



WINFISH

THE NATIONAL NETWORK ON WOMEN IN
FISHERIES IN THE PHILIPPINES, INC.

**9th NATIONAL
CONFERENCE ON
GENDER AND
FISHERIES**

*“From Evidence to Gender Policy Directions in
Fisheries and Aquaculture”*

*November 7 – 8, 2018
L’Fisher Hotel, Bacolod City, Philippines*

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FOREWORD

The ninth national research conference organized by the National Network on Women in Fisheries in the Philippines, Inc. (WINFISH) at the L'Fisher Hotel, Bacolod City last November 7-8, 2018 had a total of 17 paper and two poster presentations. The conference theme was, *“From Evidence to Gender Policy Directions in Fisheries and Aquaculture”*.

This publication of the conference proceedings includes the studies that have already been reviewed by the editorial board and revised by the corresponding authors. A few paper presenters requested that only their abstracts be included because their full papers have already since been published. WINFISH may later add the full papers of presenters who are still working on their revisions.

Rosario H. Asong & Ida M.L. Siason
Co-Editors

Welcome Remarks

RD Remia A. Aparri

WINFISH President

Maayong hapon sa tanan. Welcome to Bacolod City, the City of Smiles and welcome to the 9th Research Conference on Gender and Fisheries. It is my great pleasure to welcome all of you to the 9th National Conference on Gender and Fisheries with a theme of “From evidence to Gender Policy Direction in Fisheries and Aquaculture. Today and tomorrow, seventeen (17) papers will be presented by researchers and implementers from different institutions. Meaning, 17 evidences that can be used for gender policy direction on fisheries and aquaculture. And to mention, and to inform everyone that last October 17-21 this year, they are around 97 papers/ research findings were presented during the Gender and Aquaculture in Thailand which I attended together with just recently on October 17-21, 2018 which I attended together with some of the Board of Trustees and members of WINFISH, Ma’am Mayet and Ma’am Gelvezon. These are the evidences available for all of us to use, to use it into workable policies to support the gender and fisheries in ASEAN region.

WINFISH celebrated its 19th years of existence, Ma’am Ida, maybe, she’s the one who can remember this date, last October 1999, which started from a dream of evolving into a network for women in fisheries. It is a network that aims to improve women’s quality of life in the fisheries sector through advocacy and networking, increase awareness of women’s role in fisheries, foster information exchange among members on gender and aquaculture in fisheries. And with that, WINFISH is committed to improve the status of women especially in the fisheries sector.

This 2-day event will serve as venue for sharing research findings and experiences and upholds its advocacy, and acknowledging as well as recognizing the significant role of men and women in fisheries. This also served as the marketplace of ideas for us to discuss emerging ideas towards effective gender policies and practices in fisheries and aquaculture.

Let this conference be an inspiration to us all. This is the best time and opportunity to reflect and learn for our beginning and continue to keep on moving forward in seizing the opportunity of living meaningful lives. Let us make a big difference to the lives of these women.

But before I end my welcome remarks, I just want to share with you the question posed by Dr. Merryl Williams, during the GAF7 conference in Thailand last October which states “What to next for Gender and Aquaculture in Fisheries?” and in the WINFISH context, I will ask everyone, What to next for WINFISH 9th Conference.

Likewise, I would like also to share with you my reaction to that question. My question was, as organizer of the GAF7, we call it GAF7 because it’s Gender in Aquaculture and Fisheries, it’s a 7th conference, as organizer of GAF7 addressed to Dr. Merryl Williams, what will be the plan of action of GAF, what will be the activities for the GAF 8th conference and beyond in order to translate these evidences into actions all the data, information, insights, research outputs, gender analysis, sex disaggregating data, women inequality data and many more gender indicators and even the presentation of the use of the value chain approach in identifying the gender role for both men and women. How can we translate these into concrete programs and projects that at the end of the day we can say, we can see, we were able to realize our goal towards women empowerment who will play a major role in sustainable fisheries management, towards the millennium goal on attaining food security of ASEAN nations, including the Philippines.

My friends ,there are tremendous significant evidences available for policy, for gender policy, for planning, for projects activities but how could GAF use it to fulfill its mandate? That was my question, my reaction to the question posted by Dr. Merryl Williams, the organizer of the GAF and this afternoon, I will ask the same questions from men and women in this room, where will we go after this? Will WINFISH follow its roadmap, its strategic plan of actions to help improve the lives of women in the fisheries sectors? How can we use the research outputs, these presentations beyond publication, and to utilize the manpower around this room, from the state universities and colleges, from BFAR, from NGO', from national government agencies towards achieving our goal in WINFISH? WINFISH is one of the platforms for all of these. I am not bias to BFAR, not because I am with BFAR, but BFAR plays a major role in the field of gender and development. What we need is the in-depth understanding of the basic of GAD, so that mainstreaming of GAD to BFAR's program will happen towards and end view of women empowerment, and with women empowerment we can have the sustainable fisheries development, there will be an economic gain in the fishery sector toward fish sufficiency and ultimately food security for the whole country.

And finally, with all sincerity, I thank everyone who joined hands in making this event happen – to all board of trustees of WINFISH for 2016 to 2018 and to all members of the organization, friends and colleagues who supported us, thank you very much. And to all sponsors for this two day event today and tomorrow, that would happen tomorrow, to PCAARD , to specifically mention to the province of the Negros Occidental, to Governor Marañon who will sponsor the dinner tonight, fellowship night, from the different regions of BFAR, from region CAR to BFAR ARMM, to the University of the Philippines and to BFAR Central Office, *sin-o pa, baka may nakalimutan ako*, and with that, I am very thankful to all of you, and I hope that we will have a successful and a fruitful conference and everything will not end here, but rather this will be the beginning towards our goal in WINFISH, and in general, for the fisheries sector. Good Afternoon.

Message

Dr. Ricardo P. Babaran

Chancellor, UP Visayas

This 9th National Conference on Gender and Fisheries with the theme: **“From Evidence to Gender Policy Directions in Fisheries and Aquaculture”** is a testament to the University of the Philippines Visayas' continuing commitment to mainstream gender in our teaching, research and public service work. UP Visayas gender advocates with support from the administration convened the initial group that eventually became the National Network on Women in Fisheries, Inc. (WINFISH), almost 20 years ago. Through the years, UP Visayas has acted as WINFISH's Secretariat and remained as a crucial partner in organizing the biennial conference that focuses on gender concerns in fisheries.

It is my hope that we continue this important partnership and ensure the attainment of research-based evidence to advocate for and support policies that will indeed bring about gender equity and equality in coastal and fishing communities. More power to WINFISH and congratulations to all who are part of this conference!

Keynote Speaker

Senator Cynthia Villar

Chair, Senate Committee for Agriculture and Fisheries

Warmest greetings to WINFISH, BFAR, UP Visayas and Fisheries Advocates as you would start today the 9th National Research Conference here in Bacolod City. It is only fitting that we also recognize the contribution of women in our quest for a more sustainable fisheries sector. *Alam natin na bukod sa pagiging homemaker, ang kababaihan ay malaki rin ang ginagampanan sa ibang larangan.* That is why we are supportive of legislative measure that will make sure our women to continue to have a source of livelihood by penalizing illegal fishing and making sure that women will have access to assistance from our government. *Magsama sama po tayo upang mapangalagaan ang ating karagatan, ang ating source of food at livelihood at tirahan ng ating yamang dagat. Maraming salamat po at mabuhay.*

Closing Remarks

Dr. Dalisay Fernandez

WINFISH Linkages Committee Head

We started the day joyfully. If you noticed, we started with joy and we must end it with joy. So here I am, about to close it, joyfully. We had plenary papers and 48 presentations, so a total of 16 papers. We had a lot of discussion. May mga issues na, *“Bakit ganito sa aming agency?”*. I would like to end the discussion with a challenge. First and foremost, we are here to attend the National Network of Women in Fisheries in the Philippines, Inc. Conference, but I would like to ask you, how many of you have submitted your application to the association? How I wish, *alam ko hindi na po kayo sasagot e. Alam ko na hindi na kayo sasagot at magsasabi na* you're more than willing to be a member of WINFISH. But we will be very happy to see you again not as participant, but as a member. I've been part of the association for quite some time, I started as a committee member, encouraging networks to be part of it. But I am not that successful. I will be very happy if all of you, one hundred percent apply as members.

With that, we would like to thank the sponsors. There are only three sponsors. We have BFAR, DOST-PCARRD and UP Visayas. But I noticed there are private sectors who can be sponsors. We would like to request participants who can possibly identify some sponsors, *pwedeng pakibulong nyo lang sa akin*. So that next time, we will be celebrating the 10th Biennial conference, we will be having more than three, because these are the usual sponsors. *Wala akong napapakinggan, lahat kayo ay tahimik*, does that mean *lahat kayo ay walang potential sponsors?* That will be your assignment. Somehow, I was able to encourage you to become members, so I will also encourage you to identify potential sponsors. I would like to thank you, especially the members and the secretariat who worked hard, but most especially the participants who actively participated in this activity. So *sana*, though I will be retiring next year, I hope there are potential activities that we will see together. *Sana hindi kayo as participants, but as paying members. Marami pong salamat.*

Dr. Ma. Elena Chiong-Javier

Social Development Research Center

De La Salle University Manila

I would have acknowledged the honorable Cynthia Villar if she were here. RD Aparri and other past presidents of WINFISH, honored guests, ladies and gentlemen who are advocates and activists for women in fisheries development, a very pleasant afternoon to all of us. *Maayong hapon sa aton tanan. Tama ba? Buenas tardes a todo yo soy de Zamboanga. Meron po ba ditong taga Zamboanga?* I am honored and pleased to address you this afternoon and to reflect with you on the conference theme, "From Evidence to Gender Policy Directions in Fisheries and Aquaculture". I am most grateful to WINFISH, the National Network for Women in Fisheries in the Philippines, Inc. headed by the president, RD Remia Aparri for inviting me and for convening all of us in this 9th biennial conference on gender and fisheries.

Because we are gathered in the Visayas, I want to start on a light mode by sharing a trivia that highlights only in the Visayas. Did you know, that it is only in the Visayas that you can find the longest running biennial in the Philippines today. Indeed, this title belongs to, yes, the Visayas Island Visual Arts Exhibition and Conference, ViVa ExCon, which is holding its 15th biennial tomorrow, November 8, in Roxas City Capiz. But of course, in the Visayas also, WINFISH is in the running, convener of this 9th national conference appears to be fast becoming a long running biennial for gender and fisheries in the Philippines. I congratulate them for the leadership and membership of WINFISH for it is no mean feat to organize a biennial for the 9th time. So *'di ba sabi kanina ni Barby*, since 1999 ang WINFISH. Ok, that's every two years *na* national conference, so we're on the 20th year in fact. So I am not wrong in saying it is in the running. I am sure the path to this conference is not all easy but it must be well worth all the bumpy rides along the way. Our conference organizer is also notable for few other things, one is harnessing and networking the talents of multisectoral and multi-disciplinary bodies of women and men dedicated to fisheries related research and development. They especially target women's welfare and inclusion to sustaining the efforts initiated almost two decades ago. WINFISH provides the avenue through a biennial conference, for sharing the perspectives, methods, best practices and other lessons learned by those who collaborated women and men in fisheries related activities.

If you will recall, *sabi nga natin kanina*, the first biennial was launched in March 2000. The third is, by demonstrating that the successful national network need not begin, nor made it in Metro Manila- once upon a time known as imperial center for many successful things. So *hindi lang sa Manila*. Again I would like to congratulate WINFISH and thank you for inviting me to this very interesting and large gathering. I didn't expect many, but it's very obvious that the body seems to be very committed. If people can get as many as this number every time we have a biennial, that's a pure indicator of sustaining interest. Ok. Today after tucking under your belt 8 biennial conferences on women and gender concerns in fisheries, there is very little need for discoursing on why gender equality and women inclusion must be pursued in fisheries and aquaculture in the Philippines. You've done that already. You've done a good job at it. Instead, let me dwell on the theme of this two-day gathering. To me, the theme implies that the preceding eight conferences could have, or would have focused on compiling and sifting through basic information such as the importance of women's role in fisheries, the existing status quo, gender need, and women issues in coastal and fishing communities. The conferences also discussed programs and technologies that differentiate the impact of the social well-being and economic empowerment of women as well as men on the ground, the collaborative attempts of various disciplines and sectors to pilot and learn from gender sensitive projects, how concerned government agencies are mainstreaming gender in their bureaucracy and

what learning may have emanated from research and innovations from fisheries in the last two decades. Our conference theme, “From Evidence to Gender Policy Directions in Fisheries and Aquaculture” may be interpreted by asking three queries such as, but not limited to, “What body of evidence is available for crafting gender sensitive policies in the fisheries and aquaculture sector?”, “What are our experiences in transforming fisheries policies to become gender –balanced and women sensitive” and “What lessons have we learned from evidence-based policy making for gender and fisheries sector?”. Our presence in this conference is quite indicative of our support for evidence-based policy which often goes by EBP in the literature. Meaning, quite simply that policies, or policy directions should be backed up or informed by evidence, because evidence measures, evidence increases the effectiveness of policies. Evidence-based policy making is but one of the approaches to initiate reforms in the public sector, policies, and programs responsive to gender needs or women issues or how to mainstream gender in the bureaucratic structures and processes. This is so that the country can attain desired gender target in the millennium despite criticisms. *Alam niyo marami ring criticisms dyan sa EBP eh.* Despite criticism against EBP approach, many policy makers and researchers stand by what it can accomplish.

As we address the conference theme through various presentations, results, and discussions, I would like to suggest that we ponder on five points. The first one is evidence matters but it is not enough. Evidence simply refers to data, information, and facts to support a conclusion or claim regarding an observed phenomenon. Evidence matters because it informs and strengthens policy which in turn, guides action. Reliable evidence is believed to have as much rigor as possible. Rigorous data is valid, reliable and objective. Findings or results of rigorous social research provide much of the evidence used by decision makers today. *May away pa yang mga iyan no. Ano ba ang dapat na traits ng isang ebidensiya na pwedeng gamitin? So maraming details.* But although at the beginning we were saying, *o ano dapat ano yan, stastically, uh ano yan, measured statistically verified, mga ganong klase, pero lately, ang tanong naman ng iba, papano naman yung, halimbawa, may mga cases ka lang, so walang statistical ano dyan. Magagamit mo din yan for policy making, so, wala tayo sa debate na yan.* But I think there are many of us in the academe who will still say *dapat talaga rigorous ang pagkuha sa ebidensiya.* Many of you, who are in government also think and feel the same way. Research process to policy action is not enough. The International Development Research Centre Canada explains research is only one of the players, if not, it’s only a bit player in the process. There are many other actors and factors at play. The actors are comprised of varied categories of stakeholders within category such as community stakeholders. We find not only the targeted women and men in fishing households but also their local leaders and other interest group in community. According to target, the factor that matters in addition to research is time. How long does it take to influence policy? Also intent, why? Why influence policy? Context. What to influence policy. Strategies for communicating research data and institutional mechanisms that enable data to be incorporated into policy among others. So *kaya ganyan,* and I think *tama din yan.* That while evidence matters, it may not be enough.

The second point, the second insight. This basic economic law Demand and Supply matter in evidence production and use. Several decades ago, *yung katulad ko na baby boomers, boomer,* researchers used to tease policy and program implications from their research with seeming obliviousness to the needs of decision makers. *Hala, gawa lang nang gawa ng research, tapos sa end ng research, policy implications, program implications. Pero walang fit.* There is little fit between. *Ito yung ginagawa namin, at ito naman ang kinakailangan ng decision makers.* So, *merong disconnect.* There was a disconnect between the production and the consumption of evidence. It disappoints both sides. In present times, evidence is affected by economic law of supply and demand or demand and supply. The demand comes largely from government agencies and legislative bodies seeking information to report on performance and to meet the needs of decision makers.

Consequently, government funded research has emerged and has become, whether directly or indirectly, the most important source of social science input to government. On the supply side, researchers have developed capacities for providing research topics that interest government funders. Over time, these capacities have become concentrated in research centers, located in universities or in other research units like consultancy firms or private think tanks.

The third insight, relationships influencing policy directions; someone said that network is a special kind of relationship. Building relationships is one of those factors in transforming knowledge to policy. Networking is a special kind of relationship. In his work as director of the evaluation unit, Campden researchers exert the most influence in policy making, whether internal or external to the institution that formulate policies. These researchers are those who are able to respond to the decision maker or policy and program inputs. These are the researchers who are able to develop a strong relationship of trust in the process of providing information. Of course, trust has to be mutual. Decision makers likewise trust the quality of the researcher's work because these decision makers know the researchers and their capacity and reputation. A relationship founded on trust has motivated communities to rally government to their causes. *Kanina*, we heard from our president, that WINFISH already made a great stride in this regard in networking. As RD says, how do we harness our membership towards evidence-based policy?

The fourth insight, know and fill-in the evidence gap. What is the current evidence gap in our knowledge and practice in incorporating gender in the policy and action of the fisheries sector? Evidence gap blind us to the gender realities of the sector. *Minsan ang evidence gap yung hindi na natin masyadong pinagbibigyan ng tinatawag nilang gender lens, ang kung ano ang ginagawa*. So, we continue to do what we do because we do well, it's succeeding but we really don't know behind what we are doing, whether this are succeeding for women, for what causes of women, how do they get empowered if at all. In aquaculture for instance, how much information do we have in such questions asked? What are the facilitating and deterring factors in mainstreaming gender and equality concerns in aquaculture? Had aquaculture policies, services, and programs been reviewed and the data adequately analyzed? What do we know or do not know about the modifications made in institutional or organizational structures and processes to respond to gender constraints in aquaculture? How do gender responsive stakeholders learn from aquaculture ventures that attempted to be gender sensitive in practices? From these lessons, how have we been able to try to transform them into gender policies and actions? So, we need to know and we need to fill in, whatever evidence gaps we have in gender and fisheries.

And finally, build up and strengthen existing databases. We talk about evidence, where are they now? *Nasa database ba?* Can we rely on existing databases on gender needs in fisheries development? Let us look at the GAD checklist for the fisheries sector that were developed and used according to reports since 2005. I don't know if the fisheries has used this since 2005, that is some twelve years ago already, as part of the Philippines harmonized gender and development guidelines for project development implementation, monitoring and evaluation. Actually, I have a chance in using identical checklist, but for the forestry sector. Through a process of scoring an impressive set GAD elements, the program implementers could establish a gender situationer and track the gender impacts of the program from start to end. But based on personal experience, users of the GAD checklist would find it challenging to undertake a reliable gender analysis because many important sex disaggregated data and gender related information on specific program sites are lacking or perhaps non-existent in government databases. The alternative, which is to conduct a primary investigation in obtaining the data would be very costly might not be covered by the budget or might be impractical. In principle, government databases house impertinent units of government bureaucracy. Like DA and BFAR are in excellent position to provide sex disaggregated data for

projects on gender development and assessment. I would not like to disregard the fact that there are also very good databases in research centers. Like in the academe for example. I am sure by now, the collection of data in these databases are voluminous. I ask, what is the current status of these databases? What source of data has been used? By whom? How helpful are the databases for informing decision makers of policy and action? What can a database tell gender activists, that indeed, we are gaining ground and how much ground has been gained in providing gender and equal opportunities in the fisheries sector? Do we know what needs to be improved in our databases? If there are barriers to improvement, how are we handling them? *Kumbaga*, if we have good information in our databases, anyone can go there, and immediately be apprised of needed information. Or somebody can come up and say, "If I wanna do gender equity, I want to accomplish gender equity in this kind of program or action, I need to remember 5 things or 10 things.". So what are those 5 things, what are those 10 things? Will the database be able to tell us, what are those? *Wag na five, tatlo na lang*. Three things before to able to do that. I think we can.

In conclusion, I wish to reiterate, that in policy making and action thinking, we put too much emphasis on research to obtain evidence, and rightly so. However we should also remember that good information with respect to rigor, reliability, validity, objectivity, even when available for the taking, may not get us the necessary policy and action, as there are many other actors and many other factors that bear considering. Nevertheless, let us not slacken our efforts to produce good evidence and follow this through to policy and action. I believe the challenge of this body at the end of the conference is to be able to chart what's going to be in the next biennial. Will we have done or accomplish those that we have planned out at the end to the 9th biennial? Such that we are now able to reap the fruits, *kumbaga*, harvest the fish for the 10th biennial. So once again, I congratulate everybody for being here, for participating in this great effort to bring gender equality in fisheries development. Thank you very much and good afternoon.

Plenary Speaker

Miss Jocelyn Hekrdle

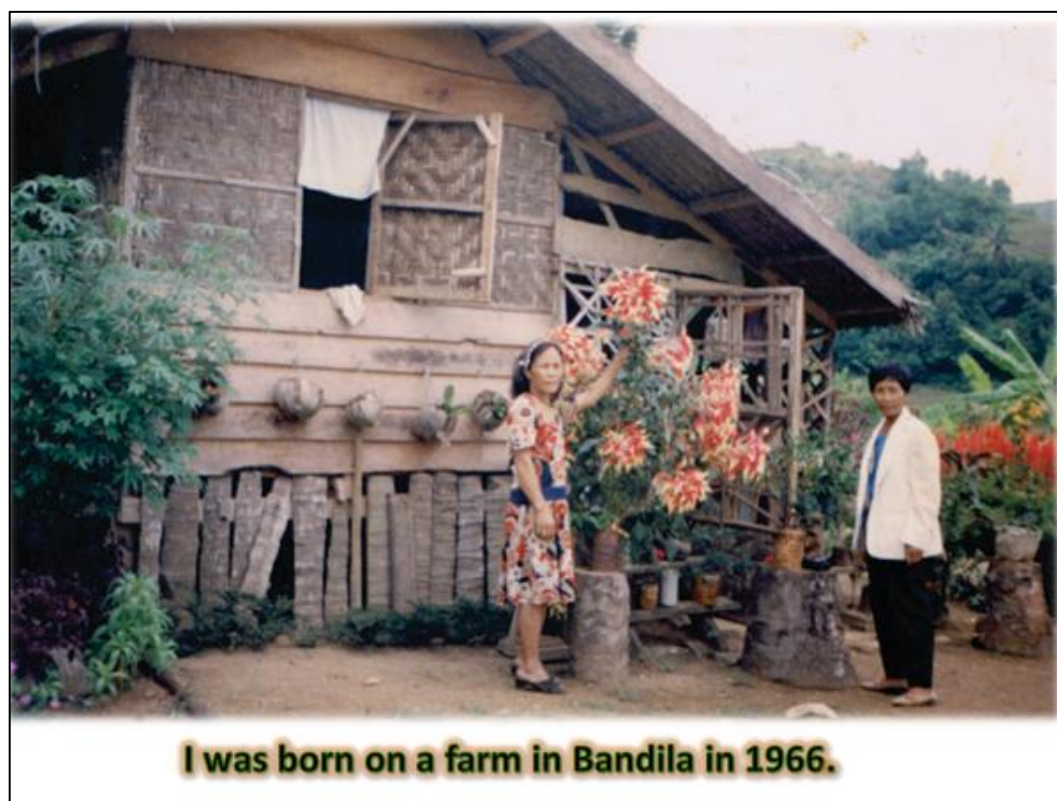
Fisherfolk Leader, Toboso, Negros Occidental



Empowered woman makes Change!

Presented by

Jocelyn Hekrdle
Municipality of Toboso, Negros Oriental



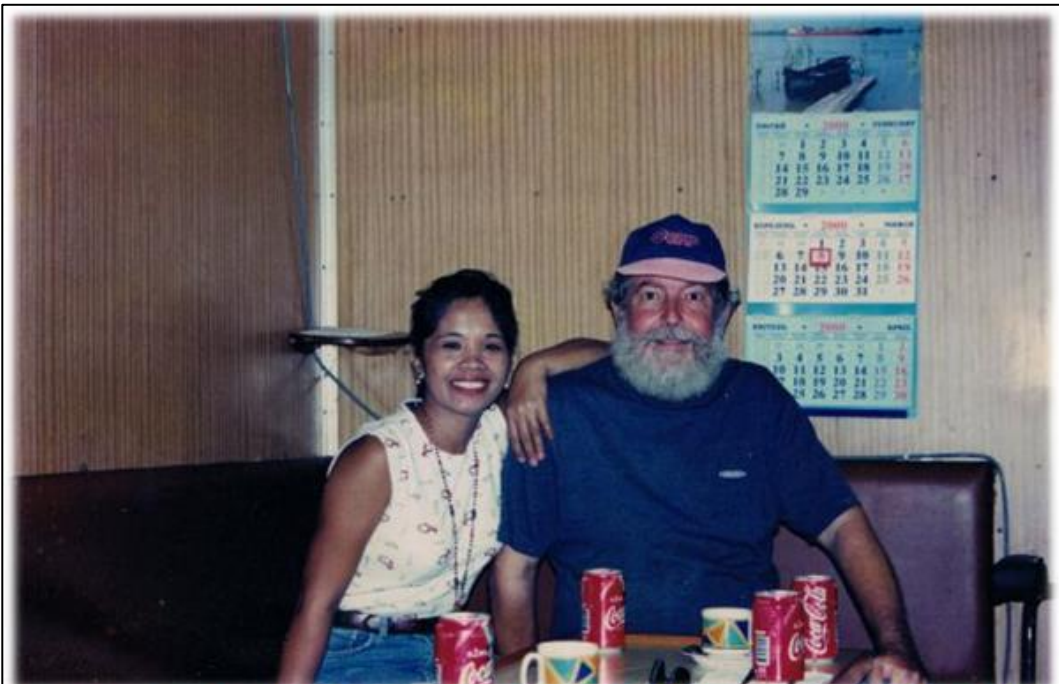


I graduated elementary 1980 with honors.

I graduated high school in Bacolod in 1988 as a working student.



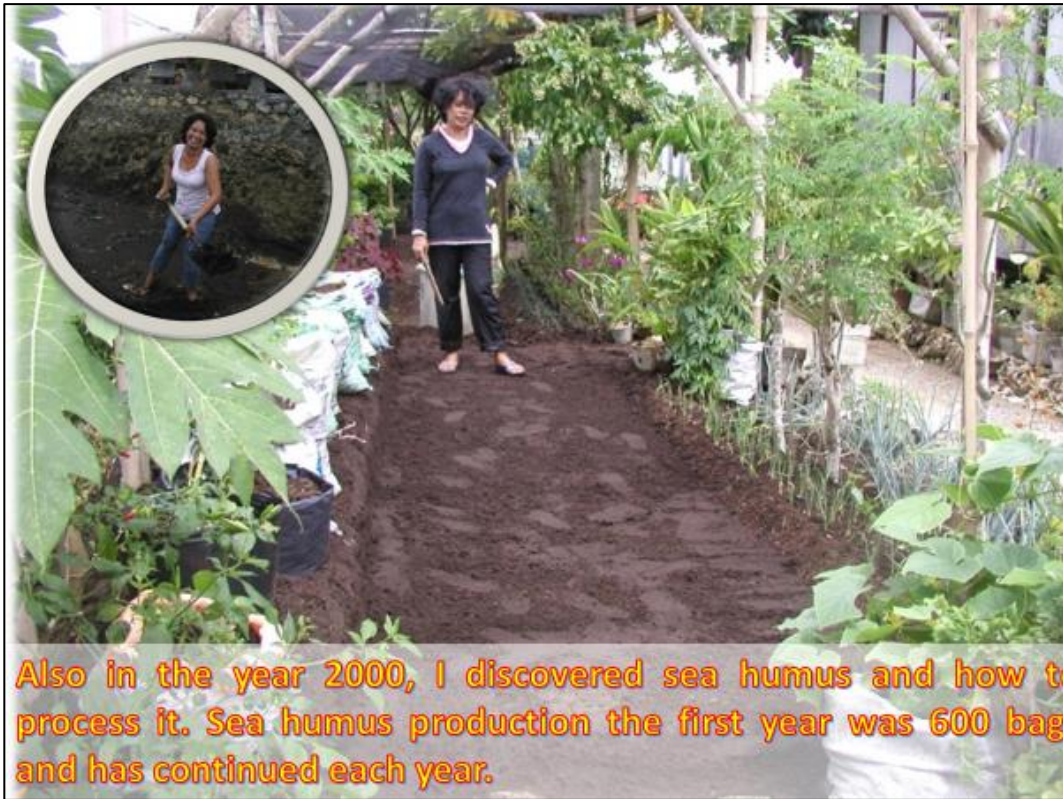
After high school graduation I worked as a sidewalk vendor selling cigarettes and fruits.



I met my husband at Toboso Fiesta in 1998. We were married at Cadiz, Negros Occidental in 1999.



In the year 2000, we bought an abandoned fish buying station on Manlagtang Bay, Toboso, Negros Occidental and developed the Bandila Plant Nursery.



Also in the year 2000, I discovered sea humus and how to process it. Sea humus production the first year was 600 bags and has continued each year.



Fishing is becoming hard.....



**MASTER DIVER and PHILIPPINE
NAVY SEAL
ROMULO DALUGDOG**



**PADI INSTRUCTOR and WTDA
SCUBA DIVER
ERIC THIEN**



**Conducted consultation with the fishers and eventually
organized them**

Recycling can take many forms: Papier-mache, plastic flowers, leaves and organic pots to protect our environment from garbage and hazard.



Shared my skills on food process to the fishing community.

WTDA CURRENT PROJECTS



**WTDA DIVE
TOURISM PROJECT**



**WTDA YOUTH
PROGRAM**

WTDA CURRENT PROJECTS



**INID ARTIFICIAL REEF
PROJECT**



**GHOST NET RECOVERY
PROJECT**

Gender Roles on the Capture of Tuna and Processing of Flying Fish in Langogan, Puerto Princesa City, Palawan, Philippines

Reymart S. Dagaraga¹, Billie P. Subang, Jr.^{1,2}, Riza G. San Juan¹, Grece Fatima C. Ventura^{1,2}, Julieper H. Sumandal^{1,3}, Oscar G. Nalzar¹

ABSTRACT

Palawan is endowed with vast marine resources, particularly the pelagic fishes. Tuna are sold as fresh, chilled or frozen products while flying fish are being processed into dried form. This study was conducted to determine the socio-economic profile of the respondents, roles of women and men in capture fishing, fish processing and marketing. From the 36 respondents, 30.4 percent of women aged 31-50 years old and 30.7 percent of men aged 41-50 years old have contributed significantly to the fishing livelihood activities in Langogan, Puerto Princesa City. All women predominantly engaged in fish processing of flying fish while 76.92 percent and mainly involved in capture fishing. The roles on marketing of fresh tuna and dried fish were shared by both women and men. The participation of men was influenced by the gravity of workload that capture fishing requires; thus, their involvement in fish processing was minimal. The women engaged in cleaning and drying of flying fish. Generally, gender role was shaped by the knowledge of and access to resources as well as of the economic demands. On the other hand, the lack of government interventions such as financial support, empowerment and new technologies also hinder the sustainable development of the community. These factors need to be considered in order to achieve food security and alleviate poverty in the coastal community.

Keywords: gender roles, capture fishing, fish processing, flying fish, tuna

INTRODUCTION

With over 1.6 million Filipinos that are dependent on fishing industry for their livelihood, the country remains to be one of the top producers of fish in the world (Barut & Garvilles, 2016). Fishing in the Philippines is considered as the major livelihood of fisherfolks living in the coastal areas. The province of Palawan has significantly contributed to such production considering its rich fishing grounds. Being an archipelagic province, Palawan is endowed with vast marine resources, particularly pelagic fish. In 2014, flying fish locally known as “*bulador*” registered a total production of 2,400 metric tons (PSA 2015), and in 2015, various tuna species (i.e., yellow fin tuna, skipjack, frigate tuna, big-eye tuna and eastern little tuna) have recorded a production of 559,605 metric tons (PSA 2016). Tuna fish are sold as fresh, chilled or frozen products while flying fish are being processed into dried form, which are among the post-harvest activities of the fisherfolks, providing them with additional income. However, there are constraints in this activity due to lack of support facilities that provide access to salt, ice and cold storage, which are lacking in strategic locations in many areas.

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Gender roles of women and men are defined by society and they vary among different societies and cultures, classes and ages, and may change through history (Williams et al. 2002 as described by Siar (2003), fishers and gatherers are resource users who make use of their everyday experiences and observations in learning about their environment. If scientists have their taxonomies, resource users have also their classification. Local fishers have a detailed system of classification that approximates the scientific classification (Walters 1997). On the other hand, access to resources is shaped by gender and age and the differences in resource knowledge possessed by men and women lead to differential access to fishery resources (Siar 2003). Globally, women in fishing communities play multidimensional roles that include livelihood, household, reproductive and community ones. Their involvements in fisheries value chains are often considered as invisible in spite of being active in a wide range of harvest and post-harvest activities, both in capture and culture fisheries (Gopal et al. 2012). According to Ostergaard (1992), women's issues loomed large on social and political agendas in the 1960s and entered the development agenda in the late 1960s and 1970s when several international aid agencies recognized that the failure of many of their developmental projects was due to the exclusion of women in the design and implementation of the projects. Even though women play important roles and contribute significantly to the impact and sustainability of development projects, their contribution to society has often been undervalued and unappreciated.

In Sitio Mangingisda, Barangay Langogan, Puerto Princesa City, Palawan, fish catchers and processors, composed of women and men have been engaged in the industry of flying fish activities for decades. Although most of them came from different provinces, such as Negros Oriental, Negros Occidental, Zamboanga del Norte and Cebu, they chose to settle in the coastal area of Langogan primarily to catch flying fish and process them into dried product. This is the only village in Palawan that is known to engage in flying fish capture and commercial processing. While, the tuna and tuna-like species using different modifications and methods of hook and line fishing gear have become its secondary fishing livelihood, considering that Palawan is rich with these resources.

Although several studies have been conducted in the Philippines on gender and development in the fisheries sector (Worldbank, 2014; Cagoco-Guiam 2013; Our study focus on the flying fish only while tuna like species were on noted and observed as the transition of the fishery occurs. Peralta 2008; Anonuevo 2000; and Siar 2003) the study on gender roles in the capture tuna and processing of flying fish has not been reported in the province and in the country. However, it is believed that such study is essential in determining the critical factors that would help fisherfolk attain sustainable livelihood. Hence, this study was to assess the gender roles in capture fishing, processing, marketing of flying fish and tuna and other livelihood activities of the respondents in Barangay Langogan, Puerto Princesa City, Palawan. Specifically, it was conducted with the following objectives:

- (1) to determine the socio-economic profile of the respondents, i.e. age, sex, civil status, educational attainment and income;
- (2) to investigate the roles of women and men in the capture of tuna and other pelagic fishes;
- (3) to determine the roles of women and men in the processing of flying fish;
- (4) to identify some problems specific to women and tuna fishing.

MATERIALS AND METHODS

Using guide questionnaires, the researchers conducted personal interview with the selected household members in Sitio Mangingisda, Barangay Langogan, Puerto Princesa City, Palawan (Figure 1). This barangay is located 81 kilometers from the City proper, where a small fishing community called Sitio Mangingisda was established (Pelone, pers comm.). The interview was undertaken by the MS Fisheries Students from Western Philippines University – Puerto Princesa City Campus and facilitated by a Barangay Councilor. A total of 36 respondents directly involved in the capture of flying fish and processing, hook and line fishing of tuna and other pelagic fishes and marketing of fresh and dried products, were interviewed randomly. Also undertaken was a photo documentation on the fishing gears including some facilities and other activities during the conduct of the survey.



SCOPE AND LIMITATION

The survey focused in the coastal community of Barangay Langogan particularly in Sitio Mangingisda, where fish catchers and fish processors reside. However, the interview was only limited to 36 respondents considering that most of the flying fish catchers, together with their respective families have temporarily migrated to Kalandagan, Araceli, Palawan, taking advantage of the fishing season in the area. Moreover, since the survey was undertaken on September and the fishing season for flying fish in Langogan is from October to May.

Nevertheless, tuna catchers, who permanently stayed in Sitio Mangingisda have shared relevant information that are useful for the study.

RESULTS

Socio-Economic Profile

Of the 36 respondents were interviewed, 23 or 63.87 percent are women with the aged ranging to 31 to 50 years old. While 13 or 36.11 percent were men at the aged ranging to 41-50 years old. (Figure 2.). Moreover, most of the respondents (86.11%) were married. (Figure 3).

In terms of education, many of the respondents have graduated elementary and high school comprising 28% and 22%, respectively. While some reached elementary and high school level. However, 3% of them had finish vocational education (Figure 4), which was achieved by only one men among the 36 respondents.

In terms of income, the majority of them (64%) have very low income ranging from PhP 1,000 – 5,000 but 25% of the respondents earned more than PhP 5,000 up to PhP 13,000. It was observed that the highest income could reach as much as PhP 22,000 (Figure 5), which was usually earned by the fish buyers or traders doing business in the area. Moreover, earnings of PhP 13,100 to PhP 17,000 were reported by some fishers who have sufficient financial capacity to catch fish using their own motorized boat coupled with other income contributed by women or wives in the family.

Table 1. Number of women and men respondents at different age ranges.

Age (years)	No. of men N=13	No. of men (%)	No. of women N=23	No. of women (%)	Total
21-30	2	15.38	4	17.39	6
31-40	3	23.07	7	30.43	10
41-50	4	30.76	7	30.43	11
51-60	3	23.07	1	4.34	4
61-up	1	7.69	4	17.39	5
TOTAL	13	100	23	100	36

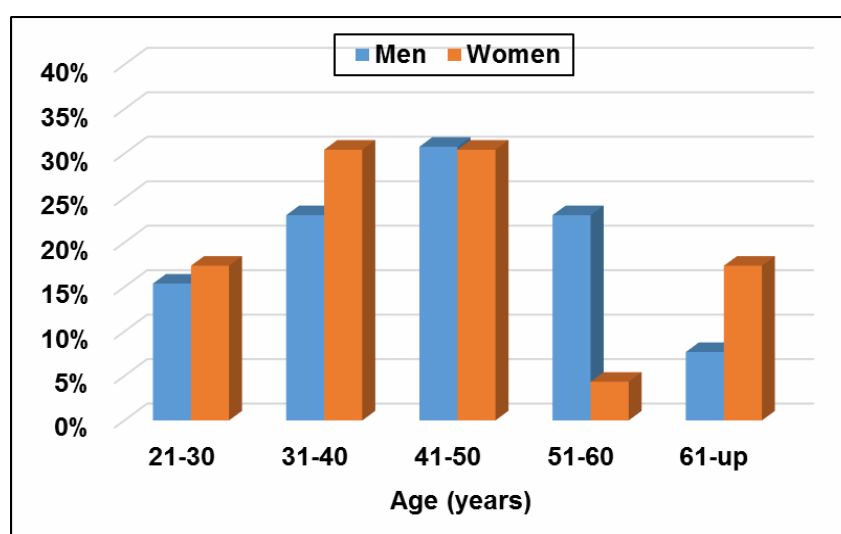


Figure 2. Age distribution of respondents in percentage

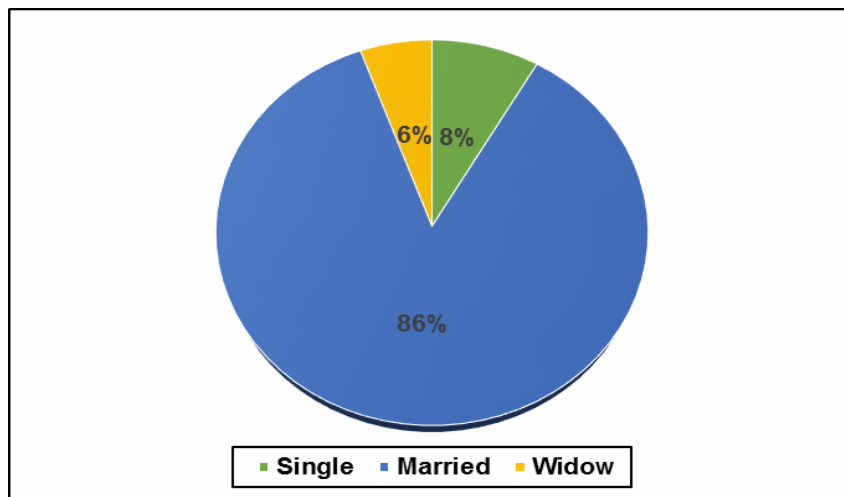


Figure 3. Civil status of all respondents.

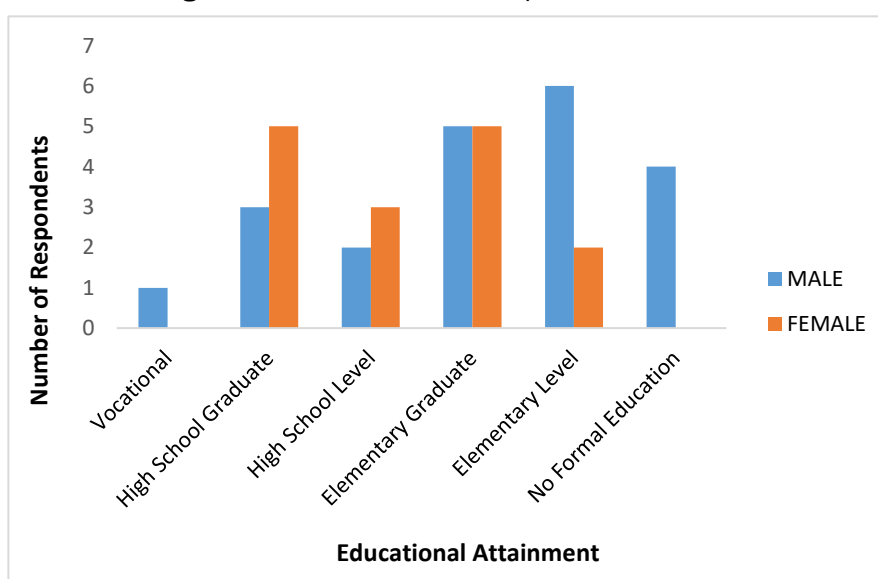


Figure 4. Educational attainment of Male and Female respondents

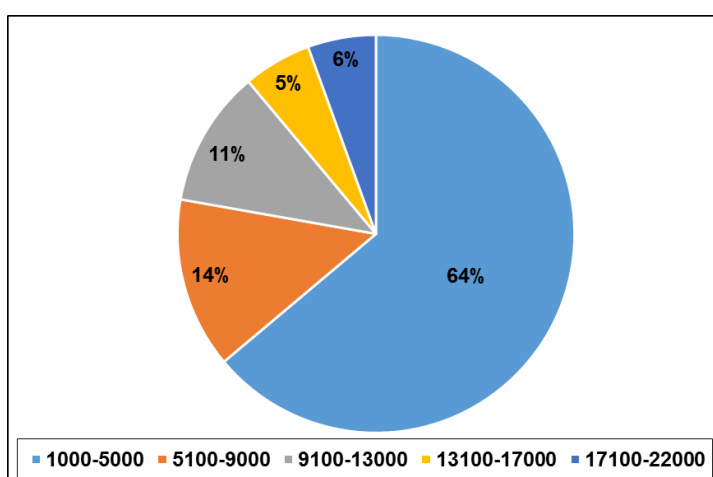


Figure 5. Percentage distribution of income (in Philippine Peso) of the respondents.

Capture of Tuna and Other Pelagic Fishes

The capture of tuna, flying fish and other pelagic fishes were solely done by men, in which out of 13 respondents, 10 were actively involved in capture fishing. This activity is considered as the main livelihood for men. However, women were also involved during the preparation of the needed supplies and materials prior to fishing (Table 2). The fishing gear used by men in catching flying fish is gillnet (Figure 6), while they used different types of hook and line for tuna and other pelagic fishes, (Figure 7).

Table 2. Roles of women and men in capture fishing.

Men	Women
<ul style="list-style-type: none"> • Cleaning, repair and maintenance of fishing boats and engine 	<ul style="list-style-type: none"> • Assist in boat cleaning
<ul style="list-style-type: none"> • Fishing gear/paraphernalia (i.e., hook and line, fishing nets, etc.) installation, repair/mending and maintenance 	<ul style="list-style-type: none"> • Assist in fishing net repair and maintenance
<ul style="list-style-type: none"> • Preparation of fishing gears prior to fishing operation 	<ul style="list-style-type: none"> • Assist in the preparation of baits for hook and line
<ul style="list-style-type: none"> • Catching of fish (i.e., tuna, flying fish and other pelagic fishes) 	



Figure 6. Gill net used by men in the capture of flying fish.



Figure 7. Different types of hook and line used by men in the capture of tuna and other pelagic fishes.

Women usually dominated men in the processing of flying fish. It is considered as the women's main livelihood, wherein all the women respondents are actively involved in this particular livelihood for many years. Generally, the women in Sitio Mangingisda are doing different activities in fish drying from cleaning until the fish are dried (Table 3). Among the men, three respondents engaged in this activity. Drying of flying fish only requires basic procedures. This was done immediately after the catch of the men are delivered to the buyers. Prior to drying, the fish are first soaked in the tanks filled with water and salt (Figure 8). The brine-soaked fishes are then placed/arranged in a drying racks or directly to the drying pavement (Figure9) for 3-4 days until these are completely dried. On the other hand, fish fermenting (*bagoong*) was also done by women but for family consumption purposes only.

Processing of Flying Fish

Table 3. Roles of women and men in fish processing.

Men	Women
<ul style="list-style-type: none"> • Assist in the hauling of brined fish to the drying area 	<ul style="list-style-type: none"> • Cleaning of the fish (i.e., washing, gutting and splitting)
<ul style="list-style-type: none"> • Assist in the collection and hauling of dried fish 	<ul style="list-style-type: none"> • Soaking of the cleaned fish into the tank with brine solution
	<ul style="list-style-type: none"> • Setting of drying racks and placing the brine-soaked fish to the racks
	<ul style="list-style-type: none"> • Removing of the dried fish from the dryer and delivery to the packaging area



Figure 9. Stilt solar dryer used for drying of flying fish.

Marketing of Fresh Tuna and Dried Flying Fish

Marketing of the fresh and dried fish products is both shared by women and men (Table 4). However, this was just a supplementary livelihood for both women and men, in which only 7 women and 3 men were involved. Marketing activities include the direct selling of fresh tuna, are done by women to the neighboring households for family food consumption. But the tuna catch of men are usually delivered to the buyers/traders that are present in Sitio Mangingisda which are further delivered to Puerto Princesa City public markets, and are primarily done by men. The marketing of dried fish was done by both women and men as shared responsibility, except for transporting of the products, which is usually performed by men. The dried products were regularly marketed to Cebu or Iloilo.

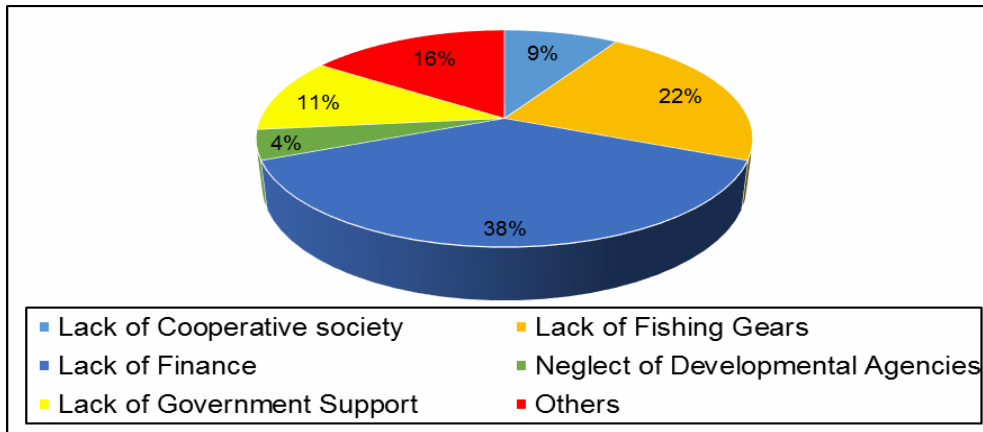
Table 4. Roles of women and men on marketing/trading.

Men	Women
<ul style="list-style-type: none"> • Icing and packaging of the fresh fish (tuna and tuna-like species) 	<ul style="list-style-type: none"> • Selling of the fresh fish catch (tuna and tuna-like species) to the neighboring areas (hawking)
<ul style="list-style-type: none"> • Packaging of the dried fish (flying fish) 	<ul style="list-style-type: none"> • Assist in the packaging of fresh fish and dried fish
<ul style="list-style-type: none"> • Transporting of the fresh fish and dried fish to Puerto Princesa City 	

Problems Affecting the Livelihood of the Respondents

As shown in Figure 10, the two major problems identified by the respondents are lack of finance and of fishing gears, contributing 38% and 22%, respectively. Other problems include illegal fishing, the third topmost problem that hinders their livelihood activities, lack of government support, and lack of cooperative society. The least-mentioned problem was neglect of development agencies (4%).

Figure 10. Problems identified by the respondents.



DISCUSSION

Based on the socio-economic profile of the respondents, it was found that women and men aged 31-50 years old contributed the highest percentage of involvement in fisheries livelihood activities. This information is in contrast with Philippine Statistics Authority (2016), wherein in 2015, women and men aged 20-24 years had the highest labor force participation rate at 25.9 and 27.6 percent, respectively. This can be explained by the fact that 86% of the respondents were married (31-50 years old), thus it is expected that they are presently working and earning money in order to support the needs of the family. Moreover, the educational attainment of the respondents are basically low, which could possibly be attributed to dropping out from school, especially the men because they need to work in order to supplement the income of their parents or, in many instances, because they become the primary income earners (PLAN;WAGI 2012 as cited by World Bank 2014). Besides, this may be due to the lack of resources that are needed to pay for other expenses, such as books, school supplies, uniforms, etc. that may result in high drop-out rates in school for both women and men.

This situation has been adapted by these fishermen because of the fishing seasonality of flying fish in Palawan. During the months of October to March, they stayed in Sitio Mangingisda in Barangay Langogan and catch flying fish, and from April to September, they will migrate to Kalandagan, Araceli, where fishing for flying fish is favorable. According to Nadeesha (2001), this continuous search for access to resource is driven by the need for sustenance and survival. Hence, because of their limited employment opportunities, they continue to work in the fishing industry despite the low income generated from such livelihood. The nature of their fishing activity is also influenced by the weather conditions, wherein fishing operation is only done when the sea is calm considering that their fishing boats are small with only 2-3 crew members. Furthermore, other livelihoods were also undertaken by women that serve as their alternative source of income, which include hog raising, retailing (sari-sari store), cashew-nut peeling, nipa shingles making and net mending.

It can be noticed that there were only few respondents involved in the capture of flying fish because the survey was conducted on the month of September, wherein majority of the catchers were in Kalandagan, Araceli during that time. Expectedly, the fish capture activities as well as proper fish handling and packaging of the fish products in the coastal village of Sitio Mangingisda were dominated by men. Whereas, post-harvest activities, i.e. fish processing involving the drying of flying fish and occasionally fish fermenting (fish paste or *bagoong*) were dominated by women. This situation conforms with the observation of Lwenya et al. (2001) that this traditional division of gender roles is mainstreamed by social and cultural norms that women are required to be near home to take care of the family. In addition, the subordinate roles of women or wives play an important part alongside with the men or their husbands (Vunisea 2004). Men, being the head of the family, have to do the much heavier workload. However, the complementary roles of men and women in the fishing community do not only alleviate poverty (Akinrotimi et al 2007) but are very essential to maintain the quality of the fish products (fresh and dried); in so doing, they ensure food safety for consumers and increase the market value or price of the product in the local market, which eventually benefit the producers or fisherfolks in the area. As in the case of the fishermen in Sitio Mangingisda, Olufayo (2012) supported the fact that fishing, marketing and processing were the usual major three activities in coastal environment. FAO (2005) and Raquiza (2005) also emphasized that women undertake 50-70% of local fish processing and marketing activities in the Philippines and they are also involved in mending nets and tending fishing equipment, and other activities. Moreover, it is estimated that out of the total population depending on capture fisheries, 47 percent are women (World Bank, 2012) and most of them are observed to be mostly concentrated in post-harvest activities particularly in the Philippines.

In spite of the varied livelihood activities of fisherfolks in the area, problems were still identified, thereby affecting their day to day activities. The major constraints that hinder their livelihood include lack of finance or capital, which lead to the insufficient supply of materials for the acquisition of new fishing gears and fishing boats, including the repair and maintenance of the same. The lack of government support and cooperation are other problems that were identified. According to the testimonies of the respondents, there were no government projects/interventions that extended to their community probably because of the lack of community organization in the form of fisherfolk or processors association or cooperatives, which is one of the requirements of the government agencies in choosing project beneficiaries. Although they have organized previously by creating the Langogan Fish Processors Association, however it became inactive for many years. Moreover, fish catchers have also identified illegal fishing activities in the open sea during their fishing operation. These include dynamite fishing, sodium cyanide fishing and the encroachment of commercial fishing vessels to their traditional fishing ground. All these activities hindered them in the effective catching of their target fish species because of the destructive effect to the fishes and their habitats, which make them to fish in the distant areas of the sea, approximately 3-5 miles from the shoreline. As a result, they have to spend more money for their fuel expenses in traveling far distance and sometimes their safety would be compromised especially during bad weather conditions.

CONCLUSION AND RECOMMENDATIONS

The age of the respondents with the most number of women and men involved in the capture of tuna and fish processing of flying fish as well as in marketing or trading of the fresh and dried fish products ranged from 31-50 years old. Income remains to be very low for majority of the respondents, which only ranged from PhP 1,000 to PhP 5,000 per month. The high income, which reached as high as PhP 22,000 per month, was earned by those who were Furthermore, the highest education was attained by only one respondent, who has completed vocational course, while most of them were elementary and high school graduate engaged in buying or trading business. This is

one of the reasons why most of the respondents were still at the poverty level because their income is just sufficient for the family needs. In terms of gender roles, all women respondents were engaged in fish processing while men were predominantly engaged in capture fishing in the open sea. According to Gustavson 2011, livelihoods within the fishing industry are structured by gender, i.e. men fish, women do not; women do fish processing, some men also do fish processing.

Despite the fact that women and men in Sitio Mangingisda have continuous occupation, some problems were still commonly experienced, which are mainly contributed by the lack of capital to purchase new fishing gears as well as in the operating and maintenance expenses that will be used in capture fishing. Indeed, financial problem is one of the major constraints in municipal fisheries sector (Lim et al. 1995). In addition, they lack government interventions that would provide them with the financial support needed for their existing livelihood as well as other alternative source of income. Other problems like illegal fishing activities (dynamite fishing, cyanide fishing and encroachment of commercial fishing vessels) were also observed by the fish catchers to persistently exist in their traditional fishing grounds.

To address these issues and to help the women and men in Barangay Langogan in uplifting their economic condition, the following interventions and projects are recommended to be provided, which include: financial assistance that will be used for the procurement of additional fishing gears and paraphernalia for the capture of tuna and flying fish including other operating and maintenance expenses; reorganization of the fisherfolk associations or cooperatives for easy access to government interventions; and training and deputation of fish warden to curb illegal fishing activities in the area.

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Minding the Family Fish Farms: Tales of Three Women Managers

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Christine Mae D. Hernando*

ABSTRACT

Landing an executive post in the family aquaculture business due to unfortunate events that made the male members unavailable for the task, the women managers share the challenges of running the business, which they believe is a deeply entrenched and integrated system of male dominance. Using a descriptive approach, the study presents the socio-demographic and economic characteristics of the women managers, their managerial performance as viewed from the lenses of the women managers themselves, and their business outcomes. According to the women, the challenge begins in the planning stage when decisions have to be made e.g. when to harvest and when to sell, whether to buy a boat or a *bangka*, and what kind of species to grow, formulating business strategies such as coinciding time to harvest with the increase in prices, aiming for 60% *semilyas*/fingerlings survival rate, among others. All three of these women believe that each of their own leadership styles i.e., autocratic, democratic, and laissez faire are effective since they are able to motivate their employees, although they admit having to contend with getting the work done and other behavioral issues of the latter. In terms of exercising financial control, only one of the women managers monitors the monetary returns of the business, which she does by keeping tab of all expenses, comparing the number of *bangus* harvested to the number of *bangus* during the transition phase, and maintaining separate bank accounts for operations and sales. Keeping the business afloat appears to be another challenge for all of the managers: one has her business at loss and aspires to recover it to be sufficient for their family; another has it at break-even but does not plan to implement any more changes; and the third, gains profit, but only enough to pay for basic personal necessities. However, two of them aim for bigger profits for the purpose of self-sufficiency, while the other manager feels quite contented already with the fishpond's current earnings. The study recommends that patriarchy must be addressed as a basic problem of gender inequality in managerial opportunities in the aquaculture industry. Furthermore, there must be state provisions thru education and training specifically for honing business skills of women aquaculture managers as well as government policies for the protection of their health and welfare.

Key words: gender, management performance, organizational effectiveness

INTRODUCTION

Aquaculture is the farming of diverse kinds of aquatic plants and animals of different species in water (FAO, 2014). Aquaculture production takes place in various sources including brackish water ponds, freshwater ponds, fish pens and cages (Aypa, 1995). There has been an observed rapid growth in the aquaculture sector from 3 million tons of aquatic animals and plants in the 1970 to the present total production exceeding 100 million tons (Brugere & Williams, 2017). In the Philippines, aquaculture is an important sector in fisheries and the most dynamic sector since the decline of marine fisheries (Andrada, 2015).

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According to reports, harvests from July to September 2017 were recorded at 456 thousand metric tons which slightly increased by 0.32 percent during the quarter (Philippines Statistics Authority, 2017).

Aquaculture is perceived to be gendered (Rajaratnam as cited in Brugere & Williams, 2017) and it has been observed that despite rapid growth in the aquaculture sector, women's opportunities have not exactly kept pace with such growth (Andrada, 2015). Women's limited participation in the aquaculture sector can be explained by a number of factors such as women's lack of skills and capacity (Voeten & Ottens 1997); high levels of investment required and nature of work involved, (Luomba, 2013); the fact that aquaculture jobs are dangerous and uncomfortable for women (Dambatta et al, 2016); changes in the division of labor in society (Dambatta et al., 2016); and systemic barriers such as lack of legal rights (Brugere & Williams, 2017).

As a result, women comprise only 12% of the aquaculture workforce, and are usually working on jobs of lower importance and often on a temporary basis (FAO as cited in Dambatta, 2016). Women's tasks involve small-scale production, post-harvest industrial and artisanal processing, value addition, marketing and sales (Brugere & Williams, 2017). Given only marginal roles in the aquaculture sector, women scarcely hold senior management positions in the aquaculture sector and men have more promotion opportunities (Dambatta, 2016). As production increases, women's engagement in the process decreases and rarely do they become managers (Brugere & Williams, 2017).

Other explanations for women's roles in aquaculture can be seen in the fact that gender roles are constructed socially and can differ between cultures and socio-political, economic, and technological contexts. The scope and extent of women's participation in aquaculture production in Asia are influenced by the level of aquaculture technology in a particular country and the role of women in society (Baluyut, n.d).

Since the 1980s, there has been an increasing interest in the role of women managers and entrepreneurs as viewed from an interdisciplinary perspective (Paulini & Demartini, 2016). A number of recent studies focused on the managerial performance of women aquaculture managers, but Kariv (2009) observed that these studies were said to be explained in different perspectives such as the "resource-based view", which believes that human capital, motivations and the choice of industry, among others, are important determinants of managerial performance and the "output-oriented perspective", which evaluates managerial performance mainly through business outcomes such as sales turnover and profitability; growth; and longevity. Only a few of the studies delved deeper on the "process-oriented perspective" that looks at the differences of men and women in dealing with the internal transactions in the organization (Kariv, 2009). Moreover, the process-oriented perspective sees the business outcome as result of the business processes in the context of the environment and organizational processes. This view values the managerial performances and executions of entrepreneurs rather than their traits and motivations (Kariv, 2009). Other views look at managerial performance as influenced by both the managers' and workers' competency and organizational culture (Verboncu, 2014).

There is the perception that the lack of gender-disaggregated information prevents a more accurate understanding of the role of women in the aquaculture sector (Williams, et al, 2010; Brugere & Williams, 2017). There are reports about women who have become aquaculture entrepreneurs on their own or with help from others (Shanthi as cited in Brugere & Williams, 2017), but more studies are needed to provide explanations on their success (Brugere & Williams, 2017). There is also the

paucity of existing studies on managerial performance of women entrepreneurs relative to that on men (Chaganti & Parasuraman, 1996 ; Sonfield, Lussier, Corman, & McKinney, 2001).

Addressing the need for a better understanding of the managerial roles of women aquaculture entrepreneur-managers, this paper presents the results of the study that described management practices and business outcomes of three women aquaculture managers in the province of Iloilo, Philippines. The study was undertaken in 2017. The general objective of the study was to describe the tasks and challenges women managers face in the performance of their managerial responsibilities in the fish farms as viewed from the lenses of the women managers themselves. Specifically, the study intended to: 1) identify and describe the socio-demographic characteristics of three women fish pond managers, including how they were able to obtain their managerial positions in the family fish pond business; 2) describe their managerial performance, and 3) describe and assess their business outcomes.

Conceptual Framework

The conceptual framework of the study takes on both a resource-based as well as process-oriented approach in describing managerial performance of women managers. Presented in the open systems model, the socio-demographic profile of the women managers is the input variable and indicated by economic status, business location, business profile, age, marital status, educational attainment, work experience, income, and manner of managerial appointment, i.e., how they were able to acquire their present managerial positions in the family fish pond business. Managerial performance is the throughput variable. It is indicated by the functions of planning, leading, organizing, and controlling. Business outcomes become the output variable, which is indicated by financial status, employees’ level of job satisfaction, and work relations.

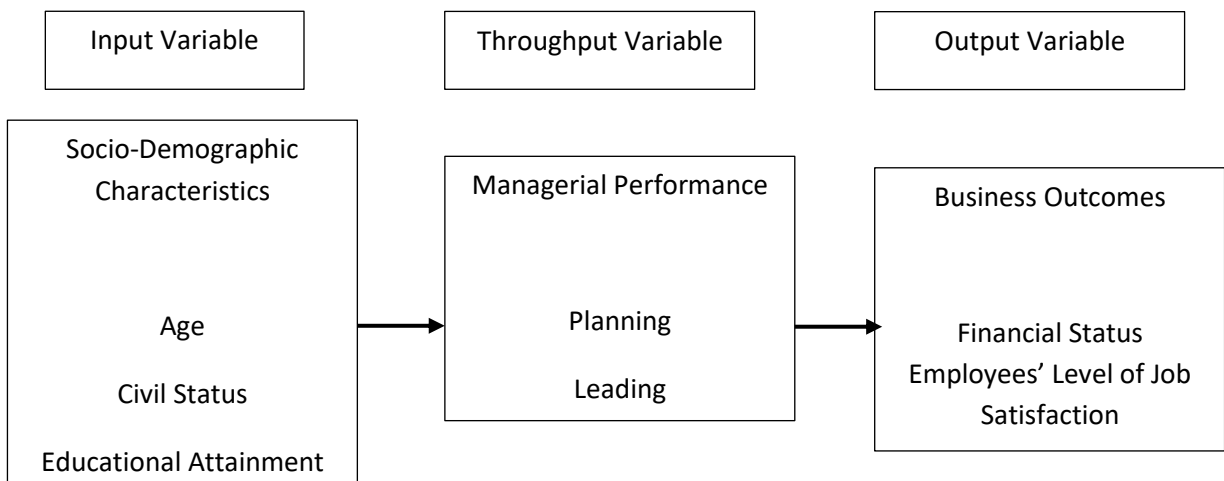


Figure 1. Conceptual Framework of the Study

METHODOLOGY

The study used a qualitative research design as it allows for more comprehensive and diverse responses from participants of the study. Human behavior is given more importance than metrics or numbers (Melendez, 2011). The key informants of the study were chosen purposively based on the following criteria: 1) they are the owners of the fishpond business, 2) exercise supervision over the business, and 3) are directly involved in the management of fish pond operations. Primary data were generated using key informant interviews with the women managers. Interview questions involved the socio demographic characteristics of the women managers, their managerial performance, and business outcomes of their aquaculture enterprises. Using thematic analysis, data generated from interviews were organized, coded, and examined for common or recurring ideas, experiences, and perspectives of the women managers.

RESULTS AND DISCUSSION

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE WOMEN MANAGERS

One of the women managers is between 45 to 50 years old and single while two of them are above 50 years of age and married. All of them are college graduates. One is a Certified Public Accountant (CPA) and has a Master of Business Administration degree. As far as the number of years in the managerial position is concerned, one has only a year's experience in the job, another has been in the position for seven years now, while the third one has been managing the family fishpond for nine years already. The women take on other roles besides being managers of their fish farms. They are members of the Soroptimist International of Iloilo and Iloilo Fish Producers Association.

The sizes of their fishponds in hectares are as follows: 3.9, 25, and 40 hectares. Reluctant to reveal the monthly incomes derived from their operations, the lady managers reason out that their income varies depending on natural conditions as well as abnormal costs, calamities, and unforeseen events

Having come from different backgrounds, the three managers have different reasons as to how they acquired their managerial positions in their aquaculture businesses. One of the women managers was on her way to achieving her dream in the corporate world when company downsizing due to financial constraints practically "evicted" her from an otherwise secure position in the company and also, the sudden unexpected turn of events in the family forced her to rethink her options:

"My company was trying to reduce costs. They said they cannot afford to keep my department anymore. I was thinking that it is time for me to pursue my dreams of having a business and being successful abroad. After just barely a week in Canada, I received the news that my father had died of a heart attack. My brothers were supposed to take over the family business, but they did not want to. So, I had to decide between pursuing my dream or continuing my father's legacy, *our punong* (fish pond)."

Patriarchy remains evident in Philippine culture and manifests in traditional family cultures. Women are often termed as the "weaker sex." This is seen in the other manager's story of her succession in the family fish pond business:

"We got the business in its dying form. *Makuha man lang sang babayi ang business kung wala na lalaki nga matak-over* (women are able to take over the business only if there

are no men available for the task). My father prepared both of my brothers to be the successors of our *punong*. Ever since they were kids, he equipped them with knowledge and skills on how to manage the *punong*. He believed that the women of the family should be somewhere, anywhere, except in agriculture and aquaculture management.”

The third women manager has an almost similar account of her appointment as fishpond manager:

“Before my husband was diagnosed, he was always a *sigá* (popular person) in the fishing port. I rarely go to the fishing port with him before it was renovated because *indi gid na ya lugar para sa babayi*/its not the place for women. *Kaladlukan para sa babayi especially ang height gid sang baligya-anay* is 10 pm to 12 am (it’s scary for the women to be at the fishing port especially at the height of the selling activities at 10 to 12am.) It was like a berth full of thugs.”

Eventually, the women managers learned to adjust to their new roles, which included visiting the market regularly at the Iloilo fishing port after it was renovated. They noted that it is now more accommodating to women. In fact, there are a lot more women now than in the past in the newly constructed port. However, the women say that they need to prove their competence in managing and implementing decisions before they could have the chance to manage the fishponds. They all believed that this business was a deeply entrenched and integrated system of male dominance. But due to some unfortunate events that caused the men in the family to either lose interest or the capability to manage the business, women had no choice but to take over the reins of the family business. Furthermore, they perceive that the aquaculture sector gradually evolved to “welcome women” but is not yet ready for female supremacy. Despite the increase of women’s participation in the aquaculture sector, the three women managers feel that they do not seem to enjoy the same comparative management opportunities, privileges, and benefits as men.

Such observations of the women managers can be explained mainly in the light of the patriarchal nature of Philippine culture and society where men take on major leadership responsibilities in the household as well as community while women are expected to be merely supportive of their husbands. The gendered division of labor still prevailing in most of Philippine society (Hondrade & Rodriguez, 1994) also further affirms the gendered definition of societal responsibilities such that the husband is the breadwinner being the head of the family while women manage the household budget and take care of the children. There is apparently a carry-over of such gendered role definitions even in the aquaculture enterprises of the three women managers.

MANAGERIAL PERFORMANCE

Planning

In the function of planning, all three women were asked questions about setting goals for the business. Two out of the three women set goals/ targets for the business. One woman said her goal was to harvest two to three times every year while the other one said she aims to earn enough income for the family to be self-sufficient. Both of these women get advice with regard to running the fishpond business from relatives. However, one women manager does not set targets for the business because as she would say, “she just accepts what she can get”.

One of the woman managers stated that she had to decide when to harvest and when to sell while the other manager got to decide whether she should buy a boat or a *bangka*, what kind of species to grow, and how to divide the land for agricultural and aquaculture purposes. The third woman manager had to decide if she should continue or not the management style of the previous manager. All three women have full authority over the business and discretion over their businesses. When asked if they were directly involved in making decisions for the business, all three women answered “yes”.

It was also found that all three women formulate strategies for the business. One said that she bases the time to harvest with the increase in prices, the information of which comes from their fish broker. Another stated that she aims for 60% survival rate of *semilyas* (fingerlings). She makes sure that within 30 days or one month, she transfers them to the transition pond. She also ensures that no pond is vacant and that there is always fish in it. The third one stated that she plants corn and *monggo* on her remaining land for additional income.

Leading

All of the fish farm managers have people under their supervision. One has six workers plus families on site while the other one has one fishpond caretaker and also, one assistant, her son. The third one has one *bantay*/watchman and three daily workers, but contracts eight men to assist during 5-day harvests.

The three lady managers were also asked questions about their motivational and leadership skills. When asked if they motivate their employees, only two of them answered “yes”. Of the two who said “yes”, one said that she motivates them by leading through example. She asserts that constant presence and communication is the key. She also motivates them by showing that she really cares for them and looks after their welfare. The other manager stated that she motivates her subordinates by offering extra money and helping them out with their financial problems.

The third one with the smallest pond area said that her lone subordinate is already very old and does not need to be motivated since she is quite diligent in her work. When asked to rate the effectiveness (i.e. able to accomplish the goals and targets of the business) of their motivation efforts in a scale of one to five with five as the most effective, two of the women managers rated their level of effectiveness as “five”.

Each of the managers claim to have their own distinct leadership style. One manager said she uses a democratic leadership style while the other one simply uses the *laissez faire* type because she has only one subordinate who is quite old already and can be relied upon to do things on her own. The third one said that her leadership style depends upon the situation. She uses the autocratic style of leadership especially in decision-making if she believes she is right in her decisions and does not need the help of her subordinates otherwise she becomes democratic in case she needs the participation of subordinates.

All three of these women believe that each of their own leadership styles is effective in the sense that it encourages employees to perform their jobs well. However, they also admit to having problems with their subordinates. One of the managers admits that she sometimes unintentionally hurts her subordinates’ feelings. She would get unexpected requests for loans from subordinates, who would occasionally tell her lies instead of the truth. The other managers report that they have to deal with subordinates’ behavioral problems as well as issues in getting the job done.

Controlling

Questions on controlling the business were also raised with the managers. It was discovered that only one of the three managers evaluated the work performance of her subordinates. Only one also measured subordinates' performance outputs against their goals/ targets. Lastly, only one of them monitored the financial returns of the business as she keeps track of all expenses, compares the number of *bangus* (milkfish) harvested to the number of *bangus* during the transition phase, and separates bank accounts for operations from that of sales.

BUSINESS OUTCOMES

Financial Condition

One manager has her business at loss and aspires to recover it to be sufficient for their family; one has it at break-even, and does not plan to implement any more changes; and the last one gained profit but only enough to pay for her basic necessities. In addition, two of them aimed for bigger profit, both for the purpose of self-sufficiency. The third manager does not intend to alter any current operations as she says that she is contented with the fishpond's earnings.

Employees' Level of Job Satisfaction

In a range of one to five with five as the most satisfied, all three women managers gave their employees a rating of "five". They say that such high level of job satisfaction is seen in the eagerness of their employees to finish their assigned tasks despite the difficulty of the tasks, proper compensations for the work done, and the fact that employees never asked for a promotion, or salary increase all this time. Furthermore, subordinates likewise never asked for additional wages, but only for a loan when in dire financial straits.

Work Relations

All of them claimed to be effective leaders. They believe that to be an effective leader means knowing the overall purpose and goals of their enterprises, and the agreed-upon strategies to achieve them. All of them say that they have cordial relations with their employees because they possess outstanding communication skills, could inspire them to do their job well, and know how to assess risk and run scenarios that will help make better business decisions as well as human relations. Furthermore, they believe that they are already effective leaders, and as such there is no need to improve on work relationships with employees.

The findings on the managerial performance as well as business outcomes of the three women fishpond managers appear to refute the report that men control aquaculture production in the Philippines (Nandeesh, Okali, and Reantaso, n.d.). Moreover, the findings appear to agree with the following observations of Balayut (n.d.):

"The Filipina is usually involved in all phases of fish farm planning, development, and operation, in all types and scales of aquaculture, and in all stages of fish production. She may be any of the following: owner/operator, fish farm manager, hatchery or pond technician, fishpond caretaker or worker, technical consultant, or any combination of these."

"As owner/operator, she manages the farm herself with the help of technicians and caretakers, or hires a fishpond manager, who could also be a woman, to supervise the

project on her behalf. As fishpond manager, she is responsible for overseeing the various operations of the fishpond through the different stages of development - from planning to construction to operation.”

CONCLUSION AND RECOMMENDATIONS

All three managers were well above the age of 45. Two out of the three are married and all of them have graduated from college. All three have had many years of experience in managerial positions. The land areas for business vary in sizes. Their incomes vary with the area and conditions as well.

All of the women managers got to their executive positions when the men in the family became unavailable for the post. All of them exercise authority over business operations, exercise full discretion in making decisions, and engage in some form of enterprise planning by setting targets. Each of the women managers has her own distinct leadership style, but all of them think that they are effective leaders, able to motivate subordinates to do their job well

All of the managers had no problems in planning and leading, controlling and monitoring the business. In addition, two out of the three women managers were not concerned about meeting their targets at all. This led to unproductive results for the whole business. All managers have claimed good work relations and high levels of employee job satisfaction.

In order to improve quality of managerial performance, the women managers recommend that government and civil society organizations concerned should assist in addressing the following issues with regard women’s managerial opportunities in the aquaculture industry: 1) patriarchy must be addressed as a basic problem of gender inequality in managerial opportunity; 2) encourage women to be involved in male-dominated professions such as aquaculture; 3) promote gender and development in aquaculture management trainings and education programs in order to promote positive attitudes, a goal oriented and risk taking outlook, and motivation to be strong-willed and assertive as these are necessary leadership qualities especially for women; 4) provide for special measures for the protection and promotion of women’s rights, health, welfare and security while in the performance of their managerial functions; and 5) promotion of sustainable aquaculture production practices especially for fish farms.

With more access to managerial positions in the fishpond enterprises and greater opportunities to develop innovation, creativity, and risk taking, women managers would be better equipped to manage and supervise tasks in the male dominated aquaculture sector. Such opportunities help to ensure successful managerial performance and consequently, better business outcomes that can redound to significant contributions to community well-being and overall national development.

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Disaster Preparedness of Fisherfolk Communities in Panay Island

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ABSTRACT

The research aimed to find out the level of disaster preparedness of fisherfolk communities in Panay Island and was conducted among fisherfolk, personnel, and volunteers of the disaster risk reduction and management offices of the provinces, cities and towns. It encompasses such aspects as evacuation, transportation and communication, relief, disaster preparedness training, trained personnel, search, rescue and retrieval operation, medical team, coordination, public order and safety, and information dissemination. The overall disaster preparedness of the fisherfolk communities was rated as moderately prepared. The cities had the highest and the *barangays* had the lowest. The communities were less prepared in “Public order and safety”, but prepared in “medical team”, “search, rescue, and retrieval operation”, “relief”, “transportation and communication”, and “evacuation”. They were very much prepared in “trained personnel”, and “disaster preparedness training”. The fisherfolk in the *barangays* were not prepared in “medical team”, and less prepared in “public order and safety”, “search, rescue, and retrieval operation”, and “transportation and communication”.

The disaster preparedness of the females was significantly higher than that of the males. Teenagers, mature adults, and the middle aged were significantly prepared than the young adults and the aged. Professionals were significantly more prepared than those in the college level, the college level over those in the high school, and the high school over those in the elementary. Permanently employed fisherfolk had significantly lower disaster preparedness than that of the not permanently employed, and the businessmen. Mothers were significantly more prepared than the fathers, children and siblings; grandmothers over grandfathers, and aunts over uncles. The middle class were significantly more prepared than the poor, the poor over the very poor and the very poor over the extremely poor. Other groups having significantly lower disaster preparedness were: a.) second and third class municipalities, b.) province- Antique c.) capital town- Kalibo. It is concluded that the level of disaster preparedness of the fisherfolk in Panay Island is not enough in facing future disasters.

Keywords: disaster, fisherfolk, Panay, preparedness, community preparedness

INTRODUCTION

The increasing frequency, strength and magnitude of meteorological disasters never seen before, point to the urgency for tropical countries to brace themselves for greater preventive, damage-mitigating, and control measures. Typhoons, earthquakes are getting stronger and stronger, storm surges and floods getting higher and higher, all because of climate change. The Philippines, being an archipelago, is composed of islands surrounded by seas making them vulnerable to all these hydrological disasters. Its location in the tropics aggravates the situation, thereby compelling the people in constant watch for the retinue of storms coming every year.

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Faced by these disaster scares in recent years, the most immediate question that bothered the mind of the researcher was: How safe and how prepared are the fisherfolk in the coastal towns of Panay Island. As a stakeholder conducting technology transfer in the coastal areas, it becomes her self-imposed responsibility to help in insuring that facing future disasters should be pre-empted in order to avoid undue damage to lives and properties. Along that premise, a head start in finding out how ready are these fisherfolk and determine which sector of the population should be subjects of more actions; hence this study (Granath, 2014).

OBJECTIVES

The study aimed to find out:

1. the disaster preparedness of the fisherfolk communities in Panay Island, particularly the provinces, cities, municipalities, *barangays* and families;
2. the disaster preparedness of the fisherfolk in terms of evacuation, transportation and communication, relief, search, rescue, and retrieval operation, disaster preparedness training, trained personnel, coordination, medical team, public order and safety, and information and dissemination;
3. the disaster preparedness of the fisherfolk in the *barangays* grouped according to sex, age educational attainment, status of employment, status in the family, monthly family income, and civil status;
4. the significant difference of the disaster preparedness of the fisherfolk grouped according to sex, age, educational attainment, status of employment, status in the family, monthly family income, and civil status; and
5. the groups least prepared during disaster.

Heavy human casualties usually result from poor preparation. There are also laws greatly disregarded because the impending danger seemed not evident, just to realize things too late. Compliance to these laws could have mitigated the magnitude of the damage. Dating back to the 1970's, the greenbelt law required buffer zone of 50-100 meters on areas facing the open seas and 20-50 meters along riverbanks (Presidential Decree 705, PD 953, PD 1067, MNR Administrative Order 42, DENRAO 76). Republic Act 8850 requires planting of greenbelts along fishpond dikes. These laws had been observed more on the breach than in compliance. The effectiveness of greenbelts in reducing the wave energy of storm surges and tsunamis can be gleaned from both anecdotal and scientific reports. The onslaught of catastrophes imposes upon each individual that not only the government is responsible of the people's safety. The government is responsible in giving current information and warnings regarding the typhoons, in assisting and helping the victims especially in evacuation, in assuring the safety of the people, in educating the public on proper preparations during typhoons, and in helping them cope up from the calamity.

On the other hand, the people are responsible in seeking valid and up-t-date information and warnings through listening to radios, television and even though social media networking sites and then giving it immediate response, in making sure that they are in safe places, and more importantly in giving their full trust in the government's endeavor through coordination and cooperation (Lomerio, 2009).

Rollon (2010) viewed disaster preparedness as "prevention is always an ideal strategy". Countries with long coastlines such as the Philippines are considered naturally high risk and vulnerability since exposure are high. He said that there is a long list of what the community can do in disaster management especially in relation to preparedness, adaptation and mitigation. The community should organize planning and response teams during pre-disaster and emergent post-disaster. A basic requirement is to develop emergency or evacuation plans such as routes, protective shelters, and food provisions in case of disasters. The multi-hazard maps in particular are very useful for this purpose. With these emergency or disaster plans, communities can conduct periodic drills and exercises for the safe evacuation of households, schools and commercial and industrial establishments.

Lomerio (2009) suggested the following steps for successful DRRM implementation, such as, but not limited to knowledge to disaster plan posting of risk/hazard maps, access to updated information on the daily weather advisory, understanding of early warning signals (EWS), such as public storm warning signals (PSEWS), dissemination strategy of standard warning information, designation of evacuation routes and protecting them with sand bags, possible, and signage to insure safe passage to the camp, availability to emergency response equipment, as well as trained volunteers with a prepared search and rescue plan, community protection plan for potable water supply sources, cleaning and unclogging of drainage through people' s cooperation and initiative, inspection and preparation of survival kits, and resupply, if necessary, insuring that each family member understands the danger of a disaster and its associated risks.

The study followed the thread line of the foregoing review of literature in pursuing the objectives of the study.

METHODOLOGY

The descriptive research design was used in conducting the study among the fisherfolk communities in Panay Island, involving 998 fisherfolk, and 162 volunteers and personnel of the municipal, city, and provincial Disaster Risk Reduction and Management Council Office (DRRMCO).

Four sets of alternative type researcher-made questionnaire were used. One for the barangay to be answered by the fisherfolk; three other sets were floated to the volunteers and personnel of the municipal, city and provincial DRRMCO. The four sets of questionnaire were basically the same. It differed only on portions where their roles in the community disaster preparedness so demand. They were translated into the local dialect.

The level of disaster preparedness of the fisherfolk communities was determined using frequency count and mean, while T-test and F-test were used to find out significant differences. Respondents' responses were rated using the five-point Likert scale.

Findings of the Study

The overall disaster preparedness of the fisherfolk communities in Panay Island was moderately prepared. The cities had the highest and the *barangays* had the lowest disaster preparation.

Disaster preparedness of fisherfolk communities as a whole. 8 Fisherfolk group	Mean	Verbal Interpretation
<i>Barangays</i>	3.01	Moderately Prepared
Municipalities	4.01	Prepared
Cities	4.61	Very Much Prepared
Provinces	4.43	Very Much Prepared
Overall Mean	3.18	Moderately Prepared

The fisherfolk communities as a whole were less prepared in "Public order and safety, but prepared in "Medical team," "Search, rescue, and retrieval operation," "Relief," "Transportation and communication," "Evacuation," and "Coordination." The highest was "Trained personnel," followed by "Personnel training" described as very much prepared.

Area of Preparedness	Brgy	Mun	Pro	Cities	Mean	V. I.
Evacuation	2.90	3.95	4.57	4.86	4.07	P
Transportation and Communication	2.59	3.78	4.17	4.81	3.96	P
Relief	3.76	3.64	4.18	4.00	3.90	P
Search, Rescue and Retrieval Operation	2.41	4.10	4.02	4.11	3.81	P
Disaster Preparedness Training	3.53	4.08	4.76	4.86	4.36	VMP
Trained personnel	3.14	4.91	4.64	4.89	4.47	VMP
Coordination	3.04	4.43	4.43	4.57	4.12	P
Medical Team	1.64	4.58	3.64	4.14	3.50	P
Public Order and Safety	2.37	2.54	1.36	3.71	2,50	LP
Information Dissemination	3.64	4.56	4.79	4.86	4.46	VMP

Table 2. Disaster Preparedness of Fisherfolk Communities by Area of Preparation

The fisherfolks in the *barangays* were not prepared in “Medical team” and less prepared in “Public order and safety,” Search, rescue, and retrieval operation,” and “Transportation and communication.”

Area of Preparedness	Mean	Verbal Interpretation
Evacuation	2.90	Moderately Prepared
Transportation and Communication	2.59	Less Prepared
Relief	3.76	Prepared
Search, Rescue and Retrieval Operation	2.41	Less Prepared
Disaster Preparedness Training	3.53	Prepared
Trained Personnel	3.14	Moderately Prepared
Coordination	3.04	Moderately Prepared
Medical Team	1.64	Not Prepared
Public Order and Safety	2.37	Less Prepared
Information Dissemination	3.64	Prepared
Overall Mean	3.01	Moderately prepared

Table 3. Description of Group’s Disaster Preparedness When Grouped According to Demographic Profile

The disaster preparedness of the females was significantly higher than those the males. Disaster preparedness of the fisherfolks varied at different stages of their lives where the middle aged, old adults, and the very old adults were significantly more prepared than the young adults and the old adults. Old adults were significantly more prepared than the mature adults, and the old aged adults. Professionals were significantly more prepared than those in the college level, the college level over those in the high school, and the high school over those in the elementary. Permanently employed fisherfolks had significantly lower disaster preparedness than that of the not permanently employed, and the businessmen. Mothers were significantly more prepared than the fathers, sons and daughters, and brothers and sisters; grandmothers over grandfathers, and aunts over uncles. The middle class were significantly more prepared than the poor, the poor over the very poor and the very poor over the extremely poor.

The level of disaster preparedness of the second and third class municipalities was significantly lower than that of the first, fourth and fifth class. Roxas City was significantly more prepared than Iloilo City and Kalibo, while San Jose de Buenavista was also significantly more prepared than Kalibo. Antique was far less prepared than the three other provinces such as Aklan, Iloilo, and Capiz.

CONCLUSIONS

- The level of disaster preparedness of the fisherfolk in Panay Island is not enough to face Future disasters.
- Disaster preparedness of the *barangays* and municipalities needs extra attention of the government and other lead agencies.
- The male, young adults, elementary graders, permanently employed, fathers, grandfathers, uncles, sons and daughters, and the extremely poor had difficulty in coping with disaster preparedness.
- The government is not serious and strict enough in implementing the laws on disaster risk reduction, mitigation, and management, thereby jeopardizing medical services and endangering public order and safety.
- Fisherfolk were hesitant to leave their homes during disasters.
- Education and poverty are factors in the disaster preparedness of the fisherfolks.

RECOMMENDATIONS

- The disaster risk reduction and management program in all levels of the government units should be implemented more effectively and continuously.
- Extra attention and support should be extended to the *barangays* in order to strengthen Disaster preparedness.
- The DRRMCO should study and set acceptable schedules for disaster preparedness trainings for the male, young adults, less schooled, permanently employed, fathers, grandfathers, uncles, sons and daughters, and the extremely poor in order to enhance their disaster preparedness.
- Fisherfolks should vacate the 50-100 meter danger zone and reserve the area for recreational purposes, mangrove, wharf or whatever the community may decide.
- Fisherfolk families and *barangays* should instantly heed pre-emptive evacuation, Maintain medical kits, and make use of cellphones before the signal goes off during disasters.
- The *barangays* should educate more the fisherfolks on disaster preparedness and take initiatives to procure search and rescue boats, transportation and communication systems.

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Enabling Women to be Leaders of Change in Building Household Resilience and Sustainable Fisheries

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ABSTRACT

The implementation of the “Harnessing Markets to Secure Future of Near Shore Fishers” project by Rare Philippines offered a new perspective in understanding how women were capacitated to be leaders in building household economic resilience and sustainable fisheries. The Project was designed to test how markets can incentivize adoption of sustainable fishing practices and build household resilience. It conducted foundational studies to better understand the nature, scope, landscape and gendered aspects of livelihood implementation and local fishery resources as prelude to identification of appropriate interventions and turnkey solutions. It worked on building household resilience through creation of community savings associations and social capital that enabled more women in fishing communities to actively participate in leadership roles, build financial assets, and become agents of behavior change while linking them to local and national government and academe to tap technical and financial resources. The Project leveraged the creation of savings club to cushion the impacts of crises and shocks that led to reduced risks and vulnerabilities in the household. Gender needs and preferences were considered to encourage high participation of communities to project initiatives. One important key takeaway from the Project is the importance of linking livelihood interventions to sustainable fishing behaviors. There is initial evidence that economic incentives can play a role in advancing behavior change outcomes to strengthen biodiversity conservation if coupled with barrier removal strategies and campaigns.

Introduction

The unpredictability of income from fishing and high dependency of small-scale fishers on fishing as livelihood make the fishing households vulnerable to economic shocks and crises. The declining fish population combined with the increasing human population dependent on fishery sector have aggravated such vulnerability. Fishing households are further stressed by factors within fisheries systems, as well as to ecological and social impacts outside their influence such as climate change, chronic pollution, resource degradation, fluctuating prices of commodities, conflicts over resource use that increase vulnerability and changes in management strategies that can asymmetrically affect different communities (Pomeroy, 2013). Likewise, the poor educational attainment and limited skills of fishers as purported by many of the previous studies provided limited opportunities for them to engage in other occupation.

There were various approaches and programs designed to address the vulnerability of the small-scale fishing households and one of these is through building resilience. Resilience in an ecological definition is “a measure of the ability of these systems to absorb change of state variables, driving variables and parameters and still persist” (Holling, 1973).

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For a fishing household, resilience means “the ability of a household to absorb external change and stress, while maintaining the sustainability of their livelihoods” . Buckle (Adger et. al, 2002) defines resilience as the “capacity to withstand loss”. The concept of resilience has been linked to social-ecological systems (Adger et. al. 2002, Adger, 2000, Folke, 2006) and for people, resilience can be positive and desirable. In the context of social-ecological perspective, resiliencies defined as “...the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks ...”(Walker et.al, 2004). A resilient fishing household should be able to evolve in response to changing stresses while maintaining its functionality even as capital (natural, financial, human, physical, social and institutional) are restrained.

While there are several means and strategies explored toward optimal and sustainable utilization of fishery resource, strong community leadership is found to be the most important requirement for successful fisheries management. “Respected individual leaders are essential in promoting compliance with regulations among the fishing community, bridging changes in governance and resolving conflicts over quotas. Community leaders should be supported, and social networks should be developed in fishing communities in order to build sustainable and successful fisheries” (Gutierrez, 2011). Hence, enabling competent and effective leaders and strengthening partnerships of coastal communities are two important ingredients for effective fisheries management which need to be focused.

Women’s roles and participation in the fisheries sector are gaining new heights in recent years as fishery policies and program implementations have included or mainstreamed gender sensitive issues and concerns. Now, there are already existing policies and guidelines crafted both at international and national level to ensure more gender inclusive fishery programs in stark contrast to the previous years. There is much recognition nowadays on the capacity and overall equality of women in contributing towards fishery sustainability. However, a collective action on finding leadership roles for women in fisheries sector in fishery sustainability and in new key concepts such as building household resiliency is hardly afforded. Hence, this paper presents strategies and opportunities for women to take leadership roles in building household resiliency and in achieving sustainable fisheries based on the experience of Rare Philippines, an international conservation non-government organization.

Discussion

This paper shares the process and methods of enabling women to be leaders in building fishing household resiliency and sustainable fishery utilized during the implementation of “Harnessing markets to secure nearshore fishers” Project by Rare Philippines in partnership with selected local government units.

Building economic resilience strategy

Rare Philippine's economic resilience strategy as part of the Fish Forever program is anchored on addressing the multi-faceted issues of overfishing (Box & Jenks, 2018). The theory of change behind efforts of Rare Philippines Fish Forever economic resiliency strategy rests on the premise that improvements in household resilience will lead to reduction of threats to marine biodiversity, greater

social protection and increased income potential. Improving household resiliency will give fishers incentive to take part in fishery conservation efforts. The economic resilience strategy focused on building financial and social assets to complement the broader Fish Forever aim of conserving the natural capital – fisheries resources and the habitats that support them. Financial assets deal with the cash flow of the household while social assets refer to social networks of the fishing household. The aforementioned strategy gives emphasis on building household assets through provision of supplemental livelihoods to the fisher households by developing local businesses associated with existing fish supply chains or establishing market opportunities for existing fished species. In the process of testing different market oriented fish businesses “conservation enterprises”, the strategy also aims to develop turnkey solutions that will support scaling-up of the successful initiatives in other communities.

Harnessing markets to secure near shore fishers

The implementation of the “Harnessing Markets to Secure Future of Near Shore Fishers” project offered a new perspective in understanding how women were capacitated to be leaders in building household economic resilience and sustainable fisheries. This paper presents one dimension of the implementation of the “Harnessing Markets to Secure Future of Near Shore Fishers Project” funded by the Bloomberg Philanthropies and United States Agency for International Development (USAID) through its Global Development Alliance initiative. The Project which was implemented in 2015-2018 and carried out in seven coastal municipalities of four provinces in the country namely, municipalities of Ayungon and Bindoy in province of Negros Oriental, municipalities of Cantilan and Cortes in province of Surigao del Sur, municipalities of Looc and Lubang in province of Occidental Mindoro and municipality of Tinambac in province of Bicol, has provided Rare Philippine the opportunity to test economic resilience strategy.

The Project had the overall goal to identify and pilot approaches that improve social and economic returns of near shore fisheries in a way that supports and creates greater incentives for conserving marine biodiversity and sustainable management of fisheries, while both maintaining (and ultimately enhancing) the livelihoods of fishers and those directly and indirectly dependent on their income. Likewise, the Project became a venue to empower women in fisheries sector by enabling in them the necessary skills to lead the fisher households toward building household economic resiliency. The project addressed this goal through several activities:

1. Understand the nature, scope and landscape of livelihoods in the Philippines that are directly and indirectly dependent upon near shore fisheries.
2. Determine and test basic methods of stabilizing and/or increasing local fishers’ income through cost efficiencies and/or quality improvements that allow fishers to retain more value.
3. Explore and test the viability of fishery enterprises tied to managed access+reserve management, which can supplement income during reduced effort and build business capacity in preparation for fishery recovery.
4. Explore and test viability of market ‘pull’ strategies that can yield more revenue for fishers by linking sustainably managed fisheries to the appropriate domestic and export markets.
5. Build local capacity to successfully implement/participate in fishery improvements, enterprises or market interventions.
6. Exploring initial pathways to scale for all the above objectives by identifying, strengthening and facilitating structures, enabling policies and partnerships through which private capital and/or

government may drive uptake of potentially successful models, and by which community fishery management capacity can be augmented efficiently.

The Project was implemented in three overlapping phases to identify, implement and pilot scale approaches that improve the profitability and sustainability of fisheries while looking for opportunities to enable women to take the lead in building household economic resiliency and fisheries resource sustainability. Phase 1 of the project mainly consolidated several research studies as input to succeeding phases or to other next steps and interventions promulgated. A landscape overview of livelihood projects in coastal communities over the last 30 years and an in-depth analysis of selected livelihood projects implemented were done to draw lessons and avoid replication of faulty ideas from the previous livelihood implementations. A value chain study involving a total of 21 fish species across sites was conducted to identify market opportunities as well as identify areas for improved practices within the supply chain. A data-poor stock assessment was conducted which yielded information on stock status for each target species and recommendations for appropriate fisheries management for the target species [19]. The conduct of data-poor stock assessment was made to ensure that while efforts are made on finding new markets for responsibly-sourced seafood from selected coastal communities this will not lead to increased fishing pressure on the already “vulnerable” species. The data-poor stock assessments found that the stocks of several of the target species could not take increased fishing pressure to meet an increased market demand and that many of the target species were being caught as juveniles. A stock assessment was conducted to ensure that target species could support increased catch and market demand. The Participatory Coastal Resource Assessment (PCFRA) has provided the baseline information on fishing and fishing practices in the community and how they affect social, economic, and ecological related decisions.

The core activities of the Project were carried out in Phase 2 of the project which included the creation of the savings club, improvement of fisheries practices, creation of conservation enterprise, and development and testing of market pull strategies. Phase 3 of the project was dedicated to replicate and scale up interventions and innovations introduced in Phase 2 which delivered positive results.

Mobilizing savings for fishing households

The creation of the savings club was the genesis of building fishing household resilience through the village savings club approach (VSLA) as a turn-key solution. VSLAs have been successfully employed in Africa, as well as in some fishing communities in the Philippines and have been used to build household financial assets. Women were oriented and some of them were trained for leadership roles to manage the savings club. As of March 2018, a total of Php14.5 million savings from the savings club were mobilized and 76% of 2,230 savings club members are females.

Almost all female savings club members were mothers who are usually managers of household budget. Within the fishing household, it is the male household head who usually contributes a greater amount to household income while the female household head, the mothers, exert greater effort in rearing children and in managing financial resources.

The women were able to use savings to keep their children in school, purchase physical assets, and support existing or new supplemental livelihood activities. There were more than 70% of

savings club leaders who are women while approximately 80% of the officers of the savings club are composed of women. The decision-making capacities of women were developed by giving them leadership roles at savings club. Savings club leaders' decision is crucial for the survival of the savings group especially on the approval of loans and maintaining transparency of transactions all throughout. Management of the savings clubs showcased the leadership ability of women. Women were able to build stronger social networks to support livelihood initiatives. The membership of women to savings club also enabled their active participation in fisheries related projects.

Improving fisheries practices

Fisheries practices improvement was one area during project implementation where attention was given based on study conducted, field observations and conversations from local communities. Fish handling improvements along the fish supply chain can minimize post-harvest losses and waste and make fish safe for consumption, hence maximizing returns. While the number of men who go out fishing is relatively higher than women, the latter were found to be more engaged in processing and marketing activities. The involvement of women in those activities were leveraged in advancing their contribution in making household resilient and fisheries sustainability. Through the social marketing campaign called C3 or "Cool, Clean, Care," which was based on an existing training program by the same name by the Bureau of Fisheries and Aquatic Resources (BFAR), women were provided training and equipment to help them improve post-harvest practices through icing, using clean water and equipment. The C3 campaign also aimed to increase the demand from consumers for responsibly and properly-handled fish. Good manufacturing practices particularly fish handling was taught to women who are involved in processing and marketing of fisheries product to improve quality and reduce damage. This effort had positively resulted to greater demand of fish product from the market and reduction of losses due to faster spoilage of fish product. Also, a higher value of fish product was obtained from the niche market while food safety was instilled among local communities underlining the importance of proper hygiene and sanitation in fish processing.

Establishment of conservation enterprise from savings group

Members of the savings club were mobilized to form a Conservation Enterprise Groups (CEGs) which function as business enterprise while at the same time advocating for fisheries sustainability. A CEG is a collection of savings club members organized to engage in business enterprise while committing to specific fishery conservation efforts. This means that while women are capacitated to operate the business enterprise, primarily involving seafood-based products, the foundational principles of fishery management and habitat conservation connect to the business ethos in how to run such an enterprise. The organized group, of which approximately 90% are women, is strengthened to observe the set of practical rules for biodiversity conservation in the local area. CEG members were oriented on the sustainable fishing practices through educating them with the supportive behaviors toward fisheries sustainability namely, fisher's registration, fishing using the right gear catching the right species and fishing in the right place, participating in meeting and reporting of catch. With the right information provided to the women, they were able to leverage the CEG in promoting sustainable fisheries practices. For instance, this was manifested by CEG from Looc wherein they only accepted the right size of rabbitfish from the fisher for their processing activity.

The limited buy-in from the participants especially in asking them to provide capital to run the business remains a challenge as revealed by livelihood landscape studies. However, there is no single peso

given to the CEG for their start-up capital, to test the willingness on the part of local communities to provide equity on the business (primarily fish drying). The capital mobilized by the savings clubs form the foundation for all the CEGs to start their own business. This was a key component of the Project's economic resilience strategy. In total, there are six conservation enterprise groups created with more than 120 fisher household members and almost 90% of these CEGs are led by women.

Linking to markets

In support of the business enterprise of CEGs, Rare Philippines connected them to premium market through a local social enterprise, the Fishers and Changemakers Inc. (FCI). The improved fish handling allowed for increased demand for and higher value of the fish products since they passed a higher standard for more discerning consumers. Rare Philippines has supported FCI in developing the product label for the fish products of CEGs not only driven by increasing market demand but position the fish products as responsibly-sourced seafood in the niche market. The back label of the packaging explains to buyers the importance of their patronage of responsibly sourced seafood and its contribution to achieving sustainable fisheries. All these efforts had resulted to a total sale of Php500,000 responsibly sourced seafood product for just over a period of nine months. Members of CEGs, especially women had built confidence in dealing markets. The new market linkage had opened new opportunities for women to increase their income and supply responsibly-sourced fish product in the market. The partnership with FCI allowed the project to test less exploited species to be processed like the flying fish.

The major challenge in linking women to markets was the seasonality of fish species at sites, unavailability of certain species due to over exploitation and generally overfishing of municipal fishing grounds. The improvement in fish handling and packaging lead to the increased demand from the niche market. However, the seasonality of fish available for processing created a shortage of fish product delivered to market partner; thus CEGs had difficulty in accessing markets. Creating a mechanism to reduce transaction costs due to geographical location of buyer posed a challenge but the available communication technologies were exploited to provide solutions.

Building capacities

Capacity building particularly on organizational management, bookkeeping and leadership training were extended to members of CEGs to prepare them to operate independently and sustainably when the project will be terminated. There were cross-visits to successful cooperatives and similar organizations operating on the same scale to facilitate learning of lessons and exchange experiences deemed necessary for the success of CEGs. Coaching and mentoring on business operation were also afforded to the officers of the CEGs. Rare Philippines also provided training to members of CEGs on processing of abundant fish species in the locality with high potential for market demand which open new market opportunities. For instance, the officers of savings groups, mostly women, were trained of the proper protocols and procedures and coached them for addressing problems that would arise due to savings club operation. Availability of Rare Philippines staff to provide clarification and guidance on- and off-site was ensured to all members of savings club and CEGs.

Capacitating women was initiated through linking them to identified institutions providing services relevant to their business operations and livelihoods other than assistance provided by the project. Women were informed on the kind of services provided by specific agencies and how they can

access it. There were also workshops and trainings provided to savings club members and CEGs in partnership with the academe, Bureau of Fisheries and Aquatic Resources, Municipal and Provincial Agriculture Office, Social Security System and Department of Science and Technology. Consequently, the CEGs from municipalities of Looc and Lubang were able to avail financial support for their fish dryer facility from DTI provincial office in Occidental Mindoro in 2018.

Many capacity building activities were identified and made accessible by CEGs from government agencies, academe, and other institutions but these were highly focused on and limited to inputs in aid of improving fish products and organizational capacity building. Support to integration of fish product in the market was limited to invitation to participate in product display or event which only lasted in a short period of days.

Conclusion

Linking household livelihood intervention to sustainable fishing behavior is highly important. Understanding the structure of the fishing household in terms of gender roles in decision points relative to budgeting and defraying household income has implications to designing strategies enabling them to become resilient. Mobilizing women particularly the mothers to participate in the savings group means equipping them with a strategy to take the lead on building resiliency given their significant role in dispensing household income. Through the savings club, the planning horizon of women was expanded from a day-to-day survival to longer term financial planning by savings for the future.

The greater participation of women in processing and marketing in fisheries sector provides more opportunities where their leadership roles in building fishing household resiliency and fisheries resource sustainability can be explored. Roles of women in these two key activities can be leveraged to exploit more economic opportunities and compliance to sustainable fisheries behaviors, such as being registered; fishing in the right place at the right time with the right gear and catching the right fish; participating in meetings; and reporting catch. This is exhibited by the Conservation Enterprise approach which facilitates a mutually beneficial relationship between biodiversity conservation and livelihoods. On the other hand, programs and projects designed to improve fisheries practices particularly in the realms of processing and marketing must include women given their extensive participation on the said activities.

The collective action on linking women to markets helped them access new market opportunities and created for them the venue to lead the local communities in promoting fisheries sustainability through integrating responsibly sourced seafood therein. The identification of potential sources to support the operation of CEGs and livelihood enterprise is necessary. However, most of these support, focused on improving the supply function of the business or livelihood operation while few embark on providing support to women on the thread of market integration.

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Value adding to Tilapia (*Oreochromis niloticus*): Development and Quality Assessment of Tilapia-malunggay Patty

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ABSTRACT

One of the concerns of women is malnutrition among children and to address this is the development of products like *tilapia-malunggay* patty. It is also a tool to augment income. Women fisher-folks can invest in *tilapia-malunggay* patty production. The processing is easy, materials are cheap and available year-round. Three formulations of *tilapia-malunggay* patty vary in percentages of *malunggay* (*Moringa oleifera*) powder. Five percent (5%), ten percent (10%) and fifteen percent (15%) of the weight of tilapia were subjected to rank test for preference and acceptability test to determine the most preferred patty. *Tilapia-malunggay* patty with 5% *malunggay* ranked first. The acceptability rating of this patty which was *like moderately* differed significantly. The *tilapia-malunggay* patty with 5% *malunggay* had 67.88% moisture, 13.02% protein, 2.44% ash, 2.62% fat, 0.12% crude fiber and 13.92% carbohydrates. *Malunggay* increased the iron content from 3.2mg to 5.6mg per 100g and significantly increased calcium content from 400mg to 1200mg per 100g patty. The brownish green *tilapia-malunggay* patty, with slight *malunggay* odor, moderate to strong *malunggay* flavor, tender to firm and slightly juicy has market potential. Out of 90 respondents, 76% rated the product *like very much* and 21% *like moderately*.

INTRODUCTION

Tilapia (*Oreochromis niloticus*), a native freshwater fish in Africa introduced in the Asian countries, is not as popular as fish species like milkfish, tuna, salmon, and sardines, but gradually it has gained acceptance among consumers in the Philippines. To further enhance its acceptability among various age groups and increase its consumption, processing this fish into popular products addressing demands of consumers had been explored.

Burger patty is one of the popular products highly acceptable to a wide range of consumers, from preschoolers to adults. Meat such as beef, pork and poultry are the usual raw material for burger patty. Fish meat as potential material was investigated. Tilapia processed into patty was shown to have high acceptance among consumers (Parrar,2012). The patty was high in protein, but low in minerals and carbohydrate content. *Malunggay*, *Moringa oleifera*, which can be found in the different regions of the country was considered as source of additional nutrients for the patty. It is easy to cultivate, available year-round and is a cheap source of vitamins, minerals and fiber. *Malunggay* is one of the most useful plants. The leaves contain an appreciable amount of nutrients and can be included in diets to supplement our daily nutrient needs (Oduro et al. 2008). *Malunggay* leaves are high in vitamin C, vitamins A (β -carotene) and B and mineral such as calcium and iron (FNRI, 1997). *Malunggay*-enriched burger patties can contribute to the prevention of nutrient deficiency and alleviate malnutrition, particularly among children. It can be a regular dish that can meet the nutrient requirements of children and adults. Hence, this study was conducted to add value to tilapia by processing it into burger patties with improved nutrient content which are more acceptable to consumers.

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This product can benefit tilapia producers, food processors and consumers. There will be increase demand of tilapia. Additional variant of tilapia dish will be available. Family or individual's income will be augmented. Women fisher-folks can invest in *tilapia-malunggay* patty production.

METHODOLOGY

Fresh tilapia (*Oreochromis niloticus*) weighing approximately 360 grams, with TVB-N value of 0.810mg N/100g sample, pH 6.32 and green *malunggay* (*Moringa oleifera*) leaves were the main ingredients utilized. Flour, chicken egg, onion, garlic, salt, pepper and oyster sauce were the other ingredients.

The study was divided into three phases. Phase 1, the determination of the most preferred *tilapia-malunggay* patty formulation (MPF); Phase 2, the characterization of the *tilapia-malunggay* patty prepared from the MPF; and Phase 3, consumer- testing.

Phase 1. Determination of the Most Preferred *Tilapia-Malunggay* Patty Formulation (MPF).

Preparation of tilapia meat and *malunggay* powder. Fish were thoroughly washed, cut and muscle was carefully scraped and separated from the other parts of the fish then ground using a blender. *Malunggay* leaves were washed, leaves separated from the stem, and dried in a cabinet dryer (65 °C-70 °C) or 1 – 2 hours to a moisture content of 6.69% - 8.85%. Leaves were pounded into powder form using a mortar and pestle and sieved.

Processing of *Tilapia-Malunggay* Patty with Different Formulations. Three formulations of *tilapia-malunggay* patty (Table 1) were prepared. The formulations F1, F2, and F3 with 5%, 10% and 15% *malunggay*, respectively, varied only in the amount of powdered *malunggay* leaves to a fixed weight of tilapia. *Malunggay* powder and other ingredients were thoroughly mixed and cut into desired shape using an improvised molder. The patties with approximate weight of 30 grams/piece were steamed for 13 minutes, packed, frozen overnight and fried for 5 minutes in medium flame before serving.

Sensory Evaluation to Determine the Most Preferred *Tilapia-Malunggay* Patty Formulation (MPF). The *tilapia-malunggay* patties from the three formulations, F1, F2 and F3 were subjected to ranking test for preference to determine the MPF. Kramer's Rank Sum Test ($\alpha = 0.05$) was used to analyze the data (Gatchalian, 2009). To determine the degree to which respondents like or dislike the product, *tilapia-malunggay* patties were further subjected to a general acceptability test (7-point hedonic scale). Data was subjected to Kruskal-Wallis Test ($\alpha = 0.05$).

Phase 2. Analysis of *Tilapia-Malunggay* Patty from the Most Preferred Formulation (MPF)

The *tilapia-malunggay* patty from the MPF was subjected to proximate analysis, pH, and iron and calcium content determination. Descriptive sensory evaluation was also conducted to determine sensory attributes of the patties.

Proximate analysis. Moisture content was determined by the oven-drying method using the Memmert oven at 105 °C; protein content by the Kjeldahl method using Kjeltech™ 2100; fat content based on Soxhlet method using Soxhlet™ 2045; ash content by dry ashing using the Kenton Muffle furnace at 550 °C; and fiber content by the crude fiber gravimetric method. Carbohydrate content was estimated through calculation by the difference method (Madamba, 1993).

Table 1. Formulations of *tilapia-malunggay* patties

	Formulations (F)		
	F1 (5%)	F2(10%)	F3(15%)
Tilapia (g)	410	410	410
Flour (g)	90	90	90
Onion (g)	15	15	15
Garlic (g)	10	10	10
Iodized salt (g)	8	8	8
Pepper (g)	3	3	3
Oyster sauce (g)	13	13	13
Chicken egg (g)	50	50	50
<i>Malunggay</i> powder (g)	20.5	41	61.5
Total weight	619.5	640	661.5

Note: Percentage of *malunggay* was based on the weight of tilapia meat.

The iron content was analyzed by spectrophotometric method (Straight, 2002) and calcium content by volumetric method (Madamba, 1993). pH was determined with the use of the Eutech Cyberscan pH meter.

The sensory characteristics (flavor, odor, color, texture and juiciness) of the *tilapia-malunggay* patty from the MPF were determined through a descriptive test.

Phase 3. Consumer Acceptability Test.

A 7-point hedonic scale score sheet was used to assess the degree to which consumers like or dislike the *tilapia-malunggay* patty from the MPF. The patties were presented as mini bun burger sandwiches with mayonnaise and ketchup to the consumers composed of elementary, to college students. Relative frequency was determined and presented in a pie-chart.

RESULTS AND DISCUSSION

Determination of the Most Preferred *Tilapia-Malunggay* Patty Formulation (MPF).

Table 2 shows the result of the ranking test for preference. Three independent trials revealed that the most preferred *tilapia-malunggay* patty formulation (MPF) was F1, with 5% *malunggay*. F1 which consistently ranked first (lowest rank total in all trials) was significantly different from F2 and F3, with 10% and 15% *malunggay*, respectively (Kramer's Rank Sum Test, $\alpha = 0.05$).

Table 2. Rank totals of the three formulations of *tilapia-malunggay* patties

Panelist	Trial 1			Trial 2			Trial 3		
	F1	F2	F3	F1	F2	F3	F1	F2	F3
1	1	2	3	1	2	3	1	2	3
2	1	2	3	1	2	3	1	2	3
3	1	2	3	3	2	1	1	2	3
4	3	1	2	1	3	2	1	2	3
5	1	2	3	1	2	3	2	2	2
6	1	2	3	1	3	2	3	2	1
7	1	2	3	1	3	2	1	3	2
8	1	3	2	1	2	3	1	2	3
9	1	2	3	1	2	3	2	3	1
10	1	2	3	1	3	2	1	3	2
11	1	2	3	1	2	3	2	1	3
12	2	1	3	1	2	3	1	3	2
13	1	2	3	2	1	3	1	3	2
14	1	2	3	2	1	3	1	2	3
15	1	2	3	2	3	1	1	2	3
Rank Total	18	29	43	20	33	37	20	34	36

Note: Rank 1 – most preferred; rank 3 – least preferred. Kramer’s Rank Sum range at 5%, level of significance: 23 – 37, for n=15. Rank totals that fall within range are not significantly different. F1 consistently had the lowest rank total, which falls outside the range, thus significantly different from the F2 and F3.

Result of the acceptability test was in consonance with the result of the ranking test for preference test. Acceptability rating of F1 which was *like moderately* was the highest among the three formulations in all trials. F3 had the lowest acceptability followed by F2 (Table 3). Acceptability ratings differed significantly in 2 out of the 3 trials (Kruskall-Wallis Test, $\alpha = 0.05$).

Increasing amount of *malunggay* lowered the ranks and acceptability ratings of the patties, suggesting that *malunggay* influenced sensory attributes, particularly the flavor. Increasing amount of *malunggay* led to stronger perception of the distinct *malunggay* flavor which was no longer desirable in fish patties. Based on the results of the ranking test for preference and acceptability test, F1 (with 410 g tilapia meat and 20.5 dried *malunggay* leaves) was the most preferred formulation

(MPF), thus used for the production of *tilapia-malunggay* patty which was subjected to various analysis.

Table 3. Acceptability of *tilapia-malunggay* patties from different formulations based on a 7-point hedonic scale

Formulation	Acceptability rating	Median
F1	Like moderately	6
F2	Like slightly	5
F3	Neither like nor dislike	4

Note: Values/Scores are median of 3 trials. In a 7-point hedonic scale: 7- like very much, 6 – like moderately, 5 – like slightly, 4 – neither like nor dislike, 3 – dislike slightly, 2 – dislike moderately, 1 – dislike very much; F1 consistently had the highest ratings in 3 trials

pH, Proximate Composition, Calcium and Iron Content of *Tilapia-malunggay* Patty from the MPF

The pH of *tilapia-malunggay* patty, 5.84, was lower than the pH of the tilapia patty without *malunggay* which was 6.60 (Parrar, 2012). The decrease in the pH was due to the added *malunggay* powder which had mean pH of 5.64.

Tilapia-malunggay patty was lower in protein (13.02%) and fat (2.62%) but higher in ash (2.44%) and carbohydrates (13.92%) compared to tilapia. Tilapia had 18.80% protein, 3.29% lipids, 1.17% ash and 0.41% carbohydrates (Mada et al., 2012). The presence of added ingredients, specifically *malunggay* powder contributed to the increase or decrease of the corresponding food components. Table 4 shows the proximate composition of the *tilapia-malunggay* patty.

Tilapia-malunggay patty had higher calcium and iron content than tilapia patties without *malunggay* (control) (Table 5). *Malunggay* being rich in calcium (FNRI, 1997) improved the mineral content of the patty. Increase of calcium from 400 mg/100g patty to 1200 mg/100g was significant however, increase of iron was not significant. The high calcium content of *malunggay* powder contributed to the high ash content of the patties.

Table 4 . pH and proximate composition of *tilapia-malunggay* patty

Ph	5.84
PROXIMATE COMPOSITION	
Components	% (wet basis)
Moisture content	67.88
Crude protein	13.02
Crude fat	2.62
Ash	2.44
Dietary fiber (Crude)	0.12
Carbohydrates	13.92

Table 5. Iron and calcium content of *tilapia-malunggay* patty and *tilapia* patty (control)

	Iron (mg/100g)	Calcium (mg/100g)
<i>Tilapia-malungggay</i> patty	5.6	1200*
<i>Tilapia</i> patty (control)	3.2	400*

Note: Values with asterisk(*) are significantly different at 5% level of significance

Sensory properties of *tilapia-malunggay* patty

Five percent (5%) *malunggay* powder imparted the characteristic odor, flavor and color of the *malunggay* to the *tilapia-malunggay* patty (Table 6). The patty had a brownish-green color, slight *malunggay* odor but moderate to strong *malunggay* flavor. Texture which was tender, firm to moderately tender was influenced by the flour and eggs which served as binders. Slight juiciness of the patty was due to moderately high moisture content of the product.

Table 6. Sensory attributes of *tilapia-malunggay* patty.

Sensory attribute	Description
Color	Brownish-green (4)
<i>Malunggay</i> odor	Slight (4)
<i>Malunggay</i> flavor	Moderate to strong (3.5)
Texture	Tender, firm to moderately tender (2.5)
Juiciness	Slightly juicy (3)

Note: Values in parenthesis are median scores of 10 panelists

Consumer acceptability of *tilapia-malunggay* patty

Most of the target consumers, elementary, high school and college students expressed high acceptance for the product (Figure 1). Overall (respondents combined), 76% and 21% rated the *tilapia-malunggay* patty *like very much* and *like moderately*, respectively. Only 1% – 2% gave lower ratings (*like slightly* to *neither like nor dislike*) as shown in Figure 2. This product is another variant among tilapia dishes to satisfy demands of consumers. The *tilapia-malunggay* patty has market potential. Fisher-folks, particularly women can initially venture into small scale production and selling of the products. Family or individual income can be augmented.

Figure 1. Frequency distribution of acceptability ratings of *tilapia-malunggay* patty among consumer groups, elementary, high school and college students.

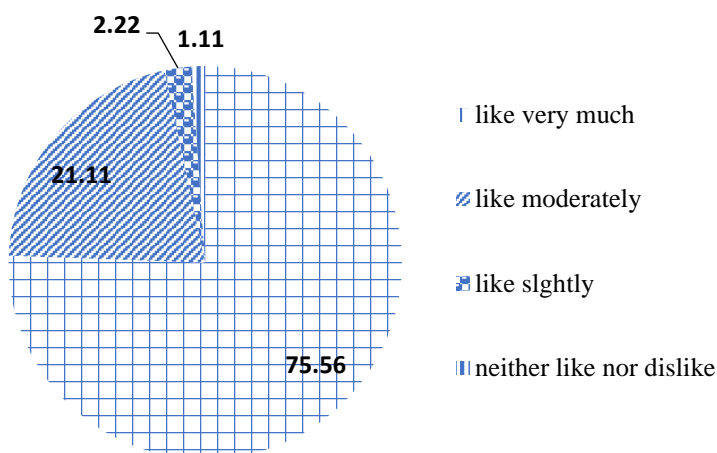
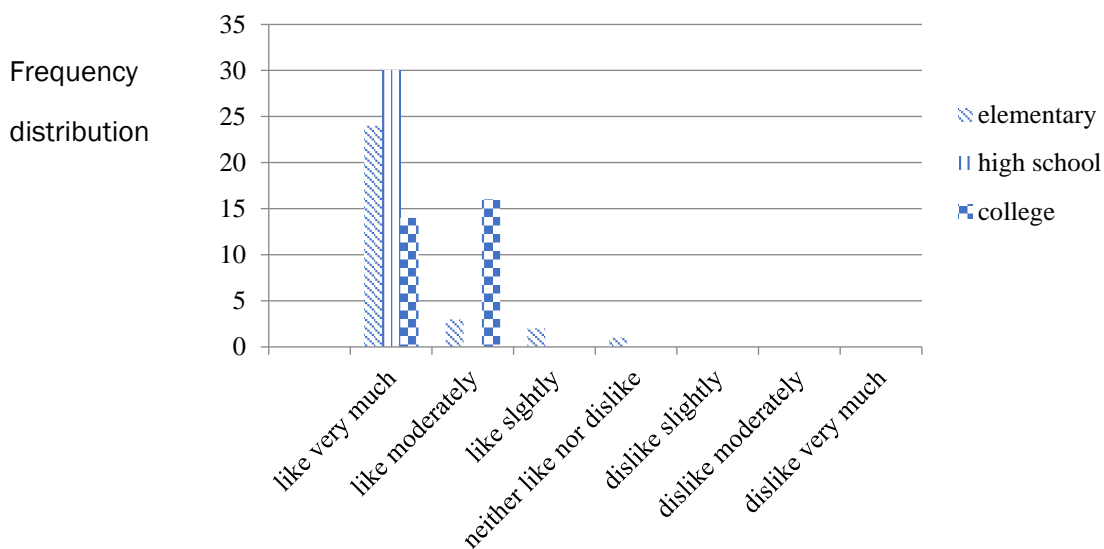


Figure 2. Relative frequency distribution of acceptability ratings among consumers (combined).

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The (In)visibility Of Gender-related Concerns in the Comprehensive Land Use Plan of a Coastal Town in the Province of Capiz, Philippines

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ABSTRACT

While gender mainstreaming has become a key principle for promoting equality across all fields of policy, actual implementation in the field of urban planning has yet to be fully implemented. Required plans created by Local Government Units, such as the Comprehensive Land Use Plan (CLUP) and the Comprehensive Development Plan (CDP), are expected to have mainstreamed gender concerns in the documents following the prescribed plan formulation processes. The case of a coastal town in Capiz Province, Philippines is used to demonstrate whether gender concerns have been mainstreamed in the formulation of the CLUP using secondary data analysis and interviews with members of the Planning Core Group and the Technical Working Group (TWG) for CLUP Formulation. The paper also aims to compare the prescribed and actual process of creating the CLUP. The 2001 CLUP prescribed process and the 2002 Gender Checklist for plans are used to assess the process of plan creation and the extent of mainstreaming gender concerns in the CLUP. Key results showed that not all in the prescribed steps were undertaken due to organizational and individual limitations. Moreover, gender concerns were not largely mainstreamed into the plan and projects attributed to insufficient experience of the TWG members, differing priorities of local officials, and no-sanction for limited use of the GAD budget.

Keywords: gender mainstreaming; Comprehensive Land Use Plan, coastal town, Capiz.

I. Rationale

The 1970s and 1980s have seen structural, social, economic and political transformation that significantly changed public policies at the local level (Pinedo, Hurtado, & de Madariaga, 2019). At that time, rational planning model was criticized for the institutional practices of providing uniform and standardized range of services. Planners working with this planning model had the assumption that people have homogeneous needs (Thompson, 2007). The plurality and diversity of the population was not within the purview of planners in the decades when rational planning approach was a popular model (Campbell & Fainstein, 1996).

The work by feminist scholars from the 1970s onwards contributed to the lack of policy attention given to women's needs (Pinedo et al., 2019). Since the 1990s, there have been growing theoretical and empirical interest to connect "planning, the city, and gender" (Fainstein & Servon, 2005, p. 9 in Pinedo et al. 2019). This has paved the way for the visibility of certain groups that had been neglected in past decades. Planners started to recognize that the advancement of gender concerns was entangled by sector-based approach to planning. Along with the work of feminist scholars and the commitment of women's organisations and practitioners, gender mainstreaming was established as a major global strategy for the promotion of gender equality at the Fourth United

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Nations World Conference on Women held in Beijing in 1995 (Mehra & Gupta, 2006). Along with the work of feminist scholars and the commitment of women's organisations and practitioners, gender mainstreaming was established as a major global strategy for the promotion of gender equality at the Fourth United Nations World Conference on Women held in Beijing in 1995 (Mehra & Gupta, 2006).

The commonly accepted and most widely used definition of gender mainstreaming is the one adopted by the United Nations' Economic and Social Council:

“Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality.” (UN ECOSOC, 1997 in Mehra and Gupta, 2006).”

Ever since gender mainstreaming was adopted by countries and institutions, it has yet to be fully implemented (Mehra & Gupta, 2006). While significant progress has been made towards girls' and women's equality in education, employment, and political representation since Millennium Development Goals (MDG Monitor, 2016). The Sustainable Development Goals (SDG) expanded the target to achieve gender equality from one target in 2000 to several targets to be achieved by 2030. Eliminating gender-based violence is a priority, given that this is one of the most prevalent human rights violations in many countries today (UN Women, 2015).

This paper describes the plan formulation process of a coastal town and analyses the extent to which gender concerns was mainstreamed into the Demography section and the Economic Sector plan (2000-2010). These are the sections where gender concerns are most relevant in terms of programs, projects, and activities (PPAs). The analysis is confined to the plan-making process and specific contents of the plan. The study does not include the implementation phase of the plan.

II. Relevant Literature

Interpretations and Applications of Gender Mainstreaming

Gender mainstreaming encompasses all aspects of planning, implementing and monitoring any social, political or economic action. Rao and Kelleher (2002 in Mehra & Gupta, 2006) suggest three dimensions in which changes are needed—in gender infrastructure, within organizations, and in institutions. **Gender infrastructure** involves putting in place gender policies, gender units, increased female staff and managers and additional resources for women's programs. **Organizational changes** pertain to improving the work-family balance and equalizing power relations within organizations. **Institutional changes** refer to inequitable ideologies, and cultural and religious practices as well as laws and policies that discriminate against women and other marginalised groups. Sustained institutional change happens when there is an ongoing change process to build and maintain the capacities of organizations to do intervention. Mehra & Gupta (2002) offer another view to achieve gender equality by focusing on the immediate concern of organization which is internal organizational procedures. These refer to changes needed within organizations to embrace the goals and values of gender mainstreaming and to alter systems and procedures to meet these goals. Changes may include staffing and personnel policies such as hiring more women or appointing a certain percentage

to leadership positions or more structural elements such as changing the “culture” of the organization through gender equality mandates to make the workplace more egalitarian (Mehra & Gupta, 2002).

In response to the call for gender mainstreaming, many country governments established national ministry, department or office that played multiple roles as policy coordinating units, knowledge and support providers and advocates and catalysts (Mehra & Gupta, 2006). Governments appointed gender specialists and focal points and launched training programs for all staff. Some countries also established accountability mechanisms to assess progress. Among development organizations, private donors and NGOs, their mainstreaming initiatives include setting-up gender units, hiring gender specialists, and conducting gender training. Some organizations made budget allocations and required gender analysis at various stages of development assistance as they work with civil society organizations, country governments, and other donors (Mehra & Gupta, 2006).

Improving the Environment through a Gender-Sensitive Planning

Urban planning is not gender neutral. All groups within society have different needs, aspirations, perceptions and priorities when it comes to physical and natural environment, housing, public facilities and mobility (Pinedo et al., 2019). These differences, however, are not normally considered by urban planners and the work of planners and policy makers has historically been implicitly taking a male point of reference. The insufficient attention to women’s needs within planning processes creates an area that has long walking distances to transport, shops, schools, health services, and workplaces, which significantly affects the way the population (particularly women) experience their surroundings. The literature has demonstrated that “women suffer particular disadvantage within a built environment designed with little attention to gender considerations” (Greed, 2006, p. 180 in Pinedo, et al., 2019).

The added value of gender mainstreaming in planning administration becomes evident at several levels (Urban Development Vienna, 2013). In every planning step, gender, age, and group specific interests are systematically examined in order to meet current demand for space and create flexible and adaptable spaces to satisfy varied needs at the same generate new potentials of space appropriation by users. Gender- sensitive planning also targets how resources are used to ensure that these are functional to people across life stages. Gender mainstreaming in planning also encourages the use of methodological innovations influenced by the systematic exchange of experience between different departments and disciplines and the target groups. These methods should be able to translate data into actual programs, projects, and activities that respond to gender concerns (Urban Development Vienna, 2013).

Application of Gender Mainstreaming in the Philippines

The Philippines created legal instrumentalities on gender mainstreaming as a strategy to achieve gender equality (DILG & BLGD, undated):

- the 1987 Constitution which provided the fundamental equality between men and women
- Republic Act No. 7160 (The Local Government Code of 1991 (LGC) and Republic Act No. 7192 (Women in Development and Nation Building Act) which were enacted as part of the Philippine Government’s commitments to the Beijing Platform for Action, the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) and the MGDs to pursue women’s empowerment and gender equality in the country.
- Executive Order No. 273 which approved and adopted the Philippine Plan for Gender-Responsive Development (PPGD-1995-2025). Related to this is mandating agencies and

local government units to institutionalize Gender and Development (GAD) by incorporating the GAD concerns spelled out in the PPGD in their planning, programming and budgeting processes.

- the Framework Plan for Women encourages all government instrumentalities to promote gender-responsive governance, protect and fulfill women's human rights, and promote women's economic empowerment.
- the General Appropriations Act tasked government entities to formulate a GAD Plan and to implement the same utilizing at least five percent (5%) of their total budget Appropriations.
- DILG-NEDA-DBM-DOF JMC No. 1 Series of 2007 which provides the procedures for mainstreaming gender perspective in local plans in accordance with the local planning process and corresponding time frame.
- The Magna Carta of Women (Republic Act No. 9710) in 2009 pushes government's action by adopting gender mainstreaming.

Manifestations and Practices of Gender Mainstreaming at the Local Level

In 2001, the Philippine Commission on Women (PCW) made the the Gender Mainstreaming Evaluation Framework (GMEF). This is a tool that measures the extent of the gender mainstreaming efforts of organizations, national government agencies (NGAs), and local government units (LGUs). GMEF has identified four entry points in gender mainstreaming in organizations. One is through policy which are statements of support on gender and development or enhancement/improvement of existing policies. These may be in the form of memoranda, executive orders, ordinances and other specific guidelines. Two is through people who are responsible for gender mainstreaming and assume four distinct roles: sponsor, change agent, target, and advocate. The *sponsor* has the power to sanction or legitimize change; the *Change agent* who is responsible for actually making the change; the *change target* who must actually change; and the *change advocate* who wants to achieve a change but lacks the power to sanction it. Three is enabling mechanisms which constitute the structures, systems, roles and functions of Focal Points, gender-responsive database, creation of manuals to gender mainstream in planning and policies to support decision-makers, networking efforts (developing networks and evolving partnerships) and resources (ex. allocation of the GAD budget). Fourth is the GAD Programs/Projects/Activities (PPAs). PPAs come in the form of information, education and communication (IEC) campaigns; client-directed PPAs; implementing international treaties, Philippine Plan for Gender Responsive Development (PPGD) and other laws and policies on women and GAD; application and other planning technologies; and personnel-directed PPAs.

In 2002 (NEDA-PCW-ODA), a manual entitled Mainstreaming Gender in Development Planning: Framework and Guidelines was created which aimed to guide development planners on ways of mainstreaming gender in two major phases of the development planning process. The first pertains to the identification of issues and challenges; goals, objectives and targets; policies, strategies, programs and projects; and implementation mechanisms. The second refers to the monitoring and evaluation of the implementation of policies, programs and projects. The six elements that need to be considered in making plans are as follows:

1. Participation of women and women's groups in the preparation of the plan.
2. Assessment of gender impact of past performance and challenges, through the analysis of sex-disaggregated data and gender-related information.
3. Inclusion in goals, objectives, and results (outcomes and outputs) of GAD statements intended to address key gender equality, women's development or empowerment issues.

4. Identification of policies and legislative agenda, and strategies, programs and projects that will help achieve gender equality, women’s development or empowerment goals, and address constraints to achieving these goals while pursuing the overall goal of the development plan.
5. Before finalization of the plan, assessment of the draft development plan to avoid negative gender-related impact and to minimize constraints to women’s participation in the benefits of development.
6. Inclusion in the results matrix of indicators, targets and sex-disaggregation of data to measure reduction of gender gaps, improvement of women’s participation, or enhanced women’s empowerment.

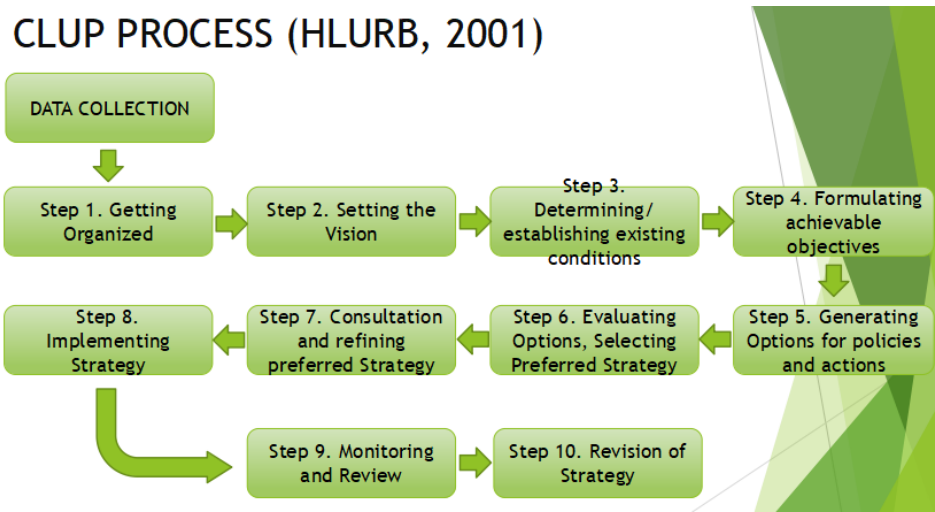
The GAD checklist on development planning has influenced the direction and content of the document Harmonized Gender and Development (HGDG) manual (2010). It provides the guidelines in the assessment of the extent to which the process and content and specific sectoral programs and projects are gender-sensitive.

Overview of the Comprehensive Land Use Plan (CLUP)

Land use planning is a "rational approach of allocating available land resources as equitably as possible among competing user groups and for different functions ..." (Section 3(k) of RA 7279 known as the "Urban Development and Housing Act of 1992). The output is called the comprehensive land use plan (CLUP) which is a document that embodies the specific proposals for guiding or regulating land and natural resources at the local level (HLURB, 2013). It is a long-term plan with a planning period of ten years. Further, the basic principles of the CLUP process are participatory, inclusivity, and consultative.

Content-wise, the CLUP has three volumes: the CLUP, the zoning ordinance, and the sectoral studies. The Housing and Land Use Regulatory Board (HLURB), under EO 648, is the agency mandated to promulgate zoning and other land use control standards and guidelines which shall govern land use plans and zoning ordinances of local governments.

The CLUP follows a ten-step process in plan formulation. It starts with organizing the Planning Core Group and the Technical Working Group and ends with step 10 which involve revision of strategy. The entire process takes at least 18 months to be completed (HLURB, 2001).



Gaps in Policy Commitments and Actual Implementation

During the decade of focus on internal organizational change, a new understanding began to emerge that a pre-requisite for mainstreaming gender is for organizations to first demonstrate their commitment to gender equality goals through significant internal organizational change (Mehra & Gupta, 2006). Literature, however, showed that policy commitments to gender mainstreaming “evaporated” or became “invisible” in planning, implementation, monitoring and evaluation processes.

There are several factors that contribute to the huge gap between the Beijing commitment and actual implementation (Mehra & Gupta, 2006, Moser & Moser, 2002; Pinedo et al., 2019):

- There is a widespread understanding that mainstreaming is everyone’s task which became nobody’s responsibility. The Dutch government, for example, in attempting to mainstream gender throughout the policy-making process resulted in the closure of all gender equality offices at the local level since no one took full responsibility of tasks.
- Staff lacked the commitment to assume gender mainstreaming responsibilities. Staff may have been reluctant to take on additional work or they may feel they lack the knowledge and skills for it. Also, they may have lacked motivation because they may not see a connection between incorporating gender considerations and their own work goals and plans.
- Staff are expected to be gender aware and responsive, conversant with gender issues and knowledgeable about them. Yet, the personnel do not have the knowledge and saw this as a personal obstacle in addressing gender issues.
- Gender focal points are supposed to act as resource persons, complementing and supplementing the work of gender specialists. In many cases, however, gender focal points often are not gender experts themselves, they are often young and inexperienced, and they lack clout and influence. They are assigned focal point duties in addition to their routine responsibilities. They experience difficulties in managing their competing time demands and responsibilities.
- The experience with training has generally been less than satisfactory after years of participating in trainings. Training participants claim they are unable to see the relevance of the training and that they do not acquire the skills they need to apply it to their own work. The dissatisfaction ends up being identified as a need for more and better training at all levels. It does not translate as a need for a completely different type of technical and hands-on sector-specific and project-specific training that builds capacity to integrate gender into specific types of operational work.
- Few cities have demonstrated a consistent commitment to gender mainstreaming at the policy design and implementation stages. A major barrier is the lack of tools to clearly highlight women’s needs in the face of decision-makers, practitioners, technicians and the local community. The planning of public services and urban space ignores the local level where they are used. A challenge of urban planning processes is taking into consideration women’s needs.
- Evaluation of plans and programs are focused exclusively on organizational mainstreaming processes and not on outcomes and impacts. The end goal of gender mainstreaming, however, is to demonstrate development impact and effectiveness.

III. Methodology and Study Site

The town of Pres. Roxas, Capiz is currently in the process of updating their Comprehensive Land Use Plan. They were able to make a CLUP for the planning period of 2000-2010. This is the reason that the scope of study pertains to documents and process involved within the plan’s time frame. Structured and semi-structured interviews were conducted with the Technical Working Group for CLUP formulation. Majority of the people who were interviewed in 2018 are also members of the TWG for CDP Formulation. The guide questions were about adherence to the 10 steps in the

prescribed 2001 CLUP formulation by HLURB. The questions also focused on activities that were undertaken (or not) on gender mainstreaming based on the six (6) elements on plan formulation. They responded to queries about the challenges of making the CLUP and in mainstreaming gender into the CLUP. Secondary data analyses were made of the CLUP (Demography), their sectoral plan on the Economy, and their zoning ordinances.

President Roxas is a fourth-class municipality with a total land area of 77.88 sq. km. or 7,788.00 hectares. Its total population of 28,459, with 14, 563 males and 13,896 females, was distributed in 22 *barangays* based on NSO's 2010 data (CLUP 2000-2010). It is considered as an agri-base community because of the vast tract of lands devoted to sugarcane production in support of the raw materials needed by the sugar mill in the municipality. Its major agricultural products are coconut, corn, *palay*, and root crops. In 1999, the town has 1, 025.6036 hectares of fishponds devoted to producing *bangus*, *tilapia*, crabs and shrimps as major products. *Tinagong Dagat* Bay is the major fishing ground of the municipality contributing to a total supply of fish caught estimated at 46.2MT/year using different kinds of fishing gears (CLUP 2000-2010).

IV. Results and Analysis

Profile of Participants

A total of eight (8) Technical Working Group (TWG) members were interviewed for the structured and semi-structured interviews conducted during the series of training workshops for Comprehensive Development Plan Formulation. Four out of five of the TWG interviewed in 2018 and 2019 were also involved in the creation of the CLUP. Around thirty seven percent (37.5%) of the respondents have worked in the LGU between less than a year to 5 years.

Of the 8 members, seventy-five percent (75%) were males and twenty five percent (25%) were females. The age range was from 21 -61 years old, fifty percent (50%) were married and fifty percent (50%) were unmarried. Fifty percent (50%) had bachelor's degrees while fifty percent (50%) had MA/MS units or doctorate degree. Eighty-eight percent (88%) have worked between 6 years and 40 years.

Majority (88%) are career service professionals.

The Process of Making the CLUP

Interviews with the TWG for CDP Formulation were the source of information for their experience in CLUP formulation. Their reported experiences were compared to HLURB's prescribed process.

Step 1. Getting organized

- Executive Order (EO) was created and approved by the Local Chief Executive
- . The Planning Core Group included the Municipal Planning and Development Coordinator (MPDC), the draftsman, and the encoder. The TWG consisted of the Department Heads, CSOs, President or representative of *Liga ng mga Barangay*, and Sectoral Committee representatives. They provided technical inputs during workshops and gave secondary data to the MPDO. It was reported that the MPDO was inadequately staffed so that the TWG members also formed part of the Planning Core Group.

- The MPDO is the office primarily concerned with the formulation of integrated economic, social, physical, and other development plans and policies (Sec. 476 (b)(1) and (5) of the LGC, 2001)
- Sectoral Committees are also created covering the five development sectors – Social, Economic, Environmental Management, Physical/ Infrastructure, and Institutional.

Step 2. Setting the Vision

- Visioning was done during 3-day Executive-Legislative Agenda (ELA) workshop. Ideally, a separate set of workshops should have been conducted.
- Department Heads and other sectors were present
- Stakeholders were identified thru registered Civil Society Organizations (CSOs) (academe, fishers, farmers)
- Not as exhaustive; limited grassroots consultation

Step 3. Determining/establishing existing conditions

- Prior to the workshop, the TWG gathered available data from various offices to be used as references
- Step 3 was conducted for a half-day during the ELA workshop
- The TWG did not conduct sufficient validation of reports from various offices.
- There was no survey on gender-specific concerns

Step 4. Formulating achievable objectives

- Goals and objectives were based on results in Steps 2 & 3
- Done during ELA workshop
- the MPDO personnel processed the data in Steps 3 and 4 for validation

Step 5. Generating options for policies and actions

- Stakeholders identified development areas and development directions based on Goals and Objectives in Step 4
- There was insufficient consultation with other stakeholders, intersectoral analysis, and data validation.

Step 6. Evaluating options, Selecting preferred strategy

- Steps 6 and 7 were reported to be highly technical. The development options and directions were largely made by the MPDO personnel based on goals and objectives.

Step 7. Consulting and refining preferred strategy

- Department heads were consulted but only those with concerns. Several sessions were held for deliberations due to several requests from stakeholders
- Participants: Sangguniang Bayan, Assessor,
- MPDO outputs: General Land Use and Urban Use maps. Maps were flashed per barangay
- A one-day public hearing was conducted. The activity was by invitation with the following participants: Landowners, Non-government Agencies (NGAs) concerned Department of Environment and Natural Resources (DENR), PLUC rep. SB, Chair on Land Use Committee

Step 8. Implementing Strategy

- TWG were not able to do STEP 10 because of Typhoon Yolanda.
- Currently updating the CLUP (2011-2020)

Step 9. Monitoring and Review - none

Step 10. Revision of Strategy - none

In general, there was insufficient conduct of public consultations and workshops to produce the ideal outputs. More importantly, the CLUP process was not completed because of Typhoon Yolanda happened in 2013 and the LGU was badly hit. Up to now the CLUP is still being updated. The old documents are still used as references for development and investment directions.

The Content of the CLUP

While data were sex-disaggregated in the demography section in Volume 1, the Economy sector had data base of workers in agriculture, fisheries, commerce, manufacturing, tertiary services and tourism that were not sex-disaggregated. Moreover, the economic sectoral planning matrices of the various sub-sectors did not reflect gender-specific concerns of the people in the subsector resulting in implications and policy/interventions that are gender-blind. The matrix for sub-sector planning in agriculture is presented below.

The Annual Investment Plans did not have explicit budget for gender-related projects; all were attributions. For example, environmental conservation and protection projects did not indicate women's participation, their roles and the potential impact these projects have to them. In the organization and deputization of community-based organizations in response to poor forest management, the budget allocation was made on the assumption that both men and women have roles to play in the project without considering that both can provide assistance on enforcement, albeit separate but still related with each other. Looking at the sectoral analysis matrices of other sub-sectors, gender concerns are invisible or missing. Given that the demographic data for each sub-sector is not sex-segregated, other information did not have gender dimensions, more so for the policies/intervention.

In reference to the GMEF tool (2001), the key informants admitted that at the time they made the CLUP, there was insufficient knowledge and skills to use the four entry points in gender mainstreaming in their LGU. While there were relevant national issuances, there was no conscious effort to use these as references in mainstreaming gender. There were also no local issuances that support gender mainstreaming. The planning team also reported that they were not aware of individuals or groups that had gender advocacies at that time. In addition, while there was a Focal Point, she had insufficient experience and knowledge to translate functions into making the plan. In addition, there was much to be desired with the data base which was largely not sex-segregated. With regards to linking with groups with gender advocacies, the LGU had limited reach or made very few efforts to network with such groups or individuals.

In terms of the GAD checklist for gender-responsive development planning (PCW-NEDA-ODA, 2002), there was very limited participation of women's groups in preparing the plan. The most obvious effort was inviting the rural improvement club composed mostly of women during the public consultation activity. Other elements indicated in the checklist were not applied in the plan-making processes and integrated in the contents of the CLUP and the AIPs.

Table 1. Sub-Sectoral Analysis Matrix for Agriculture

Technical Finding and Observations	Implications(effects)	Policy/Interventions
Limited area for rice production	Insufficient supply of rice	Optimize production of existing areas by promoting high-yielding rice varieties and providing incentives to rice farmers
Lack of efficient farmers' cooperatives	Price manipulation of middlemen	Strengthen marketing capability of farmers' cooperatives
High cost of inputs for agricultural production	Low farmers income	Government subsidy of farm inputs
Poor conditions of farm to market roads	High hauling costs	Improvement of farm to market roads
Use of agricultural chemicals for agricultural production	Health hazard, pollution and soil degradation	Promotion of IPM/organic farming and management
Lack of credit facilities for farmers and fishermen	High interest rates	Government financial institution to open socialized credit financing to farmers
Lack of agricultural trading center and storage facilities	<ul style="list-style-type: none"> ▪ Inefficient marketing and storage of farm products ▪ More losses due to spoilage 	Establish a trading center and storage for agricultural and marine products
Dilapidated slaughterhouse	<ul style="list-style-type: none"> ▪ Revenue loss ▪ Contaminated meat due to unsanitary butchering and handling 	<ul style="list-style-type: none"> ▪ Rehabilitate slaughterhouse ▪ Training of butchers and meat handlers/traders
Massive siltation of fishing grounds	<ul style="list-style-type: none"> ▪ Deteriorating fish catch ▪ High spoilage of marine products due to delay in transportation during low tides 	<ul style="list-style-type: none"> ▪ Implementation of a holistic environmental conservation and protection ▪ Formulation of water use plan and enforcement of an efficient fisheries ordinance
Poor forest management and enforcement of environmental laws	Unsustained initiatives on forest rehabilitation, protection and management	Organization and deputization of community-based organizations.

Source: Agriculture sub-sector. CLUP 2000-2010, Volume 3.

Factors for Invisible Gender Dimensions in the CLUP

In general, there is nothing on women in fisheries in relation to CLUP or coastal areas in relation to CLUP. The FGD participants and Key Informants attributed to three factors the invisibility of gender concerns in the CLUP, particularly in the demography section and economy sector. One is limited knowledge and skills of personnel (GAD focal point) to do gender analysis or broadly speaking, lack of efficient and effective gender infrastructure. While there was a focal point, she was designated to the position which means she had other functions to perform on top of her position as the point person. While she had attended series of training, there was limited opportunity to apply right away the learning. The trainings were also done sparsely with no direct link to earlier activities. These explains why she recommended additional trainings. The other members of the planning teams also had insufficient knowledge and skills to 'mainstream' gender into the plan. They even asked for the metrics where they can use as guide in making the plan. The sustainable institutional changes required for gender mainstreaming were insufficient (Mehra & Gupta, 2002). The reasons of having designated position, seemingly disjointed trainings, and seemingly low knowledge and skills by the planning team on gender mainstreaming have been likewise noted in existing literature (Mehra & Gupta, 2006; Mosder & Moser, 2002; Pinedo et al., 2019). Another factor was attributed to the Local Chief Executive (LCE) who had limited gender awareness and gender concerns were outside one's purview. There was no advocate within the LGU strong enough to influence the decision of the LCE (organizational change). A third factor mentioned by the participants is that while there is a memo on the utilization of the GAD budget, there has been no sanction by the Commission on Audit officer for towns that failed to comply with the guidelines (institutional change). They claimed to have not received memos reminding them of their compliance. Thus, the LGU did not do anything about using GAD budget as attributions for all PPAs which is not allowed to according to the GAD guidelines.

V. Conclusion and Policy Recommendations

Based on study results and analysis, the planning team of President Roxas was aware of the CLUP process but fell short of following the prescribed activities per step specifically in the composition of the team members. The planning team was also not aware of the guidelines on gender mainstreaming. Hence, the process of plan formulation and contents of the plan have limited gender dimensions. To address the gaps on gender mainstreaming in the process of plan formulation and CLUP documents, the following recommendation are presented. Through these recommendations, it is hoped that changes in gender concerns and processes will be demonstrated in the creation of fisheries and aquaculture plans, programs and projects.

On Plan Formulation

Use the GAD Checklist on Plan Formulation and the GMEF tool. Both tools should be used by the planning team to assess the extent to which gender dimensions were mainstreamed into the documents and processes. The tools can assist the LGU in identifying entry points that should be strengthened. The tools can also be used as a means to measure whether their policies are gender-responsive, the planning team members and staff, specifically the GAD Focal Points, are capacitated on gender mainstreaming and if the PPAs addresses differentiated gender needs.

Inclusion of individuals and groups who have projects for women and children and by women. These change agents should be part of the planning team right from the start of plan formulation so that differentiated concerns are already considered. The methods of data collection and analysis will also be influenced by their presence. Related to the inclusion of such groups is strengthening and sustaining the networks with them.

Conduct 'participatory' public consultations. The planning team should follow the guidelines and the principles in the conduct of public consultations to validate information, get feedback from a variety of sectors with differentiated needs and aspirations.

On Human Resource Management

Review human resource capacity and number. The Focal point system was designated to the position. The additional task contributes to the multiple tasks and even burden to the staff who performs many functions. The number of people trained on gender mainstreaming should also be looked into; there may be no second-liners when the main focal point retires or leaves the organization.

Conduct of regular and ladderized gender trainings and seminars. This continuous capacity development program will ensure that project personnel are equipped with adequate knowledge and understanding about gender dynamics and relations. Basic gender sensitizing orientations will provide them the capacity to look at specific areas and interventions using a gender lens. The capacity development design should also be modular and ladderized to show improvement or enhancement of knowledge and skills at different levels.

On Project Design and Formulation

Administer the Checklist on Plan Formulation (2002) or the Generic HGDG Checklist (2010). During the conceptualization phase the project can be examined using the HGDG tool. The HGDG Checklist keeps track of the gender dimensions in the design and formulation of the project.

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ABSTRACTS OF OTHER CONFERENCE PAPERS

(Whose authors have published their full papers in other print media)

Growth Performance and Sensory and Microbial Characteristics of Oyster *Crassostrea iridaliae* Raised Using Bamboo and Empty Oyster Shell

*Candelaria O. Arro, Diony G. Cahilig, Joselito Sitjar, Sebastian C. Caduco, Jr.**

ABSTRACT

The safety and acceptability of shellfish for human consumption is important concern in the province of Capiz the seafood capital of the Philippines .The study was conducted to determine the growth performance and sensory and microbial characteristics of oyster using bamboo and empty oyster shell as clutches at different lengths , 1.0, 1.5 and 2 meters . Treatments 1 to 3 consisted of empty oysters shells at three distances as follows: a) T1, 1.0 m; b) T2, 1.5 m; c) T3 2.0 m. Treatments 4 to 6 utilized bamboo as cultch at three distances as follows: a) T4,1.0 m; b) T5, 1.5 m; and c) T6, 2.0 m. The oysters were cultured for one year at Cadimahan River. Highest growth of oyster shell was observed in T2 followed by T3. No significant differences in the sensory characteristics were observe among the treatments.T3 had the lowest bacterial count followed by T1. The results suggest that empty oyster shells at 1.5 and 2 meters can be utilized as clutches for oyster culture.

*Capiz State University

The Silent Workers Characterizing Gender and Power Relations in the Seaweed Industry

*Jee Grace Suyo, Josephine Tsui, Maria Rovilla Luhan and Anicia Hurtado**

ABSTRACT

Women are invaluable workers in the seaweed industry as they are involved in almost all aspects of farming, processing, and trading. Similar to other livelihoods, the prevailing attitudes and values of the community on women and men define what are the acceptable and unacceptable gender behaviours and practices. This, in turn, has an impact on the relative position of the women and men in the industry.

This study analyses the relative position of the women and men in the seaweed industry using Social Network Analysis (SNA). The SNA is one of the relevant methods to use when trying to understand the structure and the positions of the actors in a network. The data used for this study was obtained from a series of Focus Group Discussions (FGDs) from sixty eight seaweed farmers (40 women and 28 men) in selected sites in Zamboanga City and Bohol, Philippines. The participants were asked of their activities in seaweed farming, processing, and trading as well as of their perceptions of the roles of the opposite gender. The women and men were also asked of the extent of their engagement with the other actors in the industry. The relative position of the actors was then mapped out using SNA. Results showed that both women and men have low access and engagement with the other players in the industry, being highly reliant on the small traders in marketing their produce. The women serve as recipients of welfare assistance while more men mentioned about receiving seaweed farming equipment from the government. The networks map produced through this study provides an evidence of power relations and information flow in the industry which are essential when aiming to increase research uptake and when setting the policy directions for improved relations of the actors in the industry.

*Southeast Asian Fisheries Development Center

Seaweed Farming in Western Visayas: Strengthening the Roles of Women

*Caridad N. Jimenez, Nieves A. Toledo, Soledad S. Garibay**

ABSTRACT

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-bonding 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.

*University of the Philippines Visayas

Developing the Entrepreneurial Skills of Small and Medium Women Entrepreneurs for Enhancing the Marketing of Fresh and Processed Fish, Seaweeds and Shrimps

*Dr. Dalisay DG Fernandez, Loureeda C. Darvin, Norida P. Samson)**

ABSTRACT

Aimed to enhance the skills of women entrepreneurs on the marketing of fresh and processed fish, seaweeds and shrimp, a three series Fisheries Women Entrepreneurs Forum was conducted covering Luzon, Visayas and Mindanao in August and October, 2016 and July, 2017.

Spearheaded by the National Network in Women in Fisheries in the Philippines, Inc. (WinFish), the activities were conducted in coordination with the Inland Aquatic Resources Research Division of the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (IARRD-PCAARRD) and the Bureau of Fisheries and Aquatic Resources (BFAR) Regional Offices 3, 7 and 13. BFAR Central Office through its Gender and Development (GAD) Budget, funded the project.

Major players (BFAR, DOST, DTI, and the private sector) were invited for paper presentations. The speakers dealt on the industry status, packaging and marketing, business in free trade areas, export trends, prospects and registration requirements, Hazard Analysis Critical Control Point Certification (HACCP) Procedure, and Small Enterprise Technology Upgrading Program. Exporters and processors also shared experiences on the success of production and market of the said products. Workshops regarding the areas of concern and S&T intervention needs for the development and improvement of the mentioned commodities followed.

Series of fora identified problems that affect the country's fishery products which include processing, marketing and export. To improve the business export industry of the fishery products, technical assistance on market information, R&D and technology; institutional assistance on registration and certification requirements, linkage to direct buyers, access to foreign market, and tariff-related information; and policy assistance in terms of agreements on market access, trade rules and regulations, and Intellectual Property rights and procurement, are recommended. Exporters were also matched with enterprises which ended with the signing of the Memorandum of Understanding (MOU) on market matching of the producer and the prospective buyer.

With the joint activities, SMEs are encouraged to collaborate and link with the key export players and government agencies to ensure the development of fresh and processed fish and fishery products, shrimp, and seaweeds industry.

*The Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development

Gender Differentials in Migration Decision: Adaptation Strategies in Post-Haiyan Fishing Villages

*Marieta Bañez Sumagaysay**

ABSTRACT

Supertyphoon Haiyan which left Eastern Visayas as the worst hit area in November 2013, was a sudden onset disaster. It left an insurmountable number of deaths and losses to properties. To the same disaster, men and women experienced it differently just as they were affected differently and had consequently different gender needs and gender issues that needed to be addressed towards recovery and building back better.

Migration was induced by this environmental phenomenon. Some decided to and actually did move as a family, others did as an individual. Some moved permanently, others came back. Some moved to long distances, others went to nearby places. The duration of the migration differed, too. Migration and movements took place at varying nature and extent vis-à-vis the sex of the migrant.

In a 2015 study funded by the UP Center for Integrative Development Studies, gender differentials in the Haiyan-induced migration were identified, to highlight that women are a marginalized group that is significantly affected at a disproportionate scale. Migration decision-makers were mostly the male family members, and this made mothers as the tied movers. Tied stayers, on the other hand, were generally the males. In all cases, the person who has the information, the resources, the social capital, and access to networks emerges as the decision maker. Research results further show that relatives living outside the Haiyan belt emerged as common migration decision-makers.

Environment-induced migration policies, therefore, must be gender-responsive in order to address welfare issues that pertain to men and women, boys and girls who are displaced and are either forced or voluntarily decide to move to safer grounds.

*University of the Philippines Visayas – Tacloban Campus

The Roles of Women in Sustaining Production of an Indigenous Food in a Traditional Riverine Community: The Case of Binabak in Pandan, Antique

Sashah B. Dioso*

ABSTRACT

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 generated from *binabak*; 2) presence of traditional channels of knowledge transfer; and 3) the continuing observance of indigenous beliefs and practices pertaining to the river in general and prawn in particular.

*University of the Philippines Visayas

Balay sa Pulo: The Experience of Women Partners in Working with an NGO in a Remote Island in Carles, Iloilo

*Charis Emmelynn Bautista, Rhodella A. Ibabao, Jazreen C. Cubing,
Raphael Antoine L. Avena**

ABSTRACT

The involvement of women in housing has been increasing in developing countries. Women activism in housing is related to challenging traditional constraints on women and reflecting on the changing structures and social norms of society. An aspect of this paper shows the roles that women in a community played in a housing project with ICODE NGO-Christian Aid. Data were gathered through interviews with staff of the NGOs, secondary analysis of project contract, site visits, and survey of 21 beneficiary households of the housing units. Key results showed that the women were actively involved in the quality control of the project, as well as hauling and full warehousing of construction materials. On the part of the NGOs, they were compliant to the SPHERE standards on shelter construction which include provision of temporary livelihood as quality inspectors. The second phase of the project included livelihood projects involving the culture and processing of seaweed, which aided both men and women of the fishing community. However, the NGOs' concept of risk management is limited to disaster risk reduction, and must be expanded to a formal risk management process in order to fully appreciate the benefits of risk management to aid the organization in completing the project within schedule, scope and specification. Nevertheless, the results confirm challenging traditional assumptions of women having secondary role or no role at all in housing projects.

*University of the Philippines Visayas

A Critical Review of the National Network on Women in Fisheries (WINFISH) in the Philippines Conference Papers from 2000 to 2016

Ma. Arve B. Bañez

ABSTRACT

The paper examines themes where women are *located* in the fishing communities. The locations of women refer to her roles, participation in fisheries, her physical body as site of state policy, and, her *representation* as recipient of development program interventions. I reviewed forty – six (46) papers in five Conferences from 2000 to 2016. The Conference Proceedings of the Fourth and Fifth Conferences were not available, which is a limitation for my review. The themes of the Conferences serve as reference point; and the WID and GAD frameworks applied were the focus of critical review and analysis. The papers employed various research methodologies ranging from case study i.e. comparative, single-case, ethnographic; and, survey e.g. profiling, impact assessment and evaluation. Reflexivity and feminist research methodologies endeavored to probe the *voices* of women articulated from the papers under review. The themes revealed from the papers define the diverse locations of women in fisheries. They provide nodes indicating some development policy directions for women in fisheries.

*University of the Philippines Visayas

Traditional Knowledge of Women Fishers Related to Fisheries Resource Management in Pandan, Antique, Philippine

Elmer L. Jover and Sashah Dioso

ABSTRACT

The municipality of Pandan, Antique constitutes 4.18% of the total area of the province where 15 of its 34 *barangays* are located along the coast. It has corals and artificial reefs and municipal policies exist to guide coastal and marine resources management. However, actual resource-users who hold on to the traditional knowledge, rather than newly introduced policies, are sometimes excluded from resource planning and management. This paper explores the traditional knowledge of women fishers on the aspects of preparation of fishing gears, restrictions on fishing areas and the use and consumption of certain fisheries resources. Based on FGD and key informant interviews, this paper presents how some women fishers play the role of vehicles of traditional knowledge in the community. Further, they also act as the *manogbulong* of other fishers deemed to have violated the restrictions set forth by traditional knowledge and incurred the anger of “sea spirits”. The paper aims to present the contribution of women fishers as traditional leaders and be recognized as medium of integrating sustainable traditional practices with modern strategies of fisheries resource management.

*University of the Philippines Visayas

Mainstreaming Gender in Fisheries Education: Some Reflections on the Philippine Experience

*Mary Barby P. Badayos-Jover**

ABSTRACT

In the past twenty years, a number of efforts have been made to integrate gender issues in fisheries in Asia-Pacific, including the proliferation of gender-focused organizing work, as well as gender research in a range of fisheries-related topics. All these have led to heightened gender awareness and sensitivity in the fisheries sector. However, despite these significant strides, we have yet to see gender concerns actually mainstreamed in fisheries education, especially in teaching and other curricular matters. The presentation will focus on policy advocacy and argue that academic institutions are strategically positioned to be able to actively engage in the discourse of making sustainable small-scale fisheries more gender-responsive. The Philippine experience is an important example since the country has put policies in place for mainstreaming gender in government institutions, including state-owned universities. Government directives have also already been issued to integrate gender concerns in the curriculum, including that of Fisheries. However, we still see mere compliance being done at best, in terms of reporting sex-disaggregated data by some higher educational institutions that offer Fisheries courses. An apparent lack of capacity among Fisheries faculty and researchers to mainstream gender in their work is still the norm and may be addressed by targeted seminar-workshops that will hone their gender lenses and improve teaching and research.

*University of the Philippines Visayas

OPEN FORUM

Questions for *Gender Roles on the Capture of Tuna and Processing of Flying Fish in Langogan, Puerto Princesa City, Palawan, Philippines* by Dagaraga et al.

- What policy changes that capture gender roles do you suggest to implement in the capture of tuna and processing of flying fish programs in your locality?
 - The goal of the study is that the role of women would be recognized. The results of the study may be used as a baseline information that we can forward to policy makers or involved institutions so that women's contributions would be documented, realized, given recognition.
- Did you work on finding the gender roles in the tuna capture and flying fish processing at the same span of time and at the same place?
 - Yes. The respondents of the study are tuna catchers and flying fish processors. The interview was conducted once. We used the survey method.
- The presentation mentioned the importance of organizing men and women in the communities into cooperatives and how these cooperatives could potentially help them in making their economic situations better. What tips can you give us to make the cooperatives sustainable?
 - In the results and recommendations, it is better to have the respondents organized in a cooperative because it is easier to ask for assistance from BFAR and local government units. They have more access to help from institutions if they are organized in a cooperative.

Questions for *Minding the Family Fish Farms: Tales of Three Women Managers* by Hernando et al.

- These are case studies of three women managers. Based on the literature, can you make a comparison with what you found and what are the characteristics of male managers for fish farms?
 - The focus of the study focuses on the women managers and not so much with the comparison with the men. The men are the subordinate in this case. They are the workers in the farm. The men in the household are typically absent in the actual management of farm. They give advice once in a while in planning only.

Questions for *Disaster Preparedness of Fisherfolk Communities in Panay Island* by Fatima Sustento

- How did you select your respondents and what instrument did you use?
 - There were a total of 157 respondents from the municipalities and cities and they were chosen randomly. And the Likert Scale was used.
- What do you recommend in the preparation of the needs at a barangay level? Since there is a big gap between the preparedness at the barangay level and provincial or city level.
 - I would recommend the DRRMO to extend their arms to the barangay level. The government policies for the barangay should be strictly implemented as well.

Questions for *Enabling Women to be Leaders of Change in Building Household Resilience and Sustainable Fisheries (RARE)* by Pedrajas et al.

- Does RARE provide financing, or did you put up the seed money for service? Are you also involving the LGUs and other government agencies in your project?
 - At the beginning of the project, we did not provide any capital. Instead, we organized those who are interested in doing business. In our part, we provided the equipment and conducted the capacity building. We linked them to various government agencies and financial sources like DTI and BFAR. We conducted several workshops with them, we infer from their testimonies and at the same time, we conducted surveys to evaluate the degree of resiliency of the respondents. These are just perceptions based on the testimonies at the end of the survey we conducted among our target beneficiaries.

Questions for *Value-Adding to Tilapia (*Oreochromis niloticus*): Development and Quality Assessment of Tilapia-malunggay Patty* by Teruel et al.

- Why did you only focus your selection to elementary, high school, and college students for the sensory evaluation? Why did you not include the adults who are buying your product?
 - The target consumers of the product are students. We have created this product to address malnutrition and at the same time, add value to the indigenous materials which are underutilized.
- Is there a change in the nutritional value of the *malunggay* since you used powder instead of fresh *malunggay*?
 - We did not use fresh *malunggay* because the taste was too bitter to when mixed with the minced tilapia. In terms of nutritional value, powdered *malunggay* doesn't have as much vitamins because the process of drying breaks it down. However, what is more important is the iron and calcium content of the *malunggay* which becomes more concentrated once we dry it.
- How did you dry the *malunggay* in your methods?
 - You may store it in a room for air drying but to facilitate, we use the cabinet drier so it's faster and easier. You can easily control the temperature with a cabinet drier as well. When we dry the *malunggay*, we have to remember to keep some of its moisture content.
- How long is the shelf life of the patty?
 - It will last long if you store it under a freezing temperature which is at least -18 degrees celsius. Once you store it at the regular refrigerator temperature, it might get ruined after a week.
- How does the production of this tilapia-*malunggay* patty benefit women?
 - The product can be a tool to augment the family income since they can sell and profit from the product. This is also a more nutritious option for children's snacks.

Questions for *Growth Performance and Sensory and Microbial Characteristics of Oyster *Crassostrea iridialie* Raised Using Bamboo and Empty Oyster Shell* by Arro et al.

- Which treatment performed better in terms of growth and sensory evaluation of your oysters? How often did you get samples?

- We got the microbiological analysis, this also includes the flavor, texture, and odor during the harvest. The oyster shell got the highest growth.
- Why is there a difference in the microbial count between the bamboo and the empty oyster shell when they are grown in the same environment? Although the trend is that the microbial count decreases as the length increases but the difference in the population has doubled.
 - The lengths of the clutches are one meter, 1.5 meters, and two meters. It was all in the same environment but they had different lengths so they had different levels of water.

Questions for *The Silent Workers: Characterizing Gender and Power Relations in the Seaweed Industry* by Suyo et al.

- From the title of the paper, it talks about gender and power relations. Do you have any data you can point to which looks at the relationship between men and women in terms of power relations based on the study?
 - The researcher used the NodeXL software to determine strengths of networks based on the frequency of qualified words/variables mentioned during in-depth interviews and focus group discussions.

Questions for *Seaweed Farming in Western Visayas: Strengthening the Roles of Women* by Jimenez et al.

- It is suggested to include on your paper details regarding the utilization of the children who are involved in seaweed farming. Much as the noble intention is there, you might be misconstrued on the issues of child labor.
 - The organization recognizes that and sets limits for the children. Their ages range from 15-16-year olds and if they want to work, they can only do so on weekends to ensure that they have time do their schoolwork. The organization was also already warned by PRDP to be cautious in hiring children.
- How can we use the data you have to provide policies and recommendations to the local government units in order that we can increase productions of seaweeds and to help the economic situation of the fisherfolks in the coastal community?
 - The mindset of the women and men should be changed first. It is easy to give policy recommendation based on the evidences, based on the studies. But making policies sustainable will become a problem if the people whom the policy is for do not value themselves. That is why we are suggesting values orientation for both men and women. Not values orientation for men, values orientation for women. They are working together; they are attending the same workshop that they may recognize their own worth. In our experience, we will not push for policy recommendation until such time we feel that the women have given value to all their work and worth.
- How do you define giving value to their work. What is the indicator that they are giving value?
 - Based on our preliminary study, more of the descriptive interviews, the women themselves feel that it is their obligation as the wife, they themselves they do give value because they are partner in the household, they do not recognize that they have big contributions in the household and even in the economic contribution. They feel that it is their duty. And that is what we want to change, duty versus your own worth. The male knows that they have value because they provide money, the women they provide money,

but they feel that it should not be. By orientation, giving value to women and men in that way they may recognize their worth and their economic contribution to the community.

Questions for *Developing the Entrepreneurial Skills of Small and Medium Women Entrepreneurs for Enhancing the Marketing of Fresh and Processed Fish, Seaweeds and Shrimps* by Fernandez et al.

- What are the indicators that the new enterprises have improved compared to the old ones?
 - There were problems on the registration, equipment, packaging, and labelling. A pre- and post- survey questionnaire was used to determine if there was an increase in the awareness and knowledge on the enterprise.
- How do women make use of their knowledge of the enterprises at a household level?
 - The researchers were not able to define specifically the effects at household level because they only focused on the existing small and medium enterprises. It's beyond the scope of the project.

Suggestions on *The Roles of Women in Sustaining Production of an Indigenous Food in a Traditional Riverine Community: The Case of Binabak in Pandan, Antique* by Sashah B. Dioso

- The researcher was advised to come up with good manufacturing services to improve the quality of the product because it's being exported internationally. The observance of SSP, the standard sanitation practices and the good manufacturing practices should be applied.

Questions on *A Critical Review of the National Network on Women in Fisheries in the Philippines, Inc. (WINFISH) in the Philippines Conference Papers from 2000 to 2016* by Arve Bañez

- With the data that you have from the studies presented in the previous years, what recommendations or actions do you think should be taken?
 - Initially, as a researcher, I thought that I shouldn't be making recommendations. Instead, I would just raise the points on what are the perceptions on how women were represented and how they were located in the fisheries sector.
- As researchers, how do you make sure that your writing does not project your own interpretation but that of the women's in narrating their conditions?
 - It is important to surface our subjectivities as researchers before we engage the narratives of women that's part of the data. In that way, we become more intellectually honest. I think that is a part of the research ethics that we need to uphold because on one hand, you are giving voices to women and their narratives. That's one important thing to be conscious about as researchers.

Questions for *Traditional Knowledge of Women Fishers Related to Fisheries Resource Management in Pandan, Antique, Philippines* by Elmer Jover and Sashah Dioso

- The researcher was advised that in developing the study, he could include in-depth input on how some indigenous knowledge are related to the concept of mariit.

- Maybe you can relate the people's belief in mariit in terms of the preservation of the environment.
 - People in our locality believe that we coexist with spirits in the environment. Thus it forms part of our ecological consciousness for us to really take care the dwelling place with the spirits. It contributes to taking care of the natural resources in this era of wanton disregard to the environment. The traditional belief system and practices of the traditional communities would be one of the factors that would help in natural resources sustainability.

- How do you harmonize superstitious belief with scientific knowledge?
 - There should be critical integration on the different beliefs of people. We should disregard the ones that are not empowering while integrate into policies the ones that are beneficial to people. In the community, people really believe in these things as part of their worldview and it helps in the sustainability of their natural resources.

Questions on *Mainstreaming Gender in Fisheries Education: Some Reflections on the Philippine Experience* by Mary Barby P. Badayos-Jover

- How does each university or institution acquire the GAD budget of 5% of the university's/institution's total budget?
 - The law mandates that there should be 5% of the total budget of the institution to be used for gender mainstreaming activities. There are many ways in which the institution goes about complying to that requirement. The Commission on Audit goes through this budget of every institution. All government institutions are required to submit an annual Gender and Development Plan that is supposed to embody where you are going to use your 5%. It's being audited because you're supposed to have a plan and COA comes in and checks if you really implemented the plan. The GAD budget is part of the requirements the institution submits to the Department of Budget and Management. So before the DBM approves the budget of the institution, it has to see that there is a gender and development plan.

PROFILE OF PARTICIPANTS

Attendance of the 9th National Conference on Gender and Fisheries

Institutions/Organizations	Male	Female	Total
BFAR 1	0	6	6
BFAR 3	2	0	2
BFAR 4A	0	1	1
BFAR 6	3	15	18
BFAR 7	0	2	2
BFAR 9	0	2	2
BFAR 10	0	4	4
BFAR 11	0	2	2
BFAR 12	0	2	2
BFAR CAR	1	6	7
BFAR Central Office	0	1	1
Capiz State University	0	2	2
De La Salle University Manila	0	1	1
DOST	0	2	2
Ilocos Sur Polytechnic State College	0	1	1
Iloilo City Population Office	1	2	3
Iloilo State College of Fisheries	0	2	2
LGU Guimaras	1	3	4
LGU Iloilo	0	2	2
Mindanao State University-General Santos Campus	0	3	3
Mindanao State University-Tawi-Tawi Campus	0	2	2
Northern Iloilo Polytechnic State College	0	1	1
Office of the Provincial Agriculturist- Iloilo	1	1	2
Office of the Provincial Agriculturist- Negros	1	1	2
P4MP Federation	0	1	1
PATH Foundation Philippines	1	0	1
Rare Philippines	1	0	1
University of Northern Philippines	0	2	2
University of the Philippines-Visayas	4	16	20
Western Philippines University	1	0	1
West Visayas State University-Lambunao Campus	1	2	3
WINFISH Board of Trustees	2	8	10
Total	20	94	114

Additional attendees during the conference were the Board of Directors of WINFISH and Working Committees.

PROGRAM

DAY 1: November 7, 2018

10:30-12:00	Registration of Participants Secretariat	WINFISH and BFAR
12:00-1:00	Lunch	
1:00-1:30	Opening Program <ul style="list-style-type: none">▪ Invocation▪ Pambansang Awit▪ Presentation of Participants▪ Presentation of WINFISH Presidents	
	Welcome Remarks	RD Remia A. Aparri Regional Director, BFAR R6 WINFISH President
	Message	Dr. Ricardo P. Babaran Chancellor, UP Visayas
	Introduction of Keynote Speaker	WINFISH
1:30-1:50	Keynote Messages	Hon. Alfredo Marañon Governor, Negros Occidental
		Sen. Cynthia Villar Chair, Senate Committee for Agriculture and Fisheries
1:50-2:00	Awarding of Certificate of Recognition	RD Remia A. Aparri WINFISH President
2:00-2:05	Intermission Number	
2:05-2:40	Plenary Speaker	Dr. Ma. Elena Chiong-Javier Social Development Research Center, De La Salle University-Manila
2:40-2:50	Open Forum	
2:50-3:00	Break	
3:00-3:15	Presenter 1: Gender Roles on the Capture of Tuna and Processing of Flying Fish in Langogan, Puerto Princesa City, Palawan, Philippines	
3:15-3:30	Presenter 2: The Silent Workers: Characterizing Gender and Power Relations in the Seaweed Industry	
3:30-3:45	Presenter 3: Seaweed Farming in Western Visayas: Strengthening the Roles of Women	

3:45-4:00	Presenter 4: Empowering Fisherfolks through Enterprise Development Project on Seaweed Production, Value-adding and Marketing	
4:00-4:15	Presenter 5: Minding the Family Fish Farms: Tales of Three Women Managers	
4:15-4:40	Open Forum	
4:40-4:45	Announcement	
4:45-6:30	WINFISH General Assembly	President's Report Treasurer's Report Election Proposed Amendments in the Bylaws
7:00	Dinner Fellowship Night	May's Organic Garden and Restaurant, Araneta Avenue, Pahanocoy, Bacolod City

Emcee/Moderator: Dr. Mary Barby P. Badayos-Jover

DAY 2: November 8, 2018

8:00-8:15	Registration Distribution of Evaluation Forms	WINFISH Secretariat
8:15-8:30	Synthesis of Day One Energizer	
8:30-8:50	Plenary Speaker	Mrs. Jocelyn Hekrdle Fisherfolk Leader Toboso, Negros Occidental
8:50-9:00	Open Forum	
9:00-9:15	Presenter 6: Developing the Entrepreneurial Skills of Small and Medium Women Entrepreneurs for Enhancing the Marketing of Fresh and Processed Fish, Seaweeds and Shrimps	
9:15-9:30	Presenter 7: Disaster Preparedness of Fisherfolk Communities in Panay Island	
9:30-9:45	Presenter 8: Gender Differentials in Migration Decision: Adaptation Strategies in Post-Haiyan Fishing Villages	
9:45-10:00	Open Forum	
10:00-10:15	Snacks	
10:15-10:30	Presenter 9: Enabling Women to be Leaders of Change in Building Household The National Network on Women in Fisheries in the Philippines, Inc.	

Resilience and Sustainable Fisheries

- 10:30-10:45 Presenter 10: The Roles of Women in Sustaining Production of an Indigenous Food in a Traditional Riverine Community: The Case of Binabak in Pandan, Antique
- 10:45-11:00 Presenter 11: Value adding to Tilapia (*Oreochromis niloticus*): Development and Quality Assessment of Tilapia-malunggay Patty
- 11:00-11:15 Open Forum
- 11:15-11:30 Presenter 12: Balay sa Pulo: The Experience of Women Partners in Working with an NGO in a Remote Island in Carles, Iloilo
- 11:30-11:45 Presenter 13: A Critical Review of the National Network on Women in Fisheries in The Philippines, Inc. (WINFISH) in the Philippines Conference Papers From 2000 to 2016
- 11:45-12:00 Open Forum
- 12:00-1:20 Lunch
- 1:20-1:25 Energizer
- 1:25-1:35 Presenter 14: Growth Performance and Sensory and Microbial Characteristics of Oyster (*Crassostrea iridaliae*) Raised Using Bamboo and Empty Oyster Shell
- 1:35-1:50 Presenter 15: The (in)Visibility of Gender-Related Concerns in the Comprehensive Land Use Plan of a Coastal Town in the Province of Capiz, Philip
- 1:50-2:05 Presenter 16: Traditional Knowledge of Women Fishers Related to Fisheries Resource Management in Pandan, Antique, Philippines
- 2:05-2:20 Presenter 17: Mainstreaming Gender in Fisheries Education: Some Reflections on the Philippine Experience
- 2:20-2:35 Open Forum
- 2:35-2:45 Closing Remarks and Announcements
- 2:45-3:00 Induction of Officers (2018-2020)
- 3:00-3:15 Handling in of Evaluation Forms
Distribution of Certificates
Snacks

Emcee/Moderator: Dr. Rosario H. Asong

BEST PAPER PRESENTERS

First Place: Joey Pedrajas, Rare Philippines

Received Php 3,000 cash prize and certificate

“Enabling Women to be Leaders of Change in Building Household Resilience and Sustainable Fisheries”

Second Place: Sasha Dioso, Center for West Visayan Studies, UP Visayas

Received Php 2,000 cash prize and certificate

“The Roles of Women in Sustaining Production of an Indigenous Food in a Tradition Riverine Community: The Case of Binabak in Pandan, Antique”

Third Place: Ma. Arve Bañez, Division of Professional Education, UP Visayas

Received Php 1,000 cash prize and certificate

“A Critical Review of the National Network on Women in Fisheries in the Philippines, Inc. (WINFISH) in the Philippines Conference Papers from 2000 to 2016”

ORAL PRESENTATION BOARD OF JUDGES

Dr. Ida Siason

Professor Emeritus, University of the Philippines Visayas

Dr. Marietta Sumagaysay

Professor, University of the Philippines Visayas – Tacloban Campus

Dr. Christine Hernando

Professor, College of Management, University of the Philippines Visayas

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Overall Chair: RD Remia Aparri

Members: Dr. Rowena Paz Gelvezon

Mr. Wilfredo Palete, Jr.

Dr. Rhodella Ibabao

Dr. Mary Barby P. Badayos-Jover

Dr. Rosario H. Asong

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Co-Chair: Ms. Jee Grace Suyo
Member: Prof. Duvince Zhalimar Dumpit
Dr. Rhodella Ibabao

DOCUMENTATION COMMITTEE

Chair: Cleobelle Joy Buñag (BFAR)
Co-Chair: Dr. Rhodella Ibabao
Member: Dr. Harold Monteclaro
Ms. Shirley Golez
Ms. Genna Serofia