise sector with large untapped growth potential, the sector needs adequate and quality professional human resource to drive the fisheries development forward at this juncture. At present, 3 Fisheries Universities and 26 constituent colleges generate nearly 1600 professionals in the form of BFSc, MFSc and PhDs every year. Contextualising the higher fisheries education scenario, this study maps the profile of students entering fisheries education and tracks their academic performance and career growth from a gender perspective by taking the case of ICAR-CIFE. The findings, for the reference period of 1995-2015, indicate that there has been a gradual shift in the socio-economic background of students from a predominantly rural, agrarian, lower middle class, non-English medium of instruction in late 1990s to a more diverse background including from urban and middle class families in recent years. More importantly, higher fisheries education has inched towards gender parity with females constituting more than one third of total students. Academically brilliant and often found to outperform their male counterparts, career growth of females is a mixed bag though they have begun to break the glass ceiling. Females predominantly settled in sedentary and secure government jobs both in R&D and development departments as compared to the private sector jobs in aquaculture and processing industries. The salary-income levels of female and male professionals were found to be almost similar indicating economic parity. Positive trends in literacy rate and enrolment in higher education on one hand and formalisation of fisheries industry on the other hand would help make the sector more inclusive with equal opportunities for both men and women.

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# Work Participation of Fisher Men and Women among Coastal Fishing Communities: A Comparative Study of Two Indian States

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Fisheries sector is an essential source of livelihood for 35 million people who are directly engaged in fishing and fish farming, majority of them being small-scale, artisanal fishers. Around the world, women participate in a wide range of fisheries activities including inland fishing and aquaculture as workers (paid and unpaid) mainly in pre- and post-harvest operations, as caregivers of their family and in maintaining social networks. According to FAO (2008), women make up nearly half (46%) of the fisheries workforce in nine primary fishing countries with India (72%) and Nigeria (73%) having the highest proportion. India has 3.99 million fisherfolks of which 48 % were females. Nearly 25% of the Indian fisherfolk are active of whom 93.6 % are actively engaged in fishing, and remaining are involved in fish seed collections that is dominated by females (57.4%). Tamil Nadu state in southern India ranks first and has 20.1% of the total fisherfolk of India. About 23% of them were found to be engaged in allied fishing activities, which has different levels of significance in Maharashtra (42%) and Tamil Nadu (12.8%). Of them, 66% were females (increasing from 48.3% in 2005) mainly involved in the marketing of fish, peeling, curing and processing. Further exploring the extent of women participation in fishing and allied activities over the years in Tamil Nadu and Maharashtra, this paper attempts to identify the underlying factors which affect women's participation. Between 2005 and 2010, fisherfolk population grew 13.3% while literacy grew merely 1.3 %. The number of fisher families where only women were involved in fishing and allied activities witnessed 17% increase during same period. Relating the demographic data with fish landing data, the study finds underlying patterns for varied work participation rate across space and time.

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# Profiling the Relationship between Vulnerability Type and Background of Single-Vulnerable Community Members in Malaysian Fisheries and Aquaculture Community

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This paper aims to profile the single-vulnerable community members (S-VCM) in Malaysian fisheries and aquaculture community (FAC). Only part of data  $n=90$  (41.5%) from VCM ( $n=219$ ) study was used. The S-VCM refers to VCM with one vulnerability type (VuT). Initially there are 8-VuT categories in VCM study and this paper only presents 6-VuT associated with S-VCM - i) serious illnesses, ii) handicapped, iii) single parents, iv) poor elderly, v) bed ridden care giver (BRCG); and vi) stay alone. The 2-VuT omitted were child labour and other category because no respondent and one respondent in each category respectively. The profiles of S-VCM are presented by the background variables - sex, academic background, house ownership, income, and location. Data was collected at Langkawi and Kuala Kedah of Peninsular Malaysia. The results show women are more vulnerable than men; Langkawi S-VCM respondents are more vulnerable than Kuala Kedah S-VCM respondents; and all S-VCM except of serious illnesses category are high majority earn income below poverty line. This paper concluded two important points - the S-VCM respondents are associated with gender, poverty and geographical locations; and 2-VuT category (poor elderly and the BRCG) need high attention because the elderly were poor and 81.1% had no schooling as well as the BRCG at 66.7% had no house ownership. These factors may affect negatively on their financial security at old age. Relevant policies and programs are essential to increase the wellbeing of the elderly and the BRCG in FAC and should be gender and location sensitive as well as focusing to poverty eradication.

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# Study of the Deteriorating Social Status of Fisherwomen in Patna Fish Market Bihar India

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Fish is one of the most easily available edible source of low-fat protein, constituting an indispensable sector of food production as well as a dietary supplement to the food. In India approximately 50% of the total population represents women and add up to one-third of the labour force. India is the second largest country in global fish production, in which 5.4 million people are actively involved. Among 5.4 million fisher-folks, 3.8 million or 70.37% are fishermen and 1.6 million or 29.63% are fisherwomen. In spite of significant contribution, women face a lot of difficulties in fish markets. In order to investigate the social status and the day to day difficulties of women in fish markets of Patna, Bihar, India we conducted a structured questionnaire based survey. Our survey was conducted in government authorised and local fish markets was male-dominated comprising of the fish merchants/contractors and fishermen involved in catching and transportation of fishes. The local markets in contrast had majority of females actively involved in fish processing, cutting, and marketing. Majority of women in these markets were illiterate though being proficient in fish cutting, processing and marketing which were due the learning the trade over generation. Regardless of being a caretaker of the family-affirming a social culture of the community, these fisherwomen were boycotted for claiming their fundamental rights. They are not provided a well-secured government authorized platforms at local markets due to which they are constantly under fear of harassment. These women being ignored handle liaison work on behalf of their fishermen husband which include market dealings with different institutions for credits in fisheries operation. You can well imagine being illiterate these fisherwomen play such a multitasking role so efficiently what if they are properly trained, educated and provided basic amenities.

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# Changed Gender Role in Higher Education, Research and Employment in Aquaculture and Fisheries in Bangladesh: Opportunities and Challenges

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Bangladesh has made remarkable progress in fisheries and aquaculture in recent years with steady economic growth which can partly be attributed to the production of skilled fisheries graduates from universities and their subsequent absorption in production under private and public sectors. There are emerging problems of disparity and gender exclusion across the graduate fisheries workforce coming in the way fulfilling their professional commitment towards research and development needs of the country's aquaculture and fisheries sector.

Tertiary level fisheries education was started by Bangladesh Agricultural University (BAU) in 1967, now about 14 public universities other than BAU offer fisheries course producing over a thousand of graduates every year. From the early seventies, enrolment of female in fisheries studies was negligible like other agricultural education in the country. Under the changed scenario, 52% of the enrolled students under faculty of fisheries (FoF) in BAU was female in 2017 compared to only 10% female students enrolled in 1997. This paradigm shift in improving gender inequality at tertiary level education in fisheries is the reflection of gendered change in higher education in Bangladesh.

The employment opportunity for fisheries graduates is very limited. The cumulative demands from public sector research and extension services would be less than ten percent of total graduates produced. It is often blamed that patriarchic mindset of employers tends to oppose recruiting female graduates. While opportunist mentality and field-fear by female scientists to involve in research and development works at remote place can restrict harnessing benefits from gender equality attained in tertiary education. Present distribution of female fisheries graduates under DOF, FoF and BFRI found only 12, 19 and 22 percent respectively suggest lack of gender parity in those institutions.

This study aims to unpack the extent and magnitudes of higher educated workforce, their research opportunity and employment conditions including changes in mindset and attitudes over time using a gender lens. This paper will also attempt to highlight the relative opportunities and engagement of male and female fisheries scientists under different workplaces and social environments across public and private sector institutions in Bangladesh.

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## **Session III: Gender and the seafood industry**

# Managing Mercado Del Mar, A Case of Women's Leadership in the Fishing Industry

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Women's participation in post-harvest activities in Mexico dates back from prehispanic times when women would be salting, drying and selling fish in rural markets. Currently, women's work in fisheries has been identified all along the value chain, dominating in post-harvest and administrative activities. However, most studies talk about women's work in low paid employment and not in influential positions. Studies about women's participation in the fishing industry as business leaders are not so common in literature.

Considering this, the present study aims to explore the diversified role played by women in the Mercado del Mar, the second largest wholesale fishing market in Mexico, mainly taking into account their role as business leaders, but without leaving aside the cleaning, packing or loading fish jobs.

The methodological approach used in this paper was essentially based on in-depth interviews in the most businesswomen in this fish market. In addition, observation of the daily activities in the market and informal interviews were carried out.

Results show two types of business leaders: those who started the family business as middle-women, peddling fish on a small-scale basis and have risen to influential positions in the second wholesale fish market in the country. The second case is those women that inherited the business from their parents and learned how to manage it since they were young. Opinions were divided among those who think that being a woman presents an extra challenge for becoming a business leader and those who think that it is only a matter of personality and education, but does not have anything to do with gender.

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# The Case of a 29-Year-Old Women's Association of Small-Scale Fish Farmers and Processors

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The presentation describes and analyses the evolution of a village-based association which rose from farming milkfish and selling the fresh harvest to the neighbourhood to its current status of a medium-scale processor of 12 product forms distributed through wholesalers, retailers and institutional buyers in various provinces and the capital city of Manila, Philippines. Established in 1989 with 15 members operating a communal milkfish aquaculture pond to raise milkfish to table size, and selling the fresh harvest from house to house, the Binmaley Rural Improvement Club (BRIC) has expanded to 118 women and two men members, 85 of whom as active. From selling fresh fish to the neighbourhood, they progressed to processing two traditional product forms and, eventually, to a variety of higher value products – that make use of almost all parts of the fish – sold to a wider market.

The factors that have enabled the association to attain its current status as an effective actor in the value chain of its products, and those that have endowed it with certain attributes of strength, empowerment and sustainability, are described and analysed.

The presentation draws from two main outputs of the FAO project, 'Strengthening the Capacity of Organized Small Aquaculture Farmers to Create a Market for their Product and Participate Effectively in the Value Chain': (1) a case study – using the value chain framework – of the association conducted in 2017; and (2) the results of a training-workshop on value chain development and participation in November 2017, in which the case report was presented along with five training modules.

The main beneficiaries of the training were selected association members. They are based in Barangay (village) Buenlag of Binmaley town, Pangasinan Province, Philippines. They were organized under the Rural Improvement Club programme of the government.

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# Gender Participation in the Food Safety Implementation of Boneless Siganids *Siganus Puellus* Technology

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Food safety is vital in fish processing activities. This paper aims to determine the gender roles on how food safety be implemented in boneless siganid processing activities. This study utilized the experimental and descriptive methods of research employing the process of coconut water treated boneless *danggit* production observing the good manufacturing practices (GMP) and hazard analysis critical control point (HACCP) protocol after analyzing the microbial content of boneless *danggit* in Taboan market. The experimental process of coconut water treated boneless *danggit* had  $3.3 \times 10^3$  cfu/g which had lower count compared to the commercial samples which had bacterial total plate count of  $1.0 \times 10^4$  cfu/g. The process had been disseminated to the five groups of Bantayan, Cebu, Philippines fisherfolks who engaged in boneless siganids industry emphasizing the GMP and HACCP protocol of processing. Out of 50 fisherfolks engaged in boneless siganid industry, 70% are female with age bracket of 35-55 years old. Most of the female responsibilities in the industry are filleting, salting, drying and packing the dried products, while male did the fishing, chilling of raw siganids and transporting of finished products. The food safety were integrated in the salting and drying processes by using chilled coconut water and drying cabinet instead of exposing the product under the heat of the sun since proliferation of flies couldn't be controlled. Continuing food safety and HACCP integration to all boneless siganid industry of the island is recommended.

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# Can Small Scale Fisher Women Take to Online Retail? Evidence from a Social Experiment with Mumbai Fisher Women

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The fisheries sector is a significant source of food and livelihood for people living in the coastal areas, as it supplies animal protein as well as income to many households. Across the world, women in fishing communities have been observed to participate actively in the maintenance of their families and play a vital role in fishing, processing and marketing, the latter being the prime occupation for majority. In India, women form 48 % of the total fisher folk population and about 82 % of those engaged in marketing. Marketing of food products including fish is witnessing a paradigm shift with the advent of modern retail formats and e-commerce/online retail. While this has begun to revolutionize the way fish is sold and consumed in urban India from consumers' perspective and paved the way for entry of new players in fish retail, the traditional fisherwomen retailers are conspicuous by their absence in this new value chain. This study addresses the willingness and ability of fisherwomen to profit from online retailing using smart phones. Using a structured interview schedule, primary data was collected about socio-economics, market profile and willingness to do online sale from 120 small scale fisherwomen of Mumbai, India. Many of these women were traditional retailers (74%), 69.5% had schooling and 43.8% among them were smartphone users with 17% of them using internet for more than a year. It was found that majority of women (82%) were keen to become part of the new modern marketing system. Based on this a mobile app prototype was developed and tested with 15 fisher women in the Mumbai western suburbs. The mobile app prototype remained operational for two weeks. The detailed feedback on mobile app design, usage interface, selling and buying process from both fisherwomen sellers and consumers were collected and analyzed for further refinement of the mobile app. The paper presents salient highlights from the study with special focus on the experience of fisherwomen in the modern online retail format and what it holds for their future. The social experiment has proven that even small scale fisherwomen can become active partners and benefit from modern online retail provided a customised mobile platform that enables collective participation is made available. Necessary capacity and confidence building support along with handholding in mobile app usage are found to enormously help in the process.

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# **Profit or Social Capital? A Case Study of the Motivations behind Seaweed Women's Groups in Indonesian Villages**

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The Government of Indonesia provides financial and other support to rural women to form, register and operate seafood production and processing groups. There are currently 186 groups registered in South Sulawesi, with more than 1,200 women involved. All of the groups are less than 5 years old with 33 reportedly processing seaweed exclusively, 69 both seaweed and fish, and the remaining 84 fish exclusively.

In this paper we explore the motivations of women to be engaged in seaweed processing groups, as well as their satisfaction with the perceived financial (profit) and non-financial (social and human capital) benefits from group membership. We used a novel Wellbeing-based method for Impact Evaluation approach (W-IE), a 'wellbeing game' and a questionnaire, to collect face-to-face data from 74 women from 17 groups in 9 villages around Makassar, South Sulawesi.

Increased knowledge (23% of respondents), desire to succeed (i.e. empowerment, 24%) and increased income (45%) were reported as the main motivating factors to join the group. The positive impacts of seaweed processing and group membership that respondents were satisfied with (in decreasing W-IE order) were: creation of social networks; improved awareness of and access to drinking water; sharing and learning new skills; cleaner natural environment; having their own business in the village; having more money for basic and secondary needs; having a job that they enjoy; and, the ability to purchase a motorbike.

These findings highlight that the crucially important motivational factors, and the perceived positive impacts of processing/group membership, are not only financial but include those that affect wellbeing more broadly. The policy implications are that the initial positive impacts are, to some extent, coupled with the acquisition of wealth, but perhaps are more importantly laying the foundations for longer term human and social development through networking, learning and increased awareness of environmental and health issues.

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# Women's Entrepreneurship in Aquaculture: Learning from the Existing Positive Deviators

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Gender equality in Bangladesh has seen significant positive change over the past few decades. While substantive progress has been made in women's health and education, progress in relation to women's employment, asset ownership and roles in decision making still lag behind. Change has been slower in areas where power and resources are at stake.

The aquaculture sector in Bangladesh is thriving, with a tripling of actors in every segment of the value chain but women are not being able to equally avail these opportunities. Across the sectors of inland aquaculture, inland capture and coastal fisheries, women's few overall entrepreneurial involvement has been in in small, micro or medium sized enterprises. Self-employment in agriculture is often the sole livelihood choice that women in rural areas have but socio-cultural norms and stereotypes hinder women's abilities to take up meaningful entrepreneurship and benefit from it. Those women who do manage to become entrepreneurs face bigger vulnerabilities, such as lack of market information and exploitation by other businessmen. Understanding and addressing these barriers to entry and challenges faced by existing entrepreneurs can help increase women's involvement here.

The study takes an in-depth look into those examples in Bangladeshi society who have moved beyond social bounds to take up roles that go beyond the generally accepted ideals of what a man or women are expected to be or do, i.e., 'positive deviators'. The positive deviator approach looks for solutions to change from within the community itself. Positive deviance has been used in various ways but it has not as widely been used to find deviant behavior around agriculture and gender. In-depth understanding of the life histories of these positive deviators will help devise methods to foster transformative change in the livelihood choices men and women can make beyond the norms that restrict their lives.

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# **“The Path Forward: Breaking the Cycle of Inequalities in the Seafood Industry”: Results of a Global Survey Carried Out in 2017**

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Quantitative studies have evidenced that the gender division of labour in the seafood industry is critical. When women represent 50% of all seafood workers, they are consistently over-represented in low skill, low paid, low valued positions and remain mostly absent at the other end of the value chain. By contrast, decision taking and policy making positions are dominantly held by men.

The “Gender on the Agenda” survey carried out in 2017, was meant to question seafood professionals of both sexes about how they perceive this pattern which happens to be universal. The objectives of the survey were threefold (i) To collect perception of seafood professionals on the gender division of labour in the seafood industry; (ii) To identify a range of good practices and impactful initiatives that would support gender equality and facilitate the change toward a more gender inclusive industry; and (iii) To contribute to the knowledge and offer a foundational understanding on the issue.

The 700 responses obtained through both closed-ended, multiple choices and open ended questions help to draw a rather good panorama of the situation. Respondents were specifically asked to present, if any, the barriers that women face in the industry and as importantly to report positive initiatives they have experienced or that they believe would be impactful at promoting gender equality.

This exploratory work reinforces conclusions identified elsewhere (high gender diversity and great inequality, lack of awareness, specific barriers such as misogynistic culture) and suggests new paths forward to break the cycle of inequalities.

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# **Migrant Women's Strategies to Cope with Exploitative Employment Practices in Thai Seafood Sector: A Case Study from Rayong and Trat**

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There is considerable literature on the exploitation and abuse of migrant men in the fisheries sector in Thailand . However, there are few studies on the ways in which migrant women are exploited in the seafood sector. Women migrants in the seafood sector suffer from multiple exploitations, both direct and indirect, in terms of the nature of work, working conditions, terms of payment, and living conditions. The terms of payment and working condition of men migrant seafarers also affects migrant women's lives indirectly.

Cambodian men who work as seafarers are paid a small advance each month, and a lumpsum at the end of the contract. Because of this, they are unable to send home remittance, and women are forced to migrate to Thailand and work in the seafood sector to support themselves and the family. Women are paid on a daily or weekly basis, which is sufficient for subsistence, but doesn't allow for savings, or planning for the economic future. Men's income is paid in a lumpsum (after many deductions), and hence, men have control over decision-making over how the income is used. Women live and raise their children alone in Thailand, while men are at sea. This raises concerns about double burden as well as safety in a new destination. Migrant women have developed coping strategies to deal with the exploitative conditions they live and work in.

Based on indepth interviews with 40 migrant Cambodian women working in the seafood sector in Rayong and Trat provinces of Thailand, this paper will present the key issues that migrant women in seafood sector face, and the coping strategies they have developed to deal with these issues.

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# **Tuna Fisheries Gender Analysis: Case of General Santos, Philippines**

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Gender differentials in roles/relationships, in gender issues/needs along the value chain were identified in a 2017 USAID-assisted gender analysis of the tuna fisheries in General Santos, Philippines. Recommendations for policy, research, and action to address concerns that emanate from gender differentials particularly along eco-systems approach to fisheries management (EAFM), and catch documentation and traceability (CDT) are generated towards the promotion of women's economic empowerment and gender equality. Study areas are General Santos City and selected sites in Kiamba and Glan, both of Sarangani.

A gender-responsive value chain analysis (GRVCA) was used as the framework along USAID's six gender dimensions namely: access to assets, beliefs (including knowledge and perceptions), practices and participation, time and space, legal rights and status, and power and decision making. Data were gathered for both municipal and commercial (handline and purse seine) fisheries. There was a survey involving 111 male and 114 female respondents. Moreover, sixteen key informant interviews for value chain players and enablers, and 8 focus group discussions were conducted.

Findings reveal that men and women have overlapping roles along the tuna fisheries value chain, both at home and at work. This is more evident in municipal fisheries. In any fishing scale, women's tasks are less physically challenging, and are characteristically extensions of homework, being into nurturance roles. Men, on the other hand, are mostly at sea and in the heavy-duty fish processing work spaces.

The gender issues revolve around gender equity and women's empowerment, EAFM and CDT, human welfare, and industry issues that impact on women's roles, opportunities/benefits. Common issue to both value chain players and enablers is the low level of awareness/knowledge on the CDT/EAFM. All stakeholders are willing to learn more and be deeply engaged in the pursuit of higher incomes, safer food supply, and wider work spaces for women.

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# The Challenges and Empowerment of Women Fishery Entrepreneurship Groups in Japan: Examining the Steps Taken by the *Umi Hito Kurashi* Forum

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Both the amount of fishery production and the number of fishers are decreasing in Japan. Income earned from fishing is also static. Most of the younger generation are reluctant to enter the fishery industry. Many wives of fishermen have launched fishery-related small businesses in order to help overcome this situation. Their most important activities have been the processing and marketing of fish products. When these women started their businesses in various locations (around the year 2000), they didn't know what kind of commodities would be successful, or how or where they should sell them. They also had little opportunity for administrative training to meet these needs. The authors have each worked to gain an understanding of the issues facing women in various fishing communities, and have offered advice to these women on an individual basis. Through these experiences, we came to believe that women in fishing communities all over Japan needed opportunities to share their issues and experiences and exchange information. We created a volunteer group called the *Umi Hito Kurashi* forum (roughly translated, the "Forum for Sea, People, and Life") in 2003. We started organizing a symposium in the same year. The forum has a face-to-face meeting annually. A theme selected by forum members serves as the focus of the discussion for each meeting. In addition, we publish reports and booklets and hold small seminars for gathering and sharing information and resources for fisherwomen to increase their knowledge. This is now the fifteenth year since we started these activities. We will discuss the following three questions. Firstly, how does the forum benefit women's fishery entrepreneurship groups? Secondly, have fishery women increased their empowerment through this forum? Thirdly, how can we support the empowerment of women in fishing communities in the future?

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# The Current State and Problem of the Role of the Woman Organization in Fishing Community

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The aging rate of Japan was 27%, and that of the fishing communities was 37% in 2016. To cater to the rapidly aging society, the Japanese government aims to develop a regional comprehensive care system. In order to realize this system, it is premised that services related to living support are provided by local governments, local volunteers and NPOs. However, it is difficult for the fishing communities located far away from the densely inhabited districts to receive appropriate provision of life support services. In fishing communities, women mainly play a role in supporting local elderly people, even now. In particular, there are many cases where woman's group of FCA is the center of these activities. The activities of woman's group of FCA provides assistance for the elderly including day-to-day voice calls and food service to the elderly administration of salons of the elderly, and training of helpers. However, these activities are often free volunteer activities, and it is difficult to maintain activities while the female staff members are aging and there is shortage of younger volunteers. The women who are doing these activities, opine that they feel motivated by performing these activities, and that the number of such associations in the area has increased. In some case, for the women, the food distribution service is a business.

In this study, we will discuss the roles that women played in the fishing community based on cases the possibility of fishing community activities in the future.

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# Changes in Fishing Communities and Women Fishers in Japan

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In recent years, the number of fishers has decreased and the existing population is relatively aged, and catch has also decreased in Japan and fishing communities are becoming impoverished with that.

Though not in large numbers, there is an interest in younger people entering fisheries and the age balance in the community is improving. A new set of values is being brought into the following communities and it is expected that new leadership will evolve.

In this presentation, we analyze based on statistics the broad changes in fishing communities also discuss about a relation between changes in women fishers and changes in fishing communities based on cases.

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# Opportunities and Constraints of Sardine Trading for Women in Timor-Leste

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Women's roles in fisheries and fish value chains in mainland Timor-Leste are often not prominent – few women go fishing in boats and the majority of fish traders are male. However, in one coastal community, there is a small group of women whose main source of income comes from buying and selling sardines as *papalele ki'ik* or 'small [quantity] fish traders'. This presentation draws on data gathered through focus group discussions, household surveys and informal conversations in a community in Bobonaro Municipality to understand the significance of this work to women and their families. I also explore some of the individual and societal obstacles women must overcome in order to participate in fish value chains in Timor-Leste, the challenges and inequities they continue to face, as well as their aspirations for the future. This study informs a larger research study on Timor-Leste's small-scale sardine fisheries which aims to identify potential strategies for enhancing fishery contributions to local food security and livelihoods.

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# Assessment of Capacity Building Programmes for Pre-Processing and Processing Women Workers in India

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The Network for Fish Quality Management and Sustainable Fishing (NETFISH), is a registered Society under the Marine Products Export Development Authority (MPEDA), under the Ministry of Commerce & Industry, Government of India which is the nodal agency for the promotion of seafood experts from the country. NETFISH was conceptualized for developing the capacities at the grassroots level by networking with fishermen societies, federations and other non-governmental organizations. The major activities of NETFISH since 2007 include conducting regular training programmes for building capacities in the fishing and fish processing sectors besides conducting special campaigns like harbour clean ups and rallies. This paper presents the results of study undertaken to evaluate the training programmes of NETFISH with particular reference to women workers in seafood pre-processing and processing sectors. The study covered 13 seafood units (pre-processing/processing) in four coastal states of India, viz, Kerala, Andhra Pradesh, Gujarat and Maharashtra.

The programmes for the pre-processing and processing units are held on-site. Since the programmes can be held only during working hours, as the largely women workforce will not be available otherwise, the training is given in batches of 25-30 persons. Repeated visits to the same centre are carried out to cover all the beneficiaries. The overall rating of the programmes held in pre-processing and processing units are rated 'Very Good' by 70% of the workers. About 90% of the women agreed on the training pedagogy parameters like relevance, content, timing and duration, training methods and facilities, expertise of the trainers etc. About 10% of respondents felt that sufficient discussions were not encouraged. The working hours of the women and the cooperation of the processing factories or pre-processing units are essential in conduct of these programmes and it is possible that conflicts on interest in this regard may have led to this perception, especially when the plants are working at full capacities.

The awareness levels of pre-processing and processing sector workers on the topics discussed during the programmes ranged from 80-100% which included the importance of maintaining hygiene and sanitation in their work. The levels of adoption are high also because the processing units are directly linked to the export market and thus have a stake in maintenance of quality and most processing factories have a system in place for ensuring the quality of the product. The labour is thus fairly well trained with the training by NETFISH being an additional input to enhance the capacities of their workforce.

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# From River to Table: The Roles of Women in Sustaining Indigenous Food Production in a Traditional Riverine Community

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This study discusses the roles played by women in the production of *binabak*, an indigenous food with freshwater prawn (*Macrobrachium spp.*) as its main ingredient in a riverine community in Pandan, Antique, Philippines. Factors responsible for the persistence of the production of this indigenous food are also discussed. Using key-informant interviews and participant observation method, the findings revealed that women generally played more active roles than men, from fishing gear making, to prawn fishing, up to *binabak*-making, and lastly, to its marketing. The practice's persistence is attributed to three interrelated factors: 1) livelihood opportunities from *binabak*; 2) presence of traditional channels of oral communication; and 3) the continuing observance of indigenous beliefs and practices pertaining to the river in general and prawn in particular. In all of these factors, women are playing active roles.

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# **Food Safety Implementation in Fish Processing Technology: Gender Roles**

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Food safety is everybody's concern, thus the Cebu Technological University, Cebu Philippines researchers have tried to disseminate good manufacturing practices (GMP) and hazard analysis critical control point (HACCP) awareness to fish processors. This study aimed to implement food safety practices in fish processing and determine the gender roles in GMP and HACCP implementation in processing of fish and other fishery products. Based on the descriptive statistics, two active cooperatives of Sta. Fe, Cebu, Philippines and Madridejos, Cebu, Philippines were selected as beneficiaries. Fish processors integrating the GMP and HACCP and marketing of the finished products were dominated by women and handling of raw material purchase was dominated by men. The food safety implementation were on the process like application of coconut water into the chilled marinade solution of mullet chunks; coconut water based brine solution for bottled sardines in tomato sauce and in oil and washing the anchovies with chilled brine solution as pretreatment of fermenting small anchovies and dry-salted sardines.

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## **Session IV: Gender and Fisheries & Aquaculture Governance**

# Challenges Faced by Fisher Women of South India Specific Reference to Andhra Pradesh (India)

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Women play a vital role in the operation of India's fisheries, which provide needed protein for the people as well as contributes to the country's seafood exports. Fisherwomen link producers and consumers through their involvement in every aspect of postharvest handling, processing, and marketing. Increased competition, declining resources and difficult working conditions make their work challenging. Fresh fish marketing and traditional fish processing remain the preferred activities of fisher women. However, the constraints faced by fisherwomen who want to advance their socioeconomic status beyond the sustainability level are over whelming. The major challenges are traditional processing, scarcity of potable water, adverse climate, losses through insect infestation and low profit margins. On a personal level many of the women suffer from poor health, hygiene and nutrition along with a lack of education, domestic responsibilities and lack of transportation to carry their wares to long distances.

In the fishing areas of the southern maritime state of Andhra Pradesh, India, women dominate the retail fresh fish trade. The major recommendations to benefit fisher women include 1) better marketing facilities for fish vendors, 2) appropriate training materials for fish marketing groups on post harvest technology aimed at improved handling fish quality and value, 3) steps to be taken to increase the purchasing power by introducing alternative livelihood options, 4) technologies for processing low cost fish into value added products which are in demand from different parts of the country and abroad, and 5) strong extension programs for fisher women.

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# Women Struggle in a Sea Cucumber Fishery: An Outcome from an Ungovernable Fishery

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Sea cucumber's profitability is known since the 19<sup>th</sup> century. Currently, its high demand for the Asian market as a luxury seafood has expanded the fishery to practically all warm and tropical seas of the planet. Moreover, as an export commodity it is considered a contribution towards poverty reduction and an important source of income for millions of men, women and children worldwide.

In Mexico, the sea cucumber fishery started informally in the year 2000 and when buyers interest grew, they increased the price and the catch volume also augmented. This meant an important economic extra income for the fisher communities, but at the same time it had some negative impacts on coastal communities, particularly on women.

The study aims to find out the social impacts suffered by women in the coastal communities of Yucatan. A qualitative methodology is used considering formal and informal interviews based on a semi-structured schedule applied to women involved in the fishery and key actors.

Results show that as sea cucumber economic value increased, illegal fishing-fishers became the source of new informal trade channels and severe social and biological concerns in Yucatan's coastal zone. At the beginning women were participating directly in the processing of sea cucumber, but buyers redirected the processing to different actors. Thus, women continue in the fishery but as passive actors, as the fisher's wives facing all the socioeconomic impacts caused by the high economic income produced by the fishery and the loss of a paid job. Women have been particularly affected, either because they have become widows, or the arrival of young sexual workers is causing families breakdowns. Some of them even expressed "*the sea cucumber fishery took away our husbands*". Women's opinion is that if this fishery continues it should be in a more organized form.

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# **“Lives on the Move”: Gendered Aspects of Migration in Fishing Villages in Sri Lanka**

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In Sri Lanka, migration is an inevitable livelihood choice in fishing communities to adapt to the uncertainty and impermanent nature of fishing due to monsoonal weather patterns and changing access to fish resources. Based on qualitative and quantitative fieldwork data in four fishing villages representing three ethnic communities on the East and West coasts of Sri Lanka, this paper discusses two practices of migration among women and men – the first is traditional seasonal internal migration for fishing and the second a more recent pattern of overseas labour migration.

The paper explores both the internal (seasonal) and external (overseas) migration from a gendered perspective using a social wellbeing approach and focusing on the motivations, roles, risks (vulnerabilities), costs, benefits and experience of migration as distinct yet mutually beneficial and challenging for women and men. The paper further discusses how collective action involving specific gendered social networks and relations of power is mobilized for migration. The discussion also provides insights on how, factors such as ethnicity, religion and caste intersect in informing the opportunities, choices and experiences of different women and men in fishing communities, and therefore, how migration impacts the wellbeing of both women and men similarly and/or differently. Overall, the paper argues for a nuanced understanding of the comparative benefits, costs and experience of migration for women and men.

The paper stems from a larger three country study on Migration and Collectives/Networks as Pathways out of Poverty in Fishing Communities funded by the Norwegian Research Council.

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# Acknowledging the Use Right of Women Crab Collectors over Customary Land Use Changes: A Case Study in Merauke, Papua-Indonesia

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This case study shows traditional small-scale mud crab collectors in Merauke, Papua-Indonesia was progressively marginalized through land use changes. The crab collectors are dominated by women from Asmat and Mappi, indigenous people in Papua. The Asmat and Mappi people did not have entitled rights over the communal land (*hak ulayat*) in Merauke. Indeed, people from Asmat, Mapi Bovendigul and Marind have “hak anim” right to access the land for food in Southern part of Papua through a collective agreement among these people. These women collectors of crab have moved from one mangrove forest to another mangrove forest due to land use changes. The land was acquired by government or sold by Communal land owners to private sectors for development. The area for seeking crab has moved further resulting in increase in cost and time. Despite their heavily dependency on the resources for income and feeding their families on communal land there is no mechanism to protect these women crab collectors on their source of livelihoods. The purpose of this case study was to understand how formalizing or securing rights to collectively held lands can affect women and men differently. In addition, this study also tried to understand the existing customary system and address the probable need for social change. This study used in depth interview with women crab collectors in Merauke, as well as customary communities of Marind, Mappi and Asmat in Merauke. This study recognises that the use right of women crab collectors are weak when it comes to land transferred. This study would support the idea of considering compensating women’s potential loss of livelihood as a result of development although they don’t have ownership communal right but they have a right to access and benefit from the resources.

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# Outcomes from Gender Focused Interventions for the Shrimp PL Collectors: Case of a Fisher's Slum from Southwestern Coastal Region of Bangladesh

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Wild shrimp Post-larvae (PL) collectors are an important segment in Bangladesh's shrimp value chain while freshwater shrimp hatcheries have failed to supply necessary PL to shrimp farmers. Over half a million fishers, fifty percent of them are women and children, engaged in shrimp PL fishing where other livelihood options are limited. In spite of government ban on wild shrimp PL collection and weak enforcement, it has long been a seasonal occupation for the coastal poor due to high demand of wild PL for freshwater shrimp aquaculture, an important foreign exchange earner for the country.

Aiming at inclusive growth across the shrimp value chain, gender focused pilot interventions were undertaken across a fisher's slum having 487 PL fisher households by United Nations Industrial Development Organization (UNIDO) through the Department of Fisheries. The pilot interventions designed included formation of women groups from shrimp PL collectors, adult literacy and life-skill training through community schools; rain water harvest and storage facilities; supply of books and dresses for school going children, small business training on alternative income generation, and wage compensation for the participant women attending the literacy schools.

Post-project evaluation of outcomes after three years of interventions from the UNIDO project revealed that about one third of the women who received training decided not to collect shrimp PL and engaged in alternative income from land based economic activities. Out of 120 literacy trainees, 5 started operations of small shops, 3 started tutoring, 3 started tailoring and two women started duck rearing and another two vending vegetables. Other changes in gender relations across the slum include trained fishers receive better respect from intra-family members and their voices heard and they felt proud of mentioning that uncounted women were being counted. For example, one trained PL fisher was elected as Woman Ward Member, two trainers got jobs in a local primary school as Assistant Teacher, another 12-15 trainees migrated to inland areas and doing other better jobs. The study argues that large number of small-scale fishers including women across the remote coastal areas are left out and often fail to benefit from results of development. Further interventions on alternative livelihoods particularly for women fishers are imperative across the coastal villages with adequate provision of monitoring, evaluation and communication of results.

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# **'Before We Asked for Permission, Now We Only Give Notice'. New Gender Relations in Fisheries: Women's Entrance into Small-Scale Artisanal Fisheries in Chile**

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Small-scale fisheries (SSF) in the Global South are increasingly subjected to the internationalization of food systems. Guided by a feminist political ecology approach, we examine how gender relations and power structures within SSF are changing through policy interventions and market linkages.

Chilean women working in SSF have traditionally been unregistered direct producers. Since the early 2000s, however, women have formally entered as fishers within this hitherto male-dominated space. Today, women constitute almost a quarter of artisanal fishers. While women have become more visible, among others, in their engagement in territorial use rights in fisheries (TURF), little research attention has been paid to women's roles within SSF. We redress this shortfall by examining the struggle to obtain a TURF by an all-women seaweed gatherers union in Coliumo (Bio-Bio Region, Chile). Using participatory research tools, we describe key gendered interactions and events over a local struggle for resources. Our findings show how closely related episodes of cooperation and conflict, involving differently gendered relationships were involved in realising the TURF. While the women involved in formalising fishing entitlements accrued individual benefit and enhanced their collective standing, the conflict left a deep scar among women in the community.

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# Locating the Context of Gender in Fisheries Policies of India

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Due to economic and social differences between men and women, policy consequences, intended and unintended, often vary along gender lines. All policies impact men and women's lives in one way or other highlighting the need of having a gender perspective in national policies. This is of prime importance in fisheries sector where women have traditionally been involved. In this context, a study was undertaken with the objective to locate the context of gender in Indian fisheries policies and programmes at the state and national level. For this, policies at central level i.e., National Policy for Marine Fisheries, Draft National Inland Fisheries and Aquaculture Policy, National Scheme of Welfare of Fishermen and Blue revolution were studied. Various programmes undertaken by the Department of Fisheries of 29 states were reviewed from the information available on their official websites. It was found that in the policy documents at national level; gender as well as women specific support measures are highlighted. The Blue revolution scheme, has a special focus towards women stakeholders both at individual and collective level. Measures have been delineated in the blue revolution draft to financially incentivize women SHGs and entrepreneurs. However, at state and central level, women specific support measures were found to be skewed towards post-harvest activities like marketing and value addition enforcing stereotypes. But, women's participation has been good in ornamental fisheries due to favourable policies. On the other hand, shrimp farming schemes appear to be gender neutral but at ground level, very few owners / entrepreneurs are women farm owners. These examples have clarified that if we are aiming for gender equality, it can be done only by making gender a central consideration in the development and implementation of public policy for which all stakeholders are responsible.

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# From Resistance to Internalization: The Spread of 'Gender Equality' in Small-Scale Fisheries Governance

SARAH LAWLESS\*

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Commitments to address gender inequality are increasingly integrated within small-scale fisheries policy and practice at multiple scales of governance. This is illustrated in the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries, where gender equality is recognised as fundamental governance principle. At an organisational level, virtually all major environmental governance organisations, including those working on small-scale fisheries, have revised their mission statements to reflect a greater commitment to both environmental *and* social outcomes (i.e., gender equality, human rights, equity and justice). However in regions such as the Pacific Islands, little progress has been made to translate these formal gender equality commitments into practice. In this presentation I use norm diffusion theory to discuss how the norm of gender equality spreads, and why in many cases this principle has been unsuccessful in catalysing favourable change in practice. Drawing lessons from diverse disciplines including political science, international relations, sociology, international development, institutional studies and international law, I identify several theoretical drivers influencing the spread of gender equality. I combine these results with empirical data from the Pacific Island region to explore the interpretation of gender equality by small-scale fisheries actors at regional, national and local scales. I find in many cases gender equality as a principle is resisted, rhetorically adopted, or contested by diverse actors. Actor responses to gender equality are shaped by certain drivers, including how norms are framed, and their perceived cultural suitability. Through understanding the intersection between actor responses and the drivers shaping the spread of gender equality, this research offers insights into the conditions that may lead to the internalization of gender equality within small-scale fisheries practice. This study contributes to a growing body of work that examines the barriers and opportunities for meaningful integration of gender into small-scale fisheries governance.

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# **Voices from the Shore: Lived Experience of Women as Leaders in Fisher Organizations in Bolinao, Northern Philippines**

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Women's invisibility in traditionally male industries like fisheries tend to trivialize women's roles and contributions to the field. This leads to the marginalization of women in development policies and programs, particularly in the areas of leadership and decision-making. While several studies had been done on women's participation in public governance and educational leadership, studies on women's experiences as leaders in community-based organizations had been very limited. This qualitative study explores the experiences of women as they participate in leadership structures of fisher organizations in Bolinao, Northern Philippines. It aims to provide a better understanding of what motivates these women to take on leadership roles and what factors influence their decision to sustain their participation as leaders in these organizations.

Eight women from Bolinao, Northern Philippines who have actively participated as leaders in local fisher organizations for the last fifteen (15) to twenty (20) years were interviewed using an open-ended interview guide. Using Alfred Schutz' phenomenological-sociology, and Attride-Stirling's Thematic Network Analysis, the study yielded the Global Theme of "Difficult but Fulfilling". This Global Theme emerged from three Organizing Themes: (1) Empowerment, (2) Motivations and (3) Challenges. Three sub-themes comprised "Empowerment", (a) Finding one's voice, (b) Sense of self-worth, and (c) Sense of achievement. Three sub-themes also comprised "Motivations" (a) Sense of belongingness, (b) Access to material benefits, and (c) Commitment to a better future for the next generation; while two sub-themes comprised "Challenges" (a) Internal struggles and (b) External threats

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# The Potential of Community Savings Groups in Enabling Women's Empowerment and Hilsa Conservation

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Hilsa shad (*Tenualosa ilisha*) is not only a symbol of national and cultural pride for Bangladesh, but also millions of people are directly or indirectly involved in Hilsa fisheries for their livelihoods. Women in these coastal fishing communities are one of the most vulnerable groups with very limited decision making power, access and control over resources, with 80-90% belonging to households that earn USD 1.25 or less per day. To meet their financial burdens, most of the women resort to borrowing from “*dadon*” (high interest local money lenders), the repayment of which is the biggest shock especially during the Hilsha ban period. With fishing being associated with men, women's work is mostly unrecognized and limited. Besides, patriarchal power structures directly influence women's lives causing barriers to their agency.

To reduce this financial pressure, a Community Savings Group (CSG) initiative was started in 2015 by WorldFish and the Department of Fisheries under the Enhanced Coastal Fisheries in Bangladesh (ECOFISH) project funded by USAID, which seeks to improve resilience of the Meghna riverine- estuarine ecosystem and the communities reliant on Hilsa fishery. So far 133 CSG's have been formed, with 30-40 fisher-women per group. On joining, women receive skills on savings management, business and leadership along with social awareness for transforming gender attitudes and behaviors.

To understand the impacts of the CSG's, a quantitative study of 300 households with two types of treatments (loan takers, non- loan takers) and a control group (new members) was conducted in 2017. The study takes a critical look into how enhanced savings can enable women's empowerment as well as women's active participation in natural resource management. These CSG's are releasing women from some of their financial worries and from exploitation, explaining why 40% of them who did take loans used it on alternative income generating activities.

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# Is Fishing Gendered? Women as Equal Partners in KRS Reservoir Fisheries, India

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Reservoir fisheries development is a function of ecology, fisheries, livelihoods, and governance with technology playing an intermediate role. In recent years, the involvement of women in marine fisheries, especially pre-harvest and post-harvest activities, is being acknowledged. However, it is not uncommon to find involvement of fisher women directly in fishing either independently or as equal partners in inland fisheries. The present has attempted to document the involvement of women as well as their level of human development in relation to men in the Krishna Raja Sagar (EWSA 7442 ha) reservoir region located in southern Karnataka, India. In the sample of 150 fishers, 20 were fisherwomen who fished independently. Social profile (language, religion, sub-caste and education) and living standards (household income, assets and amenities) of households of both fisherwomen and fishermen were studied. Annual average fishing income of fisherwomen was found to be marginally higher (INR 59,341) as compared to those of fishermen (INR 57,640). Human Development Index of fishers, computed using indices of education, health and living standards (adapted for micro-level from UNDP's HDI), was found to be 0.56 which is only slightly lower than Karnataka's and India's HDI (0.62), mainly due to a poor educational status of fishers. Similar to income differences, human development also slightly differed with households of fisherwomen families having a marginally higher HDI score of 0.58 as compared to those of fishermen families (0.55). It was also seen that the mean year of schooling (6.78) of fishers' children increased significantly in households having at least one earning women member. Contrary to general belief, women not only contribute to household income significantly but in many instances are the primary source of income. The study also supports the growing evidence that earning women impact more positively in improving the human development of overall household.

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# Women's Leadership in Community Fisheries: Case in Kampot and Banteay Meanchey in Cambodia

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In community fisheries (CF), women tend to take a back seat since fishing activities are done by men, and because patrolling for illegal fishing is done mainly by men. However, in the face of decreasing fish resources, women are working to diversify household income, and some men are moving out of fisheries for labor migration, especially the youths. In the face of such changes, women, who used to be marginalized in CF, are taking up more and more leadership roles. This study reviews cases of two CF in Cambodia: Srae Ambel in Kampot Province and Ang Trophaeng in Banteay Meanchey Province. In both cases, women are leading the CF. In Kampot, woman leader has been fighting land grabs and other external forces in order to maintain the community's claim to resources. In Banteay Meanchey Province, her leadership has been shown more in the economic/ entrepreneurial aspects. In both cases, they have proved themselves under men dominated leadership. We will explore the process in how women's leadership has been fostered in a male-dominated industry/ community.

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# **Enhancing Women’s Leadership to Influence the Productivity of Rice Field Fisheries Enhancement Project (2012-2015)**

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Rice Field Fisheries (RFFs) are an important source of food and income for rural households in Cambodia and are a significant contributor to national fish production. These fisheries are seasonal, open-access, and include the capture of fish and other aquatic animals in rice field systems. Fisherwomen use smaller equipment and remain closer to the villages than fishermen, and women are responsible for fish sorting, preservation, processing, and marketing. Women tend to have more knowledge about timing for peak fish prices, market access, and role of fish in nutrition, but don’t traditionally participate in fishery management. Sustainable use of RFFs requires better integration of activities and knowledge across genders.

To improve RFF sustainability, the Royal Government of Cambodia has supported development of Community Fish Refuges (CFR) to maintain fish stock in dry periods. The RFF Enhancement Project (2012-2016) improved women's participation in RFF-CFR decision-making bodies and also highlighted the challenges women participants face in terms of nutrition, markets, and processing.

Key project activities facilitated women’s participation through:

- Revision of bylaws to improve female representation in CFR committees.
- Workshops and visits to demonstrate the value of women’s leadership in RFF management.
- Dual gender participation in development of RFF community visions and action plans, with attention to women’s participation in decision making within their households and communities

The above approaches also helped increase women's income from RFFs and empowered women to allocate more time for home gardening and CFR management activities.

Four years after implementation, number of female executive committee members increased from 7% (2013) to 15% (2015). Improvements in CFR water quality and fish biomass contributed to increased household catch from RFFs, illustrating the benefits of improved integration of gender roles in sustainable resource management.

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# Caribbean Fisheries: Perspectives on Gender Too

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The Gender in Fisheries Team (GIFT) presented a preliminary overview of the Caribbean region's perspectives on gender at the 6th Global Symposium on Gender in Aquaculture & Fisheries (GAF6) in 2016. Our gender scoping study has progressed along with initiatives that contribute to mainstreaming gender equality in Caribbean small-scale fisheries. GIFT comprises gender-interested researchers, fisherfolk, fisheries project managers, consultants and others who are helping to implement the gender provisions of the Small-scale Fisheries Guidelines from policy to practice. This presentation updates colleagues on the work of the GIFT regarding additional results from the regional gender scoping study, primary research, gender awareness-raising initiatives, high-level policy influence and more. Most of our initiatives are featured on our website ([www.cavehill.uwi.edu/cermes/projects/gift](http://www.cavehill.uwi.edu/cermes/projects/gift)). While the Caribbean is seldom featured in international fisheries initiatives to mainstream gender, the need for both women and men to address gender is no less pressing there than in other locations. GIFT seeks opportunities to communicate our aims and network for collaboration.

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# **Gender Participation on the Environmental Protection Practices of Northern Cebu Coastal Resorts**

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Environmental protection is one of the concerns of Cebu Technological University, researchers for the sustainability of clean environment particularly the marine waters, the habitat of fish and other aquatic products. The research is focused on how the identified beaches of Northern Cebu, Philippines protected the environment. In this study, the researchers studied the gender participation in how the operators and tourists protected the beaches like waste segregation, cleaning and landscaping activities and the application of the 3R's of waste management. Out of the identified five beaches, Carmen, Danao City and Sogod coastal beaches, including El Salvador, Danao City and Alegre beach privately-owned beach resorts protected the area by landscaping the whole portion of the resort and reforestation with endemic species of trees this activity was dominated by men. The common environmental practices of the Danao City and Sogod beach resorts made the ecotourism successful and were managed by women operators participants.

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# Indigenous Women Rising: A Spotlight on the Role of Indigenous Women in Transforming Fisheries Governance on Canada's Pacific Coast

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Indigenous women in Canada and elsewhere are positioning themselves at the forefront of challenging unfair policies related to natural resources, and, are making important progress in this regard. Meanwhile, various international policy tools are emerging that emphasize equity, making the present moment an exciting and crucial time for transforming fisheries governance towards a more inclusive system—one that increases decision-making power for women and other marginalized groups. Here, we will present insights from a fisheries-dependent community on Canada's Pacific coast, where Indigenous women are on the frontlines of efforts to transform fisheries governance. During a recent fisheries crisis and conflict, these women called on their traditional and contemporary roles and responsibilities, to create solidarity and a unified vision, and catalyze changes in the management of Pacific herring (*Clupea pallasii*). While these efforts centered around herring, this was part of a broader strategy aimed at reclaiming decision-making authority and jurisdiction over the resources in the traditional territory of the Heiltsuk Nation. Considering recently adopted international policy instruments such as the Voluntary Guidelines for Small-scale Fisheries and the United Nations Declaration on the Rights of Indigenous Peoples, this provides a powerful example of how Indigenous women, are powerful agents of change in their communities and must be recognized, included and supported in fisheries leadership and decision-making if we are to move toward more equitable fisheries in Canada and beyond.

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**Session V: Gender and climate change  
with reference to fisheries & aquaculture**

# Gender-Disaggregated Impacts of a Category 5 Cyclone on Rural Fisher Communities in Fiji

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Pacific Island coasts are highly susceptible to extreme weather events such as storms and cyclones, which are expected to worsen with climate change. In February 2016, Fiji was hit by Category 5 Tropical Cyclone Winston, the largest in the southern hemisphere. Post-cyclone socioeconomic surveys were conducted to quantify the impact to fisheries-dependent communities from March–May 2016, to inform national recovery and rehabilitation efforts. Data was gender-disaggregated to look at the differential impact to fisherwomen versus fishermen. The study found there were large differences in the financial losses and damages to boats and engines across districts and provinces, based on their precise location within the cyclone impact zone. There were notable differences in the impact to fisherwomen versus fishermen, reflecting the number and types of fisheries each invested in, and the gear types used. For example, hook and line fishing gear was used mainly by women, and in general, represented the highest proportion in terms of value of gear damaged or lost for both men and women. One of the more dramatic impacts perhaps of the cyclone was the sharp reduction in fish consumption in coastal communities and in schools, highlighting the critical role fisherwomen play in adult and child food security in Fiji.

A number of criteria were selected and scored to rank the impact of the cyclone on fisheries infrastructure, livelihoods and subsistence within the surveyed districts. This approach aimed to provide a fair and transparent way to guide and target recovery and rehabilitation efforts to communities that suffered the greatest impacts and therefore in most need. However, despite fisherwomen suffering larger losses than fishermen in many places, there was little effort by government and development agencies to ensure both had equitable access to the gear provided by development agencies, post-cyclone. Given climate change predictions for the Pacific, it is important any future disaster assessment recognize the importance of gender-disaggregated data, and the differential impact on women and men.

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# **Gender and Climate Change Adaptation in Aquaculture: Improving Data Collection with a Web-Based Platform**

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FairAgora Asia

The aquaculture sector of Southeast Asia is likely to be affected by climate change due to changes in sea levels, salinity and temperature since it is predominantly located in brackish water regions along the coast. The region's vulnerability to climate change is exacerbated by poverty, social inequalities and environmental degradation. In the literature of climate change adaptation, there have been growing studies examining the links between gender and climate change adaptation, highlighting how differentiated gender roles and responsibilities lead to different capacities for adaptation to climate change. On one hand, women are more vulnerable to climate-related disasters like droughts, floods, crop failure, and increasingly scarce natural resources due to their limited access to resources and economic security coupled with their household duties. On the other, women also have the potential to contribute climate action with their knowledge of resource management, although this is still largely overlooked today. Thus far, studies on gender and climate change have broadly examined aspects like vulnerability to and perceptions of risk as well as coping and adaptation strategies. However, few have looked at gender and climate change specifically within the context of aquaculture. Moreover, such studies have tended to employ labour-intensive, largely qualitative methods of surveys, interviews, and focus group discussions to obtain data. This paper proposes a new data-collection method incorporating the use of technology to complement existing methods: Verifik8, a web-based platform, can be used to profile aquaculture farms, their workers and working conditions. This paper will share the preliminary results from a pilot test of Verifik8 in three shrimp aquaculture farms in Thailand and will provide an assessment on how the data-collection can be improved for further insights on gender, climate change and aquaculture related issues.

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# **Integrating Gender Perspective into Sustainable Livelihoods Framework in Vulnerabilities/Impacts Assessments of Disasters: Cases in Central Philippines**

**GAY DEFIESTA \***

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Numerous studies show that disasters affect men and women differently. Women however, were found to be more vulnerable because they are generally poorer, have limited access to resources and tend to suffer from various forms of gender bias. Compounding the problem is the fact that many programs and institutional responses to disasters often ignore women's needs. This can be attributed to the lack of gender lens in many disaster vulnerability/impact assessment models. This study is an attempt to address this issue by integrating and highlighting gender analysis into the sustainable livelihoods (SL) framework. The sustainable livelihoods approach is an important tool of analysis that has been widely applied in poverty and vulnerability studies of rural communities. The SL approach seeks to better understand the factors that affect poor people's livelihoods and the relationships between these factors ([www.ifad.org](http://www.ifad.org)). More recently, the SL approach has also been applied in vulnerability and impact assessments of disasters and climate change. Similarly, this paper utilizes the SL approach in assessing vulnerabilities to and impacts of disasters on coastal women. By nesting gender analysis into the SL framework, the study wants to understand how men and women are disproportionately affected by disasters. The analytical framework was applied to the selected coastal communities of Iloilo, Central Philippines that experienced disasters. The study relied primarily on focus group discussions and secondary data. Results affirm the findings in existing literatures that men and women are indeed affected differently by disasters.

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# Gender Differences in Coping Strategies and Adaptation to Crisis Experienced in Coastal Households in the Philippines

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This paper focused on the crisis experienced by men and women in coastal households and how they coped and adapted. Data were collected from 318 men and 467 women in fishing and non-fishing households in seven coastal municipalities in the Philippines from January to August 2015. Results showed that the crises experienced by both men and women in fishing households were typhoon (87% and 84%, respectively), illness in the family (42% and 46%, respectively), flood (34% and 40%, respectively), and drought (30% and 23%, respectively). Similarly, the men and women in non-fishing households experienced typhoon (85% and 86%, respectively), illness in the family (47% and 43%, respectively), flood (29% and 30%, respectively), and drought (23% and 28%, respectively). Coping with crises in fishing households involved more men more men (63%) borrowing money from friends and relatives than women (58%) and more women (43%) borrowing money from money lenders than men (41%). Coping in in non-fishing households, involved both men (63%) and women (63%) borrowing money from friends and relatives. To avoid loss of lives, men (38%) and women (45%) from fishing households and women (38%) from non-fishing households reported evacuation with their families, while the men (36%) from non-fishing households remained in their houses. During flooding events, men and women both from fishing (42% and 36%, respectively) and non-fishing (58% and 48%, respectively) households remained in their houses and monitored the weather condition. The information derived can serve as input in disaster management plans of the coastal municipalities to better respond to the needs of men and women in coastal households.

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# **Gender Differentiated Coping Strategies Among Ethnic Vietnamese Fishers in the Face of a Decrease in Fishing Resources in Chhnok Tru District, Cambodia**

**RAKSA SOK\***

The ethnic Vietnamese working as fishers at Tonle Sap Lake live on boats since they are not able to own land. The decrease in fish resources has hit this group of people hard on their household income. Some live on their savings of the past, while others have retail business and aquaculture. They have lost their connection with their Vietnamese village of origin and live as stateless people, which limits their opportunities to change their occupation. They are unable to migrate because they do not have any valid legal documents. Ethnic Vietnamese people in the study area follow the gender stereotype with, menhead of household and the main income earner who makes all decision at the household, while women's responsibility is basically household reproductive work.

This study has identified the existing strategies of women and men to cope with the decrease in fish resources. The coping strategies of ethnic Vietnamese household was separated into three groups with reference to their current existing livelihood activities. The ethnic Vietnamese people's knowledge and experiences in the past is associated with their household assets and in developing household coping strategies. Due to the decrease of the fish resource household incomes have declined. Gender roles and relations are linked with the existing coping strategies through considering gender division of labor in household, the access and control on their resources and the power of decision making in their household. However, these factors are more influenced by their economic status. This paper tries to understand the gender differentiated coping strategies that have evolved as result of the decrease in fish resources and the livelihood around Tonle Sap.

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## **Session VI: Focus on SDG5, and other SDGs, in fisheries and aquaculture**

# **Aquaculture through the Lens of Gender: An Investigation into the Socio-Economic Impact of Seaweed Farming on Coastal Communities in Bantayan, Philippines**

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The aquaculture sector, which includes seaweed farming, is considered to be the fastest growing food-producing sector in the world and it is considered as an option to reduce vulnerability of coastal communities in developing countries. Aquaculture is an additional source of income which significantly contributes to poverty alleviation and food security whilst helping to reduce fisheries exploitation, thus allowing recovery of overfished stocks.

Seaweed aquaculture in the Philippines has expanded constantly since the 1950s. According to FAO, the country now is the third largest producer of seaweed in the world behind only China and Indonesia. This sector is widely acknowledged to support small coastal communities by providing alternative livelihood, generating employment as well as enhancing community cooperation and wellbeing. In particular, seaweed farming has created job opportunities for many women. Unlike the fisheries sector, which is still dominated by men, women's participation in the seaweed farming production cycle, from preparation to post-harvest activities, is considerable. Nevertheless, gender differences in participation, employment costs, wage and wellbeing related to seaweed cultivation appears to be a field of research often overlooked in the Philippines.

Drawing on a case study of five villages on Bantayan island, this work investigates and measures whether, and so to what extent, women benefit from participating in seaweed farming, from an economic and well-being perspective. We use a mixed survey methodology combining a quantitative analysis of selected socio-economic indicators (both objective and subjective) with the outcomes of a focus group discussion.

Preliminary results show that, although seaweed cultivation has positively impacted the living standards of the communities, there is still a relevant gap in participation and economic conditions between men and women involved in seaweed farming activities. It is of interest, therefore, to examine if gender differences also affect the broader and societal community well-being.

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# **Gender-Transformative Approaches to Development in Coastal and Fishing Communities in the English-Speaking Caribbean**

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Tackling gendered dynamics as a factor in the sustainable management of pressured fisheries resources recognizes the behavioural component of how fisheries are used, perceived and managed by front-line stakeholders. Increasingly, the focus in the sustainable management of natural resources is largely more about managing the behaviour of people than the resources themselves. These shifts in approach raise the profile of how social norms, human behaviour and behaviour change influence the gender inequalities of risk and opportunities to be found in the sector as well as shape policy and decision-making. This paper explores how gender and fisheries actors should engage with efforts at the country, sub-regional and regional level to achieve SDGs 5 and 14 individually and collectively and ensure that achieving one is not done at the expense of the other. Specifically, this paper will explore three issues: a) the role that women and gender plays in small-scale fisheries in the Caribbean and how this may influence roles, capabilities and incomes; b) the extent to which current approaches to SDGs 5 and 14 hinder or help an integrated approach to gender and fisheries; and c) opportunities and implications for transforming the current approach to more gender-responsive actions in fisheries.

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# Harnessing Palauan Fisherwomen's Ecological Knowledge for Sustainable Management

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Nearly all households in Palau are involved in fishing. As is common across the Pacific region, women's fishing activities are distinct from men's. Traditionally, Palauan women glean invertebrates from reefs and mangroves, whereas men catch finfish from boats. Therefore, it is essential to include women's contributions to fishing in order to understand the diversity and totality of marine resource extraction in Palau. Rapid commercialization of fisheries has shifted gender dynamics and threatened the health of women's and men's fisheries. While men's fishing activities have been well documented in Palau, researchers have largely ignored women's fisheries, meaning managers have limited information available to implement sound regulations. There is currently very little formal management of women's fisheries in Palau, apart from *ad hoc* single-species export bans and an extensive marine protected areas network. This summer, I will conduct life history interviews with Palauan fisherwomen to investigate: How has Palauan women's fishing changed as fisheries have become commercialized? How can fisherwomen's ecological knowledge be harnessed to improve fisheries management for sustainability? This pilot study will form the foundation of my dissertation research. I hope this study will inform management decision-making, promote women's roles in fisheries management, and honor Palau's cultural and ecological heritage.

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# Exploring Female Involvements in Malaysian Micro and Small Scale Aquaculture Operation (MiSAO)

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This paper aims to explore female involvements in Malaysian Micro and Small Aquaculture Operation (MiSAO) through Nominal Group Technique (NGT). Due to the masculinity of Fisheries and Aquaculture Sector (FAS), this paper underlined by SDG5 (Gender Equality) to equally focus to male and female in FAS. Since women tend to be marginalized in FAS, this paper focuses only on them. The data was collected from Pekan, Pahang at Peninsular Malaysia. There were four wives of male operators and four MiSAO female operators involved as informants who were identified by Pekan Department of Fisheries Office. The informants were requested during the NGT to write 3-activities that they did in their or their husband's aquaculture farms in each level of production system - input, throughput, and output as well as at all levels. The findings were then presented. First, during the input process the informants involve in giving suggestions and ideas regarding financial capital, budgeting, and planning to operate the MiSAO. Second; during the throughput process the informants are helping in the production process of cage farming with activities like fish feeding, buying fish pellet, monitoring the cash flow and grading the fish. Third, during the output process the informants are active in harvesting, cleaning and marketing the fish. Lastly at all levels of production process the informants are monitoring the river water and weather conditions. There are two conclusions in this paper. First, women were actively involved in MiSAO in management and marketing activities, thus they should be given proper training in improving their skill in MiSAO financial management and marketing activities. Second, in MiSAO this paper proposes the concept of family cage farm (FaCaF) where husband and wife together manage and operate the farm. Therefore policy and program should equally focus on both men and women in FaCaF.

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# **Gender Roles and Poverty Determinants of Fish Farmer's Households in Oyo State, Nigeria**

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Fish farming has become an important livelihood in the quest for food and nutrition security for household wellness. However, one of the major constraints to the sustainable development of this vital sector is undefined gender roles and poverty which is prevalent among the fish farmers. This study examines gender roles and poverty determinants of fish farmer's households in Oyo State, Nigeria.

A multistage sampling technique was used to select 250 respondents using well-structured questionnaires based on the four Agricultural Development Programme zoning in Oyo State. Information on demographic characteristics, roles performed household income and expenditure were collected. Descriptive statistics, t test and Probit models were used to analyse the data at  $\alpha_{0.05}$

Result shows that 64.4% of the fish farmers were males, with mean age  $44 \pm 10.1$  years, 49.2% have tertiary education and a household size of between 5 – 6 persons. Other sources of livelihood include; civil service, trading, artisanal jobs, animal and crop production. Nineteen fish farming activities were considered but only three activities were not significant. There is a significant difference in participation of these roles based on gender in pond construction, pond stocking, transportation, pond preparation, pond management, cropping of fish. The result of probit regression indicated that farm size, age, education, household size, farm type, source of capital and membership of cooperative society are the major determinants of poverty in the study area.

Larger farm size, membership of cooperative society to improved access to credit to enhance the gender roles for improved productivity should be encouraged among the fish farmers to help improve their output and make them more food and nutrition secure.

## **Session VII: Gender research methods in fisheries & aquaculture**

# Women Fisherfolk Barbados - A Gendered Lens

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In 2014, women accounted for about fifty percent of the workforce in fisheries and aquaculture, inclusive of processing. This reliance is significant. And yet, women in developing countries face substantive challenges to engaging in and benefiting equitably from these sectors. At play are a combination of factors, including limited access to and control over assets and resources, constraining gender norms, time and labour burdens of unpaid work, and barriers to sustaining entrepreneurship. The result is women having fewer opportunities and receiving smaller returns from fisheries and aquaculture (Worldfishcenter.org, 2016).

The Caribbean Network of Fisherfolk Organisations (CNFO). The Mission of this organisation is to improve the quality of life for Fisherfolk and develop a sustainable and profitable industry through networking, representation and capacity building. There are ways to contribute to CNFO and one of those ways is by providing research findings and recommendations made available to fisherfolk organisations.

This study envisages discovering what are the challenges, successes and gaps in the livelihoods of women fisherfolk and to examine these gaps and provide recommendations for improved and enhanced quality of life.

Case Study Research, focusing on the livelihoods of 10-12 women fisher folk who are fisherwomen and or fish processors was used using a semi-structured interview protocol to examine the lives of these women, their challenges, issues and problems and what they need to help them function both effectively and efficiently in their jobs.

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# **Time to Connect GAF Research to the Political Economy of the Fish Value Chain Revolution That is Shaping Women's Inequality**

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Fisheries and aquaculture and their value chains have been transformed by far-reaching industrial, trading and economic revolutions of unprecedented historic scale. Growth of the world population has also been a major factor in the revolution. An historical review of the geo-political and economic trends that have shaped these revolutions, and of their impacts, reveals that the enabling political economy is not conducive to fostering or even maintaining women's positions and opportunities in the fish sector, and many trends damage the environment and dislocate society. Historical accounts often lack knowledge on gender. Sufficient documentation exists, however, to reveal impacts such as: that women participate less in intensified fish production and modernised, longer value chains; labour costs are systematically forced down; modern fisheries management practices may hollow out coastal communities; and declining environmental quality impacts society. Positive impacts too emerge, and tend to be highlighted by those in the value chain mainstream.

In the face of this challenge, however, gender in aquaculture and fisheries (GAF) research is piecemeal, small in scale, and focused on local conditions, often (correctly) driven by the mantra that the extreme heterogeneity of women's roles make case diagnosis the critical first step. Researchers struggle to connect the cases to each other to find commonalities, situate the cases in relation to wider sector trends, and develop larger, testable hypotheses. With few exceptions, multiple scale investigations on GAF in relation to major fisheries and aquaculture changes have not been carried out. Thus, GAF research may fail to illuminate the underlying causes of gender inequality in the fish value chain, its trajectory and the possibilities for overcoming inequality in the fast changing fish value chain.

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# **Sustainability of Fish Based Enterprises among Women in Kerala: An Analysis in Context of Highly Competitive Value Chain**

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Value added fish products based enterprises provides better opportunities for women especially to those who are living in coastal areas to earn a livelihood out of it. Though women SHGs in Kerala (India), are mobilized by imparting skill enhancement training through various agencies to rope them into small scale fish based enterprises, sustainability of such enterprise is a real challenge faced by women. With this background, a study was conducted in Kerala state for analyzing drivers and barriers of sustainability and to suggest guidelines for making a fish based enterprises a sustainable venture. Ten women groups were selected purposively and, and five beneficiaries from each unit were selected randomly to make a rational sample size of 50 beneficiaries for this study. Important information about the value addition units such as product quality, consumer preference, product diversification, unique value positioning, market feasibility, innovations in marketing and constraints faced by the production units etc. were documented through a detailed case study. Sustainability in this study was operationally defined as the number of years of active economic life up to which the enterprise could survive. Drivers and barriers which influenced the sustenance of such enterprises were also delineated. Results throw light on the fact that during important stages of value chain like procurement of raw fish and marketing, the complimentary role played by both men and women act as a major driver for sustainability of enterprise. The results of the study give an implication that all the 10 units under study can be revamped to have increased economic and social impact on society by reinforcing women's role in each stage of enterprise development complimentary to men's role.

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# Story-Telling With Photo-Voice: Women Fisherfolk Barbados - A Gendered Lens

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The Caribbean Network of Fisherfolk Organisations (CNFO). The Mission of this organisation is to improve the quality of life for Fisherfolk and develop a sustainable and profitable industry through networking, representation and capacity building. There are ways to contribute to CNFO and one of those ways is by providing research findings and recommendations made available to fisherfolk organisations.

The Aim of this study was to discover what are the challenges, successes and gaps in the livelihoods of women fisherfolk using Photo Voice. The participants 10-12 women involved in the fishing industry use cameras to capture visual representations of their everyday lives so that the researcher working with the community of fisher folk can gain insight into previously invisible practices that may be just described. This helps this community to better engage in critical dialogue around the problems and issues they face. Snippets of photos taken by the women will be used in this poster presentation.

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## **Session VIII: Learning exchanges – experiences and lessons**

# Two Birds with One Stone: Fisheries Monitoring as a Tool for Empowering Women and Informing Marine Management

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The management and sustainability of small-scale fisheries globally is largely driven by the paucity of available data. The situation in Atauro, Timor-Leste, is no different and, despite having some of the most biodiverse waters in the world, the island's marine resources have, until recently, been largely unmanaged.

In 2017, Ilik-namu, a community on the island of Atauro decided to begin the process of establishing a locally-managed marine protected area, using traditional *Tara Bandu* laws. Blue Ventures, a British NGO, was invited to support the process following other collaborative work with the community in participatory monitoring of marine habitats and data sharing. The community consultation process revealed the need for fisheries data, since none existed and many people were concerned about the health of fish stocks. This led to the implementation of a monitoring programme aimed at informing local management decisions. The programme uses innovative smartphone technology, which allows community members to collect data about their fisheries quickly, easily and cheaply.

In Atauro, community consultations and community decision-making processes are generally dominated by men. To address this inequality during the development of the *Tara Bandu*, eight women put themselves forward to create a fisheries monitoring group. The women completed their training in March 2018 and have begun collecting data. The aim of the women's fisheries monitoring group is not just to collect valuable data, which will be useful to the adaptive management of the *Tara Bandu*, but also to enable these women to take a more active role in influencing community decisions around marine management.

Despite working for only a few months, the group has already been recognised by community leaders and local government. The village leader has shown great interest in their work and has asked to involve them more in local government and marine resource management in the future.

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# Caribbean Small-Scale Fisherwoman Learning Exchange in Costa Rica: Women's Voices

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The Small-Scale Women in Fishery Learning Exchange, facilitated by CoopeSoliDar R.L. in July 2017, strengthened the capacities of women in fisheries from several Caribbean countries as well as their Costa Rican hosts and counterparts. The Caribbean women, learned from experiences in Costa Rica, while contributing their knowledge on Caribbean artisanal fishery value chains. The women were from the fishery sectors in Barbados, St. Kitts and Nevis, Grenada and Belize. They shared experiences with the women from the Tarcoles Fishing Cooperative and Chomes Mollusks Cooperative. They visited Consorcio Por La Mar, and had a close look at the co-management process of Cahuita National Park and the South Caribbean Diving Centre: Embajadores del Mar. This knowledge exchange sought to build links and shared experiences among women from fishing communities from personal, economic and political/organizational empowerment perspectives, strengthening bridges among islands of the Caribbean and Costa Rica. It was designed with a participatory approach, favouring a horizontal transmission of knowledge. Each experience showcased significant and different aspects of learning such as social, economic, cultural and organisational, present in Costa Rica's artisanal fisheries, with special emphasis on women. The visitors shared their perceptions, recommendations and learning, maintaining a two-way communication with the women from Costa Rica. The women co-designed an Innovation Plan that was formulated along the sharing and learning exchange route. In this way they could progressively include new visions and strategies observed on site visits. Parallel to the site visits there was the design of artistic material representing the discussions and learning.

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# Promoting Financial Literacy among Women in Island Fishing Communities through Comsca: The Case of Gigantes Islands, Carles, Iloilo, Philippines

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This paper emphasizes the importance of financial literacy among women in small island fishing communities through Community-Managed Savings and Credit Association (CoMSCA). CoMSCA refers to an economic development project model by World Vision that aims to provide simple savings and loan facilities to underprivileged communities where access to finance is difficult. It creates a mechanism for members of the community to save together, lend savings to each other, and share profits from joint investments. Highly dependent on fisheries-related activities which are seasonal, the need to organize the women to enable them to manage their domestic and financial affairs is imperative. The experiences involving challenges and lessons learned by women members of CoMSCA and how these lessons can be replicated to empower other women are highlighted in this study. Recommendations for strengthening local policy and programs for women in small island fishing communities such as sustainable livelihood program and other community-based enterprise development programs are also needed.

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# **The Teaching of Local Taboos among the Youth of Pandan, Antique, Philippines and its Implications to Fisheries Resource Management**

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Municipal policies exist to guide coastal and marine resource management at the local level but are usually top-down in approach and execution. Actual resource-users are thus sometimes excluded from resource planning and management. There may be references to community-based approaches that address this shortcoming but there is evident absence of youth participation. The youth is important since they are the recipients of local community traditional knowledge, including the concepts of taboos surrounding the use and consumption of certain fisheries resources.

This paper looks at examples of local taboos taught among the youth and their implications on the management of fisheries resources in Pandan, Antique located in Northern Panay, Philippines. Survey questionnaires were used to gather socio-demographic characteristics of the community respondents. Focus group discussions and key informant interviews were also conducted among the youth and other stakeholders in the area in order to collect their lived and gendered experiences related to the teaching of local taboos and other traditional knowledge on fisheries resource management.

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# Bringing the Gender Considerations at the Centre of Fisheries Education Agenda

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Women's Studies, as a paradigm of intellectual inquiry was drawn out of the women's movement in the 1970s. The official recognition of Women's Studies as an academic discipline in the university system has a history of more than four decades and the approaches have progressed from Women in Development to Gender and Development. But in the fisheries curriculums, gender does not seem to have been mainstreamed. This paper presents the resistances faced in mainstreaming gender in fisheries education based on experiences. Literature on resistance has been taken from institutional transformation gender mainstreaming tool kit of European Institute for Gender Equality. Study has revealed that while mainstreaming gender in fisheries education, resistances can be at individual level, institution level and outside the institution level. These resistances can be passive e.g. un intentional or intentional non-reaction or slowing down of the process and active resistance, e.g. ridiculing, open boycott, attacks, keeping the personnel out by design and systemically excluding the gender from the centre of education agenda. Resistance can also be hidden where objections are presented in a factual and reasonable way but which in reality are forms of hidden resistance like accepting gender mainstreaming but not acting accordingly. The passive and hidden types of resistances are most challenging to deal with. However, some objections can be helpful in critically reflecting a process of institutional transformation. To overcome these resistances, there is need of devising strategies based on other sectors and the experiences of people who are making efforts to mainstream gender in fisheries education. Otherwise the fear is that women's component will be just added to existing policies, plans, programmes and projects in the name of gender mainstreaming. Accordingly, the paper stresses the need to include gender studies as an integral part of fisheries curriculums with separate budgetary allocations.

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# Women in Fisheries and Aquaculture in Nigeria: Introducing the Bootstrap in the Roadmap

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Nigeria's fisheries sector is gender biased in terms of prominence in participation. The male counterparts dominate the scene, occupying prominent positions such as ownership, control and access to productive resources of aquaculture production systems, ownership of the fishing vessels and equipment in the capture fisheries sector. These roles confer on them pecuniary benefits such as investment opportunities, loan facilities, importing and exporting licences, among others. Despite women's economic potentials in small-scale fisheries and aquaculture, investments by women in both the aquaculture, artisanal and industrial sectors are at abysmally low levels. The female counterparts play the second-fiddle role of processing and marketing while depending on the male counterparts for major decisions. Underlying socio-cultural norms and gender relations accentuated by intersectionality are factors which most often impede the opportunities to own, access to or control productive resources and other inputs. Apparently, gender mainstreaming in the fisheries sector is very nascent in Nigeria. Our objective in this review is to re-orient women particularly in the small-scale fisheries sector including capture and aquaculture for active and strong participation in ownership, productivity and policy/decision making contributions. Secondary data and inferences from previous studies, particularly reports and reviews from across the globe were compared with what is obtainable in Nigeria. We therefore propose improving social-entrepreneurship, bootstrapping and social-capital based empowerment initiatives among other interventions that would boost women's participation in Nigeria's fisheries sector.

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# Advancing Gender in the Environment (Agent): Gender in Fisheries — A Sea of Opportunities

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During this presentation event, USAID will collaborate with IUCN to present its Advancing Gender in the Environment (AGENT) initiative, the purpose of which is to increase the effectiveness of USAID's environment programming through the robust integration of gender considerations, improving gender equality and women's empowerment outcomes in a broad range of environmental sectors. AGENT broadens the reach of technical support, builds evidence for gender integration throughout environmental sectors, fills critical information gaps, and develops targeted resources and tools that can be directly applied in Agency programs, training and communications. Recognizing women as agents of change; valuing diverse knowledge, experiences and capacities of women and men alike; and working to bridge gender gaps, AGENT envisions a world that approaches environmental work at all levels with gender-responsive policy and action.

With a particular focus on strengthening gender integration throughout the fisheries sector, AGENT provides support to USAID's Office of Forestry and Biodiversity (FAB) programming through the development of new resources, tools and information sharing. AGENT will provide a technical presentation on a brief produced for FAB, *Women and Gender in Fisheries: A Sea of Opportunities*. This brief provides an overview on gender in fisheries across biodiversity and food security sectors, highlighting best practice examples of USAID's global fisheries management and conservation work. Guidance on how to meaningfully integrate gender considerations into fishery interventions, including especially how to incorporate strategies promoting women's economic empowerment, is provided. This technical presentation will conclude by engaging event participants on knowledge and experience sharing.

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# Stories from Village-Based Seaweed Groups in Indonesia: Chips, Sticks and Bakso

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There are currently more than 1,200 women involved in village-based seafood processing groups in South Sulawesi, Indonesia. This is also the most important region for seaweed production in the country. Of the 186 registered groups, 33 process seaweed exclusively. We conducted in-depth interviews with the group leaders of 12 groups in villages in the Takalar Regency close to Makassar. We collected 13 group 'stories' to understand the financial data on production costs and benefits for their most important seaweed products.

All the groups are less than 5 years old. They received support from government or NGOs in the form of equipment and assistance with writing applications. Respondents were of the impression they were supported for empowerment, to increase their processing capacity, and to supplement their family incomes. Lack of markets and capital funds and expensive packaging were perceived as the most important obstacles for growth.

Of the 2 - 6 products made by each group, the most common were seaweed sticks, chips and bakso. All three had similar breakdowns of costs, with ingredients recorded as 58%, labour 22%, packaging 11% and the overheads (power, space) as 9%. Seaweed chips were the most profitable product. There was no evidence that profits increased with increased production quantity. Reported use of seaweed was 550 kg for each tonne of chips produced. Although seaweed was about half of the raw material per weight, it was reported as only a quarter of the costs.

Our sample size for the financial data was small and thus our findings should not be extrapolated beyond the present study. Nonetheless, the existence and expanding number of groups highlights that this is an important social policy supported by government. Identifying where effort should be focussed for additional government support would avoid reliance on sporadic one-off support from third parties.

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# **Successful Women Leadership in the Aquatic Animal Food Bank Project: Case study of Sapsomboo Model, Buriram Province, Thailand**

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This paper presents the Sapsomboo Model as good practice in the promotion of women in the leadership of the Aquatic Animal Food Bank project. We highlight the analysis of a case study in Sapsomboo village, Buriram province, Thailand from a gender perspective and discuss what contributed to the successful achievements of the project. The Aquatic Animal Food Bank project has been implemented by the Thai Department of Fisheries throughout the country. In Sapsomboon, it is implemented for 5 years (2017-2021) as community-based fisheries co-management. The project supports community members with the management of community ponds to increase aquatic animal production as the sources of protein foods and supplementary income for the community members.

The analysis of the case study demonstrated that women can take part in different activities of project implementation, especially as project manager, contributing to the successful implementation. The study also identified the economic empowerment of women as one of the key and strategic approaches for gender promotion in the community. This case study can be considered as a best practice for gender promotion in fisheries development projects in Thailand which can be applied to other areas.

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# **Roles of Women in Promoting Safety of Children in Small Islands: The Case of TEACH DRR in Carles, Iloilo, Philippines**

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Women in small island communities in Carles, Iloilo, Philippines compose nearly half of the population but they remain as undervalued human resource in Disaster Risk Reduction (DRR). Alongside their productive and reproductive roles, women also undertake community roles promotive of their families' and communities' safety. This study, then, underscores the various roles of women in promoting resiliency of small islands where children constitute a sizable portion of the population. DRR activities are supported by TEACH DRR Project implemented in partnership with the University of the Philippines Visayas Foundation, Incorporated (UPVFI) and UNICEF. TEACH DRR means Disaster Risk Reduction Training, Education and Advocacy for Children's Protection and Resilience. It aims to build capacities of communities, including women and children, to prepare for and respond to disasters and empower them to make preparedness and safety a way of life.

Key results in two small island communities of Carles after about 18 months of project implementation are generation of community risk information database and Participatory Three-Dimensional maps, activation/organization of local structures for children's protection, trained women and children on DRR, and annual plans integrating gender needs and children's rights.

The study, then, advocates for policies and programs for small islands where conditions are made more challenging by physical isolation, weather disturbances, limited capacities and inequities in health, nutrition, education and social protection. Given these complex realities, a network of partners for small islands` is imperative. Participation of women and children in community activities must not also be disregarded.

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# Women Shell Fishers in Small Island Communities: Roles, Risks and Recommendations

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Shell fishery is a thriving industry in the Philippines providing employment, income and revenue for the country. Shell meat, cheaper than fish meat and poultry, is also an important protein source for poor coastal communities. Export of shellfish and their by-products were recorded at 4,041 metric tons in 2016 valued at Php 920,369,000. Women in fisheries also contribute to this production but their contributions are undervalued and their conditions remain to be unnoticed.

The Gigantes group of islands in the municipality of Carles, Iloilo, Philippines, is one of the exploited sites of shellfish production in the Philippines. Shells in the area are bivalves of the Family Pectinidae or scallops known locally as “tikab” and Spondylidae or spiny oysters known locally as “bukol bukol”. The species are not cultured and are usually collected by gleaning and diving during their seasonal occurrences in Panay Island<sup>3</sup>.

This study, then, highlights the important roles of women in fisheries, particularly shell fishery. The steady increase in the demands for shell meat brought about by the thriving tourism industry in Isla Gigantes further propelled by the closure of the island of Boracay, the prime tourist destination in the region, requires an even greater physical and psychological demand for the women *tikab* and *bukol bukol* fishers who continuously face diverse risks in the entire process of shell collection (gleaning), shell meat removal (shucking), and shell trading on top of being mothers, wives and community workers. Recommendations mainly involve good fishery governance including regulation of shell collection and support for women shell fishers like social security, sanitized facilities and equipment for shucking. These support systems can be facilitated sustainably through community organizing and education.

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