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BOOK OF ABSTRACTS

COMPARATIVE PROFITABILITY OF WOMEN DOMINATED FISH-BASED LIVELIHOOD ACTIVITIES IN ONDO STATE, NIGERIA

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Women are more disadvantaged than men in securing formal sector employment opportunities and access to less resources and skill makes them preponderate in low-investment and low-income informal sector livelihood activities. Any attempt to improve women's economic power requires information on returns to investment in their traditional livelihood activities hence the need for this study which centres on comparing yield performance in artisanal fishing and fresh fish marketing. The study utilized primary data collected from 55 fishing folks and 80 fish sellers selected through multi-stage sampling method. Data collected were summarized using descriptive statistics and analysis was done using budgeting and regression models and Z-test.

Empirical findings revealed that about 75.0% of fisher folks either had no formal education or primary education while majority (50.0%) of marketers had up to secondary school education. About 74.0% of fisher folks and 66.0% of marketers considered venture as major livelihood source. Most (77.6%) of respondents took to these ventures to provide for their households or supplement spouse's income. The net revenue accrued to fish hunters per annum was ₦965, 248.00 while that of marketers was ₦ 373, 773.00. Returns to investment was 55.9% for fish capture and 43.8% for fish marketing. There were significant differences between profitability indicators at conventional significance levels. About 77.8% of income from fish capture and 69.2% from marketing went into supplementing household consumption expenditure.

OLS regression result showed that the significant factors which influenced returns from fish capture included experience, season, distance covered and type of fishing ground. Transportation, purchase cost, experience and household size were the significant factors influencing returns from fish marketing. The major challenges faced by fish hunters included increasing cost of canoes and short supply of gears while marketers face challenges of high transportation cost and losses from perished unsold fish. Both groups face lack of access to

formal credit. It is concluded that fish capture and fish marketing are profitable ventures and that earnings realized contribute to households' upkeep. Organizing women informal sector operators into groups to enable them access government support and bank credit are recommended for improving women's livelihood.

GENDERED CONCERNS IN COASTAL DISASTERS: AN ANALYSIS OF WOMEN'S POLITICAL SUBORDINATION AND PROSPECTS FOR EMPOWERMENT

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A large portion of human population is concentrated in coastal areas. Such is evident in the Philippines, an archipelago comprised of over 7,000 islands. Fishing and related activities are thus considered a major part of Filipinos' lives, addressing survival and livelihood needs. However, coastal areas are also deemed to be highly vulnerable to a host of disasters, more so in the context of capitalistic globalization and global climate change. This vulnerability greatly affects people's lives along the coasts and has prompted institutions to come up with mechanisms that address disaster situations.

Studies show that gender issues are often ignored in disaster situations despite the fact that women have different needs and capabilities than men at these times. Previous research underscored that women experience the greatest stress during disasters because of their multiple responsibilities and their generally perceived inferior social status. Women's vulnerability during and after disasters is attributed to their political, economic and cultural conditions. After all, the destitute in coastal areas and elsewhere in the world are disproportionately women. Despite these realities, contemporary disaster research are often gender-blind and gender issues have not always been part of the criteria employed by institutions involved in disaster response and recovery.

My paper argues that there are valuable gender lessons to be learned in the experiences of women in the coastal areas of Guimaras province, Philippines, when disaster struck them in the form of the M/T Solar I Oil Spill in 2006. The main arguments in my paper are supported by the results of an interdisciplinary research on women's experiences of gender bias following the oil spill in the coasts of Guimaras. Such research results noted that women's political subordination was evident because their role in fishing is very minimally recognized.

Women were often uninformed and rarely represented in decision-making following the oil spill disaster. This under-representation exacerbated the coastal women's disadvantaged conditions as institutional interventions rarely addressed their needs and concerns. As such, important issues like violence against women (VAW) in disaster situations were not properly dealt with. The gender lessons highlighted in my paper will serve as important indicators for more gender-sensitive disaster planning, mitigation and response in coastal areas, as well as ensure women's empowerment in fishing-related activities.

Whether it is within the theme area (need not be very particular on this) - We have delineated theme areas and this study falls under Gender Change category where the author is trying find out the negligence of women's experience and their capacity to contribute in disaster situation.

Whether it is relevant to gender in A&F: Not sharply fall on the grip of gender in A&F, but due to the geographical location of the study areas and the population – can be considered relevant.

Whether it is important to the body of gender studies – The study tend to concentrate on important areas like climate change, vulnerability, empowerment – fall under the main body of gender study.

Whether can be replicated in other regions/countries for similar work – Think so, such study would be useful in country like Bangladesh where the coastal people are more vulnerable to climate change, adaptation and mitigation.

THE IMPACT OF FINANCIAL ASSISTANCE
TO FISHERWOMEN'S INCOME: THE CASE OF FISH BASKET SELLERS IN
NORTH COAST OF JAVA

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Fisherwomen (fishermen's wives and women who themselves work in fisheries activities) have a very important role in helping the family's economy. There is no doubt that fisherwomen's economic activities greatly improve family's livelihood. A common problem faced by fisherwomen in running economic activity is their lack of financial capabilities. Most of the fisherwomen who run fisheries small scale businesses such as fish baskets sellers in North coast of Java, obtain their financial assistance in the form of micro-credit from cooperatives, rural banks, or middlemen. This paper analyzes whether financial assistance in the form of micro-credit affects fisherwomen's livelihood. By using regression analysis, the effect of different types of existing microcredit and other socioeconomic variables to income, can be analyzed. In order to determine whether fisherwomen who receive financial assistance (micro credits) would be more efficient in terms of using their inputs compared to those who do not receive credits, an efficiency analysis using Frontier (Banxia) is carried out. The units of analysis are fisher women micro credit recipients and non recipient, while inputs are measured by capital/total cost, working time, and outputs measured in total revenue.

VULNERABLE WOMEN'S ROLES IN SECURING HOUSEHOLD INCOME UNDER THE CIRCUMSTANCES OF CLIMATE CHANGE IN BRACKISH WATER POND BUSINESSES IN PATI REGENCY, CENTRAL JAVA-INDONESIA: TOWARDS AN ADAPTATION AND MITIGATION STRATEGY

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Indonesia is a maritime country, comprised of 17,500 islands and with a total population of close to 245 million. Central Java province is considered the most densely populated province in Indonesia, with a population of about 37 million persons. This province played a significant role in providing man-power for the fisheries sector in Indonesia. The brackish water ponds used in Central Java are producing at only about 35% of their total capacity, while the capacity for brackish water ponds for Indonesia as a whole is only 23% (Fisheries Statistics, 2011). Pati regency was our study area. It lies on the northern-east coast of Central Java and is well-known as a milkfish producing area in Indonesia. The milkfish produced from Pati Regency is called "*Bandeng Juwana*". It has a special taste, which is different from that of milkfish produced from brackish water ponds in other regions.

Lately, the brackish water ponds in the study are showing decreases in productivity. Similar to the capture fisheries resource, the pond resources seem to be over-exploited. A lots of efforts have been put into managing both fisheries and brackish water pond resources. Several conventional fisheries management approaches have been employed but they might not have performed effectively due to the adverse effects due to climate change. Many parties have not been prepared yet to adapt because of the uncertain situation. However, how will the remaining fish-farmers in the study area survive and secure their household expenditure while suffering from climate change? One of the important factors in overcoming this uncertain situation may lie with the women's role in their families.

The main objective of the study is to set up an adaptation and mitigation strategy for women (as housewives and/or daughters) in the brackish water ponds business so as to secure their household expenditures in order to cope with climate change conditions. To design a favorable set-up for an adaptation and mitigation strategy for women, this study has explored how vulnerable fishers cope with the vulnerable fisheries resources. Primary data were collected from the relevant parties or stakeholders. In-depth interview and Focus Group Discussions were held with key-persons and other competent informants, while secondary data were used to enrich the analysis. The study employs mixed-methods with quantitative and qualitative components.

The research indicated that several signs of climate change were found to some extent in the brackish water pond businesses. The impacts of climate change on vulnerable fisheries in the study areas are significant and women's roles are found necessary to secure household income.

ECONOMIC MARGINALIZATION OF WOMEN DURING DISASTERS: THE CASE OF GUIMARAS, PHILIPPINES OIL SPILL

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Women are very vulnerable in disaster situations. Female mortality rate is not only higher, there is also increased incidence of violence against women and children after catastrophic events in areas where gender bias is tolerated (UNDP, 2010). Disasters therefore tend to worsen the manifestations of gender bias.

This study is an analysis of coastal women's experiences of gender bias particularly economic marginalization following the oil spill in Guimaras Island, Philippines. The main objective of the research is to determine the economic impacts of the oil spill on women and find out if they were marginalized in terms of economic interventions in the aftermath of the disaster. Using multi-stage sampling technique, 112 female adolescents, mothers and elderly were chosen as study participants. Primary data were collected using key informant interviews, focus group discussions and household survey. Results show that one of the most immediate consequence of the oil spill was the disruption of fishing and related livelihoods. Women and children were marginalized most because it severely affected the domain of their fishing activity, the shorelines and shallow waters. Economic marginalization was exacerbated because women's occupations and needs were considered less important, leading to minimal institutional interventions.

The results of the study affirm that disasters have distinct effects on women. It also highlights the importance of gender perspective in analyzing disaster impacts. The research recommends that disasters should be analyzed using the gender lens. Intervention programs from preparedness (e.g. early warning systems) to rehabilitation (e.g. relief operation) should be gender-sensitive and gender-fair.

FORGING CHANGE AND AVOIDING PITFALLS IN DEVELOPMENT PROJECTS THAT EMPOWER WOMEN

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Development projects meant to address gender inequity and to empower women had not always addressed the issues satisfactorily; many of these projects had increased women's work burden, thus adversely affecting their well-being. Without first understanding the needs and expectations of women and plunging them into development projects not of their own design may do them more harm than good. Development agencies should avoid taking the top-down approach when addressing gender inequity issues. Human-centred developments where women identify their own problems and discover their own solutions will be more appropriate approaches.

This paper presents some case studies from Bangladesh, Indonesia, Thailand and Vietnam which showed the increased work burden of women involved in development projects in the fisheries sector in Asia. It explores what empowerment of women really means and entails, and suggests strategies for empowering women without compromising on their expectations and well-being. It also describes indicators which can be used to assess the level of empowerment achieved, and suggests that empowerment of women should not only be confined to women at the individual or household level but should also be focused on the community/national level where women's lives can be reshaped with the forging of new norms.

WOMEN FISH BORDER TRADERS IN CAMBODIA: INTERSECTION OF GENDER AND CLASS IN THE CHANGING VALUE CHAIN

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During the 1990s to early 2000s, women border traders trading fish has lost its dominance of trade to larger traders after the border was officially opened and transport to border improved. While their trade was restricted, women traders were using strategies portraying themselves as powerless women supporting children in order to negotiate with authorities. From later 2000s, the increase in number of traders and decrease in fish catch as well as closure of private fishing lots and stricter control of border trade have changed the trade environment for these women traders. The study explores how women and men traders have changed their ways of trading or the trade itself responding to the changes in fish trade environment. The author revisits the study area that she studied in 2004, following up with the former respondents and analyzing how their fish business changed with the changing socio/economic and political environment as well as personal circumstances. Based on qualitative data through in-depth interviews of present and ex-fish traders, the study finds that a decade earlier, border trade was organized along gender lines, while the recent changes have had more complicated effect on traders that calls for analysis putting intersectionality in the forefront. As the market system become more developed, the effect of trade activities and trade policy become more complicated. The study also highlights the importance of contextualizing the analysis, understanding the embeddedness of market in the everyday lives and gendered practices of the fish traders.

GENDER-DIFFERENTIATED ADAPTATION AND COPING MECHANISMS TO EXTREME CLIMATE EVENT: A CASE STUDY ON THE COASTAL HOUSEHOLDS IN DUMANGAS, ILOILO, PHILIPPINES

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Typhoon Frank was considered as one of the strongest and most destructive typhoons that struck the municipality of Dumangas and the Island of Panay, Philippines. Records from the Dumangas Municipal Social Welfare and Development Office (MSWDO) showed that 81% of the coastal households in Barangay Bantud Fabrica and 59% in Barangay Cayos in Dumangas were heavily affected by the flood brought about by Typhoon Frank. This study was conducted to identify and analyze gender-differentiated adaptation measures and coping mechanisms formulated and implemented by these households to mitigate the impacts of flooding. Sixty respondents per barangay were selected using fixed proportion sampling. Key Informant Interviews, Focus Group Discussions and secondary sources were also used to supplement information obtained from the household surveys.

Fifty-four percent of the respondents were women; majority was married. Seventy-nine percent belongs to the 21-60 years age group. Average number of members per household is 5. Primary sources of income include farming, fishing and casual labor employment (labor).

Seventy-eight percent of the sampled households identified adaptation strategies to mitigate impacts of disasters and results show that a high percentage of women cited strengthening of dwelling units, transfer of household members to evacuation area, tree planting and securing of household belongings. Men respondents, on the other hand, cited relocation to safer place permanently, resorting to other income sources, and “being alert always” as their adaptation strategies. As to coping mechanisms, both women and men respondents cited

getting a loan as their primary means to mitigate the impacts of disasters. It was noted that the women respondents were more likely to seek financial assistance from money lenders compared to their men counterpart. Coping through hard work, asking assistance from relatives and livelihood diversification were also cited by the respondents.

ENVIRONMENTAL CHANGES AND CULTURAL IMPACTS: WOMEN'S PERSPECTIVES FROM A FISHING COMMUNITY IN WESTERN AUSTRALIA

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Global environmental changes, national economic drivers and State Government responses have led to significant social changes in a fishing community off the coast of Western Australia. The Abrolhos Islands are an important source of egg production for the Western Rock Lobster Managed Fishery. This fishery was considered the largest and most valuable single species fishery in Australia and was the first fishery in the world to achieve Marine Stewardship Council (MSC) certification. A drop in the number of settling rock lobster larvae (puerulus) 6 years ago gave rise to significant management changes, catch reductions and consequently a sharp decline in the number of fishers operating in the fishery. The reduction in the number of puerulus is likely to be environmentally driven. The Abrolhos Islands has a long history of rock lobster fishing with some Licences being handed down over 3 and 4 generations. The established community comprised; family 'camps' (simple houses) schools, sporting clubs and community halls. During the 'season' the fishing families lived on the Islands, going back to the mainland at the end of the season. With the reduction of the lobster catch and the numbers of fishers, there have been significant social changes impacting heavily on the community. From the perspectives of fishing women, this paper explores the contribution of women in this community, the social changes and community decline.

LOCATION SPECIFIC INTERVENTION FOR THE EMPOWERMENT OF COASTAL WOMEN: AN EXPERIENCE IN KERALA

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Community participation plays a key role in common property resource management for sustainable development that has significant impacts on the quality of the environment. Small-scale aquaculture has the potential to contribute significantly to poverty reduction and improve food and livelihood security in coastal area. Shellfish aquaculture appears to represent a unique opportunity to increase female participation in the fisheries sector. Improved growing and water management techniques and the introduction of value addition options presents an opportunity for women SHG groups to generate additional earnings for supporting their livelihoods. The Department of Science and Technology (DST) project on Location specific livelihood interventions in fisheries sector for the empowerment of fisherwomen in coastal Kerala carried out by CIFT, introduced livelihood options of culture of edible oyster and value addition for women groups in coastal fishing villages in Kerala. The project intervention during the year 2010-11 was evaluated to work out the economics of edible oyster culture and value added products. It was found that a profit of 137\$, 64\$, 52\$ could be generated out of an area of rack and ren culture of oysters of 50 m², 30 m², 25 m² respectively. The estimates showed that there was potential of generating 23,054\$ per hectare which presents ample opportunity for the women groups to expand the area of culture. Value addition options were found to be another lucrative option capable of generating profits of 0.7\$ per kilogram from making fish cutlets, 1.8\$ from fish pickle and 1.9\$ from prawn pickle. The study gives an insight how need based location specific technology intervention will overcome social biological and economic constraints of coastal fisherwomen.

FISHERWOMEN OF AL-WUSTA GOVERNORATE, SULTANATE OF OMAN

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Gender disaggregated data is not collected by the Ministry of Agriculture and Fisheries Wealth of Oman. Consequently, there is a deficiency of information relating to what roles women play in the national fishery. Accordingly, in an effort to fill this knowledge gap the present study examined the involvement of women in artisanal fisheries in the Al-Wusta Governorate. Eighty-five (~20%) of the total population of approximately 400 fisherwomen were randomly interviewed to gain greater insight into their socio-demographic status and precise function in the artisanal fishery. Field-based observations on the molluscan, holothurian and crustacean fisheries in which females are engaged are also presented. Interviewees (mean 36 years old) were separated into groups based on age distribution. Over 40% of responders were illiterate with only 20% having attained secondary level education or above. Three-quarters had offspring with 60% of these having 4 or more children. Fishing activities involved 5-10 hours per day for a 3 day week. Women were engaged in gathering (gastropods and bivalves), gleaning (sea cucumbers) and spearfishing (cephalopods and crustaceans) as well as exclusivity in capture, processing and marketing of marine gastropods. Major problems experienced by fisherwomen were distance to the fishing grounds and lack of financial and technical support. Finally, recommendations for gender sensitive intervention, incentivisation and support are presented.

Importance of Mangrove Conservation and Valuation to Women – A Case Study in Pichavaram Mangroves in India

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The study was carried out in a village named MGR Thittu in the vicinity of the Pichavaram mangroves in the Cuddalore district of the state of Tamil Nadu in the year 2010. The main objective of the study was economic valuation of the Pichavaram mangroves adjacent to MGR Thittu wherein a part of the study was employed through Contingent Valuation Method (CVM) of the mangroves for estimating the indirect use values of the mangroves.

In finding out the Willingness To Pay (WTP) for conservation and management of the mangroves within the CVM framework, about 86% of the respondents (104 in number) from MGR Thittu were willing to pay for the conservation and management of the Pichavaram mangroves. Among the villagers who were willing to pay, 53.84% of the respondents were female and the rest 46.15% were male. It was also recorded that 78.87% of the female respondents interviewed were willing to pay, whereas 66.66% of the male respondents were willing to pay. The main reasons for the female respondents willing to pay more than their male counter-parts were those of cultural, social, moral and ethical reasons. This shows that women in the MGR Thittu village value the mangroves not only for monetary reasons – they value them on multidimensional value scale. This also focuses on the fact that women can be very dynamic conservationists and managers of natural resources in the community-based management process.

Key words: Mangroves, Valuation, Willingness To Pay, Women, Conservation

GENDER ROLES IN MALAYSIAN AQUACULTURE INDUSTRY: EXPLORATORY STUDY IN KUALA BESUT, TERENGGANU, MALAYSIA

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An exploratory study was conducted in Kuala Besut, Terengganu Malaysia from May to June 2011. This study was conducted through collaboration with the Fishery Development Authority of Malaysia (LKIM). The objective of this study was to explore gender roles in Malaysian aquaculture society. Focused Group Discussion (FGD) among field officers of LKIM was done as an input for questionnaire development. Ten field officers serving at the Besut District were invited to a 3-hour FGD on activities involved. The data collection was conducted through group activity whereby 200 aquaculturists under the governance of Besut LKIM office and their spouses were invited to attend a meeting at the LKIM Besut Complex on the 22th June 2011. They were given the self-administer questionnaires and were assisted by LKIM officers who participate in the FGD session. A total of 275 respondents (men and women) completed the questionnaire. The respondents comprises of 157 cage operators, 95 fish pond operators, 12 hatchery operators, 9 open sea fishermen and 2 boat operators. Out of 275, there were 180 men and 95 women respondents. A small percent of the men were single (17.3%) and there was only one widowed among woman respondent. The majority of respondents had low level of education and all of the male respondents were involved in aquaculture, either in cage or pond management as a full time or part time. In addition, there were 14 out of 95 women who had indicated that they were involved in aquaculture activities. The study also solicited information on who does what in the household as well as in the aquaculture activities. The data clearly revealed that women and men were involved in traditional household chores in different roles. A different set of questions were used to obtain information on who does what in the aquaculture activities. In general, when the husbands completed the questionnaire they are under estimate the contribution of their wife for both the cage as well as in the pond management activities. Although there were only 10 women involved in the cage and 7 women in the pond management activities, only one husband indicated his wife's involvement. Qualitative research methodology need to be conducted to gain a better understanding of gender's roles in aquaculture practices in Malaysia to enable appropriate accounting of men and

women's roles in this sector. There is also a need for research on gender's role on a larger population to get a better cross country perspective of the issue.

WORK SPACES FOR WOMEN AND GIRLS IN THE MUSSEL INDUSTRY VALUE CHAIN: PROMOTING SMALL-SCALE ENTREPRENEURSHIP

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The mussel industry in Jiabong, Samar in central Philippines is one of the oldest livelihoods, yet has remained an “infant” industry in as far as production technology, product development, markets, and investment promotion are concerned. The socio-economic potentials, however, seem to be large due to its employment-generation capacity, the market demand for fresh and processed mussels, and the social benefits that accrue to the mussel industry stakeholders. This study uses the Value Chain Analysis (VCA) with a gender perspective in identifying the investment opportunities and work spaces for women micro-entrepreneurs along the various production functions of the mussel industry. Specifically, the study starts with a description of the current state of women’s and girls’ productive-reproductive work and community activities from mussel growing to mussel harvesting, mussel processing, fresh/processed mussel retailing and wholesaling. Practical gender needs (PGNs) and strategic gender needs (SGNs) are identified and consequently, measures to address the same are determined.

A mapping of the work engaged in by women and girls along the mussel industry value chain is made, where gaps vis-a-vis skills/knowledge of women and girls are determined. Entry variables for capacity development towards entrepreneurship are identified, together with other factors that may contribute in the promotion of women’s work spaces in small-scale entrepreneurship. Findings show that the mussel industry is traditionally a male-dominated economic sector where the men go to sea to grow, tend and harvest the mussels. Women are left at home to take care of the children and do household chores. Women’s work in the mussel value chain are limited to selling and processing. Girls are in the same work, too. The incidence of child labor is not significantly high, but the young girls involved are exposed to certain hazards which make child labor objectionable. Along the mussel value chain, women’s skills and livelihood/entrepreneurial capabilities can be enhanced and/or strengthened such that the value added to the mussel per production stage is increased. Hence, increasing women’s income from increased employment opportunities. More women-

microentrepreneurs is expected to generate socio-economic benefits for stakeholders along the mussel value chain.

TRANSFORMATION IN GENDER ROLES WITH CHANGES IN TRADITIONAL FISHERIES IN KERALA, INDIA

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In most food production systems technological changes, like mechanization have often resulted in the displacement of women from their traditional roles in those systems. This paper looks at three different fisheries in the traditional sector in the central part of the state of Kerala, India and attempts to analyse the changes and the resultant changes in the gender roles.

The first is the ring seine fishery where the fishermen belong to the Latin Catholic community. The fishery which was small scale has transformed into a capital intensive, high power, labour intensive fishery with landings shifting from the beaches to the harbours. The beach landing facilitated the active participation of women, who took over the post harvest activities like sorting the catches and further marketing or processing. With the landings shifting to the harbours and becoming linked to price incentives of the market, women have slowly been marginalised. Women engaged in marketing still frequent harbours, for purchase of fish, but the post harvest activities, like handling the catch etc. have been taken over by organised male labour.

The second is the stake net fishery, generally operated by the *Dheevara* community which has traditional rights over *padus* or designated stake net fishing areas/ regions in the backwaters. Women are completely excluded from fishing operations and come into the picture only after the catch is landed, sorting the catch and later marketing them. There are religious rituals associated with the setting up of the stake net and women are also not allowed to participate in these. The one significant change that has taken place in the community is that the traditional inheritance of the *padus* by women as dowry has slowly disappeared owing mainly to economic considerations. The stake net fishery is facing increasing competition from other fishery as well as commercial interests. The catches in general have been declining and there is increasing pressure to abandon what had been a

way of life for centuries. In this changing scenario, the need to protect the *padus* from passing on to another family and in the process getting lost is pre-empted by discontinuing the practise of women inheriting the *padus*.

The third is the homestead based, localized clam fishery. This fishery evolved basically to cater to the lime industry. The shells were more sought after than the clam meat. Here again the fishermen are from the *Dheevara* caste. The fishing which was done by diving and hand picking was an activity women had been actively engaged in. The introduction of small canoes, which have over time become motorised, and the scoop nets have made the activity male centric and now women are rarely seen in harvesting. They are now restricted to processing and shucking of the clam meat and further marketing of the meat.

Women and Elderly Person's Roles and Changes in Oyster Aquaculture in Japan

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Women and elderly person's role in the oyster aquaculture industry in Japan are important. The majority of the produced oyster is made a stripped shellfish in Japan and the shucked oyster circulates and is sold. The women and the elderly persons are a very important supporters in work to peel off oyster's husk.

The production amount of the shell-on oyster cultivation in Japan is 210,188 tons (2009). Oysters occupy the main position in the aquaculture in Japan. The main oyster-aquaculture district is Hiroshima Prefecture, Okayama Prefecture, and Miyagi Prefecture. It is managed in Okayama and Miyagi Prefecture by small-scale aquaculture though it is managed in Hiroshima prefecture by large-scale.

Women and elderly person's existence have been one of the conditions that a small-scale aquaculture industry continues. However, the change in the exchange with the foreigner labor has changed the location of the women and the elderly persons in the oyster aquaculture industry. The change has changed also in the aquacultures household and the community. In a word, there is a possibility that the conditions of the reproduction of small-scale oyster culture fishery has changed.

This presentation examines how women and elderly persons have a role in Oyster Aquaculture and have changed in Japan recently. The results of the analysis will suggest that government should solve peculiar gender and aging problems in oyster aquaculture communities, and reconsider the present framework of policy for aquaculture and community development.

WOMEN'S WORK EXPERIENCE AND EMPOWERMENT IN FISHERIES

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In Korea, central and local governments have established and practiced their own action plans aimed at improving women's ability in fishing and agriculture according to relevant Act. Nevertheless, taken as a whole, women in fishing have been paid little attention in policy making. The government's action plans are mostly based on female farmer's reality, leaving women in fishing aside. Therefore the established plans are hardly applied to actual situation of women in fisheries, and consequently have less effect in empowerment of women in fisheries. This paper examined women's working condition and experience in order to promote the effectiveness of policy. Searches were made using survey and focus group interview (FGI) to women in fisheries in Gangwon province. This investigation focused on women's status and identity related to their work as a fisherperson. Although governments have constantly tried to enhance status and capability of women through various policy projects, the result of research showed that status of women in fisheries hasn't been improved that much in real field and self-recognition of women to professional is low as well.

EXPANDING ROLES OF MEN AND WOMEN IN AQUATIC AGRICULTURAL SYSTEMS AND THE IMPEDIMENTS IN TAPPING THIS POTENTIAL FOR INCREASING PRODUCTIVE CAPACITIES: THE CASE OF THE PHILIPPINES

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This paper attempted to describe the expanding roles of men and women in selected aquatic agricultural systems (AAS) areas in the Philippines and to identify the impediments in tapping this potential for increasing productive capacities. The data came from the Focus Group Discussions (FGD) conducted in August to October 2012 with fishers, farmers, women and youth and Key Informant Interviews (KII) in eight selected AAS areas (5 in Visayas and 3 in Mindanao) during the pre-scoping phase for the WorldFish CRP 1.3 in the Philippines. Secondary data supplemented the FGD and KII data.

Results show that men and women play roles at home and in the work area that are complementary and sometimes substitutes of each other. Men and women engage together or alone in many activities to earn income. The need for the husband and wife to work together (in farming, fishing or in other income earning activities) is necessary for economic survival. With women now doing more productive work, it is common among men to take care of household chores and the children. The challenges of restricted access to and control of resources (education, land, credit, information, technology, trainings), resource degradation, restricted market for produce, and persistence of biases in programs and policies impede the attainment of gains from expanded gender roles to improve productive capacities.

RIGHTS, BENEFITS AND SOCIAL JUSTICE: STATUS OF FEMALE WORKERS ENGAGED IN THE SHRIMP PROCESSING INDUSTRIES OF BANGLADESH

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The issue of labor rights violation in Bangladesh shrimp processing industry has been criticized recently by a number national and international labor rights organizations which have important implications for the country to continue shrimp and seafood trade with the international markets particularly in US and European markets. The shrimp and seafood industry has been playing an important economic role occupying the second position in the export earnings after readymade garments. The industry is employing over a million of workers where proportion of female workers in the processing sector is about 80% who are said to be the major victims of violation of labor rights, benefits and social justice.

The criticisms of labor rights violation pressed the industry and the regulating ministries to undertake necessary actions to ensure that shrimp processing factories are aware of the labor rules, ensure compliance of existing Labor Laws and continue export in the international market. The United Nations Industrial Development Organization (UNIDO) with the financial assistance from European Union and NORAD came forward to assist Bangladesh Shrimp and Seafood Industry to strengthen its capacity along with related public sector institutions responsible for controlling the industry officially. This paper presents an account of proactive measures and supports given as technical assistance (TA) from UNIDO to overcome the challenges and take benefit from the trade opportunities available for the entrepreneurs through improving worker's rights and their entitlements.

This paper presents important findings from the evaluation undertaken by UNIDO mission during the implementation of gender focused project interventions across the industry. The findings reflect the impressions obtained from direct interview of workers, opinion from the entrepreneurs and practical checking of compliance records from the industry and government offices controlling the shrimp export and social compliance. Attempt has also been made to analyze the policy environment barring the implementation of labor rules across the shrimp processing sector of the country. A set of recommendations drawn on the experiences from the engagement with the UNIDO project which have important lesson learning for implementation of workers' rights and benefits to improve the socio-economic conditions of worker community across the export oriented shrimp and seafood industry.

WOMEN'S ACCESS TO PRODUCTIVE TOOLS AND ROLES IN FISHERIES MANAGEMENT

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It has been increasingly recognized in the academic literature that despite women's important roles and contributions to the fisheries sector, they are being left out of fisheries management. In order to ensure sustainable management of the resources and viable livelihoods in fisheries, it is important to guarantee the participation of all the relevant stakeholders in the sector, highlighting and understanding better the roles of women. This paper draws on bibliographic literature on the theme of women's access to production tools (including primary tools such as boats and gears), processing equipment, and their role in fisheries management. It will review case studies where women have owned the productive tools and will aim at finding evidence of the efficiency and efficacy with which women run and operate micro and meso fishing enterprises. In particular, the paper will look at the practices, challenges and the factors (support, policies, organizational requirements) that lead to successful women led enterprises in the fisheries sector, and strategies that enhanced women's roles in resource management. The study will also look for examples where the non access to productive tools and to fishery products have led to situations which pose threats to food and nutrition security, livelihoods and family health, including vulnerable groups and children. The paper's aim is to make a case for identifying situations and opportunities to scale up the role of women in responsible fish production and processing and thereby giving better access to women's voices in fisheries policy formulation and dialogue, as well as to improving their participation in decision making mechanisms and fisheries management bodies.

ECONOMIC STATUS OF BRACKISHWATER AND FRESHWATER OPERATORS: CASE STUDY OF AQUACULTURE INDUSTRY IN MALAYSIA

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Aquaculture has been identified as one of the potential growth sector that could contribute to national income, export earnings as well as poverty eradication in Malaysia. Brackishwater and freshwater productions were identified as activities potentially able to eradicate poverty. Poverty issue especially in rural area is gender related. Hence this study was conducted to investigate the economic status (as measured by household income) at the household level of operators involved in brackishwater and freshwater aquaculture. The study involved 154 men of which 79% were farming brackishwater species and 21% were farming freshwater species. The majority (37.1%) were operating fishponds, 53% were operating cages and less than 10% had both cages and ponds. The mean age of the respondents was 42.4 years old and more than half work fulltime as aquaculturist while the other 45% were part-time. The data revealed that the mean monthly earning from brackishwater was significantly higher (RM 1,790.47) compared to freshwater aquaculturist (RM 1,052.78). There was significant difference in income among part timers compared to full time operators. Those part-timers tend to have low earning (RM1,362.30) from aquaculture activities compared to those working full time (RM1,888.99). Half of the respondents had household income below RM1,500 which was considered as low income. Almost three quarters (74%) of the freshwater aquacultutist compared to 49% of brackishwater aquaculturist in the study earned below RM1500 from their aquaculture activities. The proportion of respondents with savings was high (92%) and the mean saving reported by 113 respondents was RM3,125. The respondents spent on the average RM486 monthly for food; and on average the respondents spent 38% of their monthly household income on food. The data revealed that more than half of the respondents spent more than 33% of their household income on food. This is an indicator of poverty among respondents in this study as food poverty line proposed by Orshansky (1963-65). In general, the economic status of those involved in aquaculture in this study is generally low with half of the respondents earning below RM 1,500, which always been expected as 'high income activity' especially the brackishwater, because aquaculture has been identified as one of the potentially lucrative endeavour.

Further study is needed to cover a wider population to provide a better picture and such data can also be used as input into the development of more effective strategies to eradication poverty through scaling up the aquaculture activities.

DR M.C. NANDEESHA: THE MAN WHO BROUGHT GENDER AWARENESS TO THE ASIAN FISHERIES SOCIETY

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In December 2012, the world lost Dr Mudnakudu C Nandeesha, the man who put women and gender equality issues on the agenda of the Asian Fisheries Society. In 1990, Dr Nandeesha organized the Women in Fisheries in India workshop for the Asian Fisheries Society Indian Branch. In subsequent field work in Cambodia and Bangladesh, Dr Nandeesha became even more convinced that women's equality was a major factor in the successful development of aquaculture and fisheries. He organized first a national (Cambodia, 1994) and then a regional (Indo-China countries, 1996) workshop on women in fisheries. At the same time, the Cambodian non-government organization, PADEK, which he worked for, sponsored the first women in fisheries photographic competition at the 1995 5th Asian Fisheries Forum (AFF) in Beijing. These competitions were also held in 1998 and 2001 at the Asian Fisheries Fora. However, the photograph competition was the soft way into the AFS processes. Dr Nandeesha approached WorldFish Center to help sponsor, with AFS and others, the first Global Symposium on Asian Women in Fisheries in 1998 at the 6th AFF. This set the pattern to having a women, later gender, symposium at each Asian Fisheries and Aquaculture Forum. This presentation traces explores in depth some of Dr Nandeesha's key ideas on eradicating gender inequality in fisheries and aquaculture, through analyzing some of his key publications and from my first hand experience of how he influenced people and organizations. It concludes that Dr Nandeesha was a visionary with an intuitive understanding of how to motivate others to act and bring about institutional change.

WOMEN PROFESSIONALS IN FISHERIES AND AQUACULTURE IN INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR)

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One of the aspects that augurs well for gender equality in fisheries is the presence of women professionals in fisheries and aquaculture. The Indian Council of Agricultural Research is an apex body guiding research and development in agriculture and allied areas, including fisheries, in India. A Subject Matter Division in ICAR looks after Fisheries. Research in fisheries is undertaken in eight Institutes, each looking after specific aspects of fisheries, ranging from marine, inland and coldwater fisheries; freshwater and brackishwater aquaculture; fisheries education; fisheries harvest and post harvest technology; and fish genetic resources. A study in 2001 found that women in scientific cadre formed 13.92% of the total scientific force in fisheries research (under ICAR) and by 2012 the percentage had increased to 20%. Besides, women are also present at other levels in the organizations, lending technical and administrative support for research. This paper provides some insights into the presence of women vis-à-vis men in fisheries research in ICAR and looks also at the areas of science they are contributing in. The opportunities that are available to and that are being used by women to attain higher training in their field of work is also explored. The paper also explores the spatial mobility of women researchers, the lack of which was often cited as one of the major blocks in career advancement of women, usually constrained by family concerns.

CARP-SIS POLY CULTURE: A NEW INTERVENTION TO IMPROVE WOMEN'S LIVELIHOODS, INCOME AND NUTRITION IN TERA I, NEPAL

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In order to improve the health and nutrition of women and children through increased intake of nutrient-dense Small Indigenous Fish Species (SIS) and empower women, a pilot project on carp-SIS-prawn polyculture was launched in Chitwan and Kailali district for three years in December 2008. One hundred and thirty six women farmers were selected for fish farming. A household pond of nearly 100 m² was constructed to each farmer through the project. Ponds were stocked with four carp such as rohu (*Labeo rohita*), silver carp (*Hypophthalmichthys molitrix*), bighead carp (*Aristichthys nobilis*) and mrigal (*Cirrihinus mrigala*); SIS such as dedhuwa (*Esomus danricus*), mara (*Amblypharyngodon mola*), pothi (*Puntius sophore*); and freshwater prawn (*Macrobrachium rosenbergii*) in first and second project year. In third year, stocking combination was changed to six carp; rohu, silver carp, bighead carp, mrigal, common carp (*Cyprinus carpio*) and grass carp (*Ctenopharyngodon idella*), and SIS; dedhuwa and pothi, while prawn was excluded. Average total production obtained was higher than national average. The farmers' households consumed 48.7% of the total production on average. Farmers and their families consumed all SIS whereas surplus carp were sold. This raised their fish consumption above that of the national average. Farmers sold 51.3% of the total production and earned Rs. 3,025 per household in 270 days which helped them to be empowered economically. In addition, farmers received trainings on fish framings and lead farmers visited Bangladesh to learn about advance aquaculture systems to increase the production and to utilize the dike for extra crop.

Fish production was affected in early year due to use of poisoned source water, which was mitigated in subsequent years through awareness to farmers. However, prawn and mara seed transport had been bottleneck during entire project period. Hence, both prawn and mara were eliminated from stocking combination in third year. Despite these, the project has been a landmark in Nepalese aquaculture due to its role i) to establish SIS as a high nutrient value fish, ii) to introduce a new farming practice "carp-SIS polyculture" to increase the food, income and nutritional standards of women and their children in a marginalized Tharu community and iii) to empower women through income generation and pond ownership.

ON-THE JOB EFFORT AND CONTRIBUTION TOWARDS SUBSISTENCE BY THREE DISTINCT GROUPS OF WOMEN FISHER-FOLK OF KERALA, INDIA

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Kerala is a significant State in the fisheries map of India with vast aquatic resources coupled with rich species diversity representing 38863sq km land area and a total population of 33.4 million. There are 222 marine and 113 inland fishing villages in the State with fisher folk population of 771249 and 230376 respectively. During 2011-12, the State produced 0.7million tones of fish which was almost 20% of the total marine landings of the country. On an average, it contributes 15-20% to the total national fishery export, which has crossed the level of 3.5 billion US\$ last year. Almost 80% is contributed by the marine sector and 20% by the inland which jointly contributes 1.26% to the Gross State Domestic Product. As seen in other sectors, this is also a male dominant activity. The present study is focused on comparing the job effort by three distinct groups of fisherwomen populations of the State viz. marine, inland and the tribal. Information was collected using a structured questionnaire from 300 fisherwomen each from the marine and inland sector through random sampling. In the case of tribal fisher folk, the sampling size was only 20. The study also analyzed the interaction of the type of activity (tasks undertaken) and the work environment (hours of work, posture, ease of operation, environment, quality of water) on their health and livelihood through self reports. Their physical and psychological stress including strain and musculoskeletal injuries were also recorded and compared. Simple statistical tools like mean and percentage were used in data analysis. Analyzed survey data revealed that in the marine sector, 100% fisherwomen are engaged in ancillary jobs including fish sorting, prawn-peeling, cleaning, drying, product stuffing and fish vending. It is estimated that only 19% women are engaged in hard work (carrying fish on their head for marketing) while others are doing comparatively easy work (fish processing activities) for earning their daily bread. About 75% are old (above 60 years) with more than 30 years of experience. They are working for a period of 8 to 11 hours a day and earn an amount of 6.5 to 10 US\$. In the case of inland fisherwomen, 37% are engaged in hard work including primary fishing mainly clam collection and selling it to the consumers. Though it is a work of seasonal nature, the strain taken by them is incomparable with any other hard job undertaken by women anywhere in the world.

They earn an amount of 4.5 to 7 US\$ a day by working for a period of 7 to 10 hours. Among the tribal fisher folk, the women go for fishing along with their spouse to interior forest areas even risking their life. They perform duty for 16-18 hours a day but the income levels are highly erratic (0.0 to 30 US\$ per day). The per capita income of the three groups under study although erratic is slightly higher than the national average figure. However, it is awfully low compared to the urban women average. The first two groups of fisherwomen invariably face a number of job related health problems while the third group does not have such issues. The entire women-folk under investigation contribute significantly to the family protein diet and to the family income.

SHARING EXPERIENCE: IMPLEMENTING GENDER AWARENESS WORKSHOP IN AQUACULTURE SECTOR

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The workshop empowering vulnerable stakeholder groups is one of the work packages under the AqASEM09 (Asia–Europe Meeting Aquaculture Platform) –a European Commission supported project under the 7th Work-package (WP7) The project is being coordinated by Ghent University, Belgium, which involve nine partners from European and Asian institutions to work on an action-oriented agenda for co-operation and to develop a multi-stakeholder platform for dialogue, networking and continued coordination concerning sustainable aquaculture between EU and Asia. The objectives of the workshop were to share country experiences and best practices regarding poverty eradication and gender issues; increase knowledge and skills in gender analysis and gender mainstreaming; identify strategies to promote appropriate technologies and greater women participation for vulnerable groups and to develop action plans towards empowering poor farmers and women in aquatic food production. The workshop conducted from the 6th to 10th February 2012 in Felda Residence Hotel, Kuala Terengganu, Malaysia, adopted participatory and integrative approaches to enable full and effective participation. The main topics covered in the workshop were poverty and gender issues in aquatic food production, empowerment of vulnerable groups, gender analysis tools and gender mainstreaming strategies. The respective ministries and agencies in the 10-Asian country were contacted to nominate two participants representing policy maker and two field officers or researcher. There was also a requirement of mix-gender participants. Due to lack of response and inability to identify the right person, only five countries (Philippines, Cambodia, Indonesia, India and Malaysia) could successfully respond to the offer. The workshop organizer also accepted participants from India upon request from the Network of Aquaculture Centre in the Asia Pacific (NACA). Based on the pre-test that was conducted, a majority of them, with the exception of those from India and the Philippines had no background on gender issues and awareness. After 5-day workshop the post-test revealed that the participants had increased awareness of gender issues and indicated that the workshop contents were useful in their work. From workshop organizers' perspective, much more effort needs to integrate gender into the aquaculture activities and research. More gender disaggregated data and research are

needed to provide better understanding of the gender issues. Much effort is required to increase gender awareness among those working in the aquaculture sector.

FEMINIST METHODOLOGY AND FISHERIES SCIENCE

Dr Marilyn Porter, Professor Emerita

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This paper will argue that despite the traditional separation between feminist scholarship and fisheries science there is a synergy that is particularly relevant to the integration of gender concerns into fisheries and aquaculture research projects. The paper will be framed by a discussion of the history of feminist methodology – from an ‘add women and stir’ approach in the 1970s to the current debates about the relevance of postmodern theory. It will look at the way in which feminist methodology has been seen as coterminous with qualitative methods and ask how this is rooted in political and ethical concerns for ‘women’s experience’ as a central and essential category. This exploration of the core of feminist methodology will point us towards ways of making fisheries research more concerned with gender issues while avoiding the conflict between qualitative and quantitative approaches.

AFS GENDER AND FISHERIES NETWORKING EXPERIENCES: WHAT WORKS, WHAT DOESN'T WORK

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Globally, the fish sector has paid little attention to women or gender in aquaculture and fisheries, and that effort has waxed and waned in the 30 plus years since the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW). The Asian Fisheries Society (AFS), a mainstream professional body founded in 1984, has maintained a continuous but swelling effort since 1990 when the Indian Branch organized a Women in Fisheries in India Workshop. The Society's contributions, although continuous, have been opportunistic and relied on a patchwork of small resources contributed by people prepared to act as leaders and contributors, and explicit and implicit organizational support, including small amounts of donor cash funds. Coupled with the lack of funding and policy attention to gender in the fish sector, progress has been slow but seems to be accelerating as major institutions and donors pick up on gender equity. The work by AFS in keeping the torch burning has taught many lessons, on what has worked, what opportunities have been used and where opportunities may have been lost.

This presentation will analyze the AFS experience, using actor-network theory, to better understand what has happened and how different actors in the AFS process have viewed their roles and the processes entailed.

ANTHROPOLOGICAL SYUDY OF THE GENDER ROLE IN THE JAPAN MIYAZAKI FISHING VILLAGE

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It is easy to consider that a man does the fishery mainly, but many women are engaged in fishery directly or indirectly. For example, a woman catches a shellfish and seaweed by diving fishing and catches a fish with a husband directly. On the other hand, their wife have to care for fishing gears and manage the salary of the employment sailor and income of the husband at home, while her husband is fishing in the sea. Besides, they do the indirect fishery activity such as the spread of fish food culture or the sale of marine products. A role and the function of women in the fishing village are very various.

The South Miyazaki coast facing the Pacific of Japan is affected by the Kuroshio Current and occupies most of fish catches as a base of bonito fishing and the tuna fishery. In addition, the coastal fishery by fixed shore net fishing and the boat fishing is prosperous, too. However, the fishing employee and marine resources decrease year by year, and the problems such as successors are actualized.

By the way, the fishing village on fishery by the development of the fishery technology positively is increasing fish catches. And then their fishermen's cooperative association opens a restaurant, the fish store and they sell the marine products which they caught to a tourist directly and are raising an income.

On the other hand, they do not effort to develop their fishery technology though fish catches decrease. However, their wives are promoting activation of their fishing village economy by the work on the spread of fish food culture.

This study is to clarify about difference in role allotment of the man and woman and mutual relations in the Miyazaki fishing villages from the viewpoint of adaptation.