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Technical Paper



Do Catastrophes Exacerbate Gender Bias? An Analysis of Coastal Women's Experiences of Economic Marginalisation in a Disaster Context

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Abstract

Women are highly vulnerable because of poverty, gender division of labour and multiple burdens. These gender inequalities and biases are reinforced when disasters strike. Thus women tend to suffer more than men in disaster situations. For a disaster-prone country like the Philippines, the understanding of the differences in the impacts of catastrophes on men and women is crucial for effective disaster risk reduction and rehabilitation strategies. This research addresses this issue by examining how a destructive oil spill in Guimaras, Philippines affected the economic wellbeing of women by focusing on their experiences of economic marginalisation. Primary data were collected using key informant interviews, survey and focus group discussions.

Results show that the oil spill disrupted women's fishing activities. The data also reveal that they were already experiencing economic marginalisation even before the disaster. This was exacerbated after the disaster because their needs were considered less important leading to unequal institutional interventions. The study affirms that disasters reinforce economic marginalisation of women. It also highlights that gender perspective is crucial in analysing disaster impacts. It is recommended that post-disaster relief and rehabilitation efforts be guided by gender needs assessments and gender sensitive targeting of beneficiaries.

Introduction

Disasters result in serious social disruptions accompanied by considerable human, material and environmental losses (Ginige et al. 2009). Impacts of disasters on social groups vary depending on vulnerabilities which in turn are influenced by social structures shaped by differences in age, physical ability, sex and gender (Enarson and Morrow 1998).

The social and economic impacts of disasters are dictated by the structures and contexts in which they occur (Jones 2005). Thus men and women are affected differently by disasters because

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of variations in their physical characteristics, social norms and behaviour (Neumayer and Plumper 2008). Women's economic status is an important aspect of their vulnerability during disasters because they are generally poorer than men, have lesser access to resources, fewer employment opportunities, lower income earning capacity and minimal control over decision-making processes (Enarson and Morrow 1998; Nowak and Caulfield 2008; Laska et al. 2008). Thus, economic marginalisation and other discriminations against women are worsened in disaster situations (Weist et al. 1994).

The disproportionate effects of disasters on men and women are an important consideration in developing countries with a high incidence of disasters, such as the Philippines because it hampers development. The Philippines is one of the most highly exposed countries to disasters in the world due to its geographical location that makes it prone to earthquakes, volcanic eruptions and typhoons. Aside from these natural calamities, environmental disasters are also prevalent in the country. Oil spills in particular have increased in frequency recently, with major incidents in 2005, 2006, 2008, and three incidents in 2013, in various parts of the nation because of its archipelagic nature and the heavy reliance of its people on water transportation.

The August 2006 oil spill near Guimaras Island was one of the most devastating disasters in the Philippines and it resulted in huge economic and environmental losses. About 2.4 million litres of crude oil contaminated approximately 24 km² of the shores and mangrove areas of the Island when a tanker sank in its vicinity due to bad weather. As the biggest oil spill ever in Philippine history, the disaster adversely affected three out of five municipalities and 20,000 coastal residents. Valuation studies show that direct losses alone, arising from disruption of livelihoods and recreational activities, reached USD 23-24 million (Lizada et al. 2009).

Objectives

An environmental catastrophe as major as the Guimaras oil spill contained gender concerns. Little was known about these issues, however, because most of the studies on the oil spill did not tackle them nor employed gender analysis. This study is part of a bigger research project that filled the knowledge gap by focusing on the manifestations of gender bias specifically economic marginalisation of coastal women affected by the oil spill. The objective was to answer the basic question of whether the disaster has exacerbated the economic marginalisation of women.

The information provided by this research will lead to a better understanding of the different impacts of the disaster on men and women. This information is valuable in guiding relief and rehabilitation planning for future disaster events.

Materials and Methods

The locale of the study is the oil spill affected island of Guimaras, Western Visayas, Philippines. The island has a total land area of 60,465 km² and a coastline of 239 km. It consists of five municipalities and a population of 162,943 as of the 2010 census. This study was part of a bigger research that tackled coastal women's experiences of gender bias, namely, economic marginalisation, political subordination, stereotyping, multiple burden and violence against

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women following the oil spill (Badayos-Jover et al. 2014; Jover and Defiesta 2014). This was conducted in Tando and Lapaz, the two coastal villages in Taklong Marine Sanctuary that were severely affected by the disaster. Primary data, including those specific to economic marginalisation and multiple burden, were gathered through survey, focus group discussions (FGD) and key informant interviews (KII). The survey included 175 female respondents and their households. The sample size was calculated assuming 95% confidence interval and 7% sampling error. The sample size for each barangay was determined using the proportional allocation method based on population size. The instruments used in the bigger research were questionnaires and FGD and KII guides designed to capture data pertaining to each gender bias. This study utilised those that pertain only to economic marginalisation and multiple burden.



Fig. 1. Location Map of Guimaras Island. Source: Province of Guimaras, Google Maps.

Three FGDs were conducted with nine to twelve female participants each. To capture variations in experiences of gender bias, the participants were chosen according to age groups namely adolescent girls (15-25 years), mothers (26-59 years) and elderly women (60 years and above). Key informant interviews were done among local leaders, government employees and NGO personnel involved in the oil spill relief and rehabilitation. The KIIs provided data on the process and conduct of relief and rehabilitation efforts in the oil spill affected communities. The research is descriptive in nature, using gender tools of analysis such as narratives, gendered resource mapping, 24-hour activity profiles and gender disaggregation of data.

Results and Discussion

Profile of respondents

The survey participants were mothers between 26 to 59 years of age, youth between 15 to 25 years and elderly women 60 years and above. The respondents were generally literate except for one elderly woman who never went to school. The majority of respondents (62.2%) reached secondary school and their average educational attainment was second year high school, which is equivalent to eight years of formal schooling. Among all the study participants, the elderly were the least educated with only five years of formal education on the average.

Many of the respondents come from large households, typically extended families with six members that included immediate or close relatives. Males, usually the father, play a dominant role in the majority (81%) of the families as household head and the primary income earners. This role also designates them as the major decision maker of the family. Few households (34 or 19%) were female headed, of those, most heads were elderly women (42%) or mothers (23%).

Fishing was the most prevalent livelihood of almost all (92%) of the respondent households. Each family, on the average, had two members engaged in fishing and related activities such as gleaning and fish vending. There were more male (56%) than female (44%) fishers, which made fishing a male dominated occupation in the study site.

Economic marginalisation prior to the oil spill

Economic marginalisation is the segmentation and exclusion of individuals or groups from the economy, its markets and benefits, resulting from economic and non-economic origins (Kanbur 2007). The economic marginalisation of women is a form of gender bias that results from socially constructed roles.

Despite the reduction in many difficulties confronted by women over the last two decades, gender disparities still persist, particularly the unequal access to economic opportunities (World Bank 2012). These differences are also pervasive in fishing communities where women are generally economically marginalised, having less control over fisheries value chains, being engaged in less profitable activities, and having limited participation in lucrative markets and businesses.

The women in this study were experiencing economic marginalisation even prior to the oil spill. This resulted from their multiple burdens and limited access and control over fishery resources.

The mothers and elderly respondents were over burdened by the number of tasks that they performed at home and in the community. The 24 h activity profiles showed how they allocated time to various activities within the 24 h period. Women fishers normally started their day at 4 am in the morning and ended it at 9 pm in the evening. For the whole duration of their 17.5 average waking hours they performed about 13-17 different tasks. Two of these were productive in nature

(gleaning or weaving), providing additional income and food on the family table. Generally, they spent more than half (9.7 h or 55%) of their day doing reproductive work such as child rearing, cooking and laundry. Productive activities (4.3 h) and leisure (3.7 h) on the other hand, took up only 24% and 21% of their day respectively.

Activity	Number of activities	Specific activities	Average hours	%
Productive work	2	Gleaning, weaving, fish vending, shallow water fishing	4.3	24
Eating and leisure	3	Watching TV, napping, gambling	3.7	21
Reproductive work	11	Cooking, tending to the animals, collecting firewood, cleaning the house, taking care of the children, etc.	9.7	55
Total	16		17.7	100

Table 1. Coastal women's activities by type and number of hours spent on each activity.

Source: Focus group discussion transcripts, 24-h activity profiles.

The 24 h activity profiles further showed that while women were relegated to household work, they also performed productive work as well. Men, on the other hand did most of the productive work to earn income for the family. Their daily tasks were less varied, limited to three to four activities only. This gender division of labour or the reproductive and productive dichotomy placed women in a subordinate position in the fishery. Because fishing is considered as productive work, it is perceived as the domain of men, and not of women. Thus, even before the oil spill, women in the fishery were secondary only to men, who were viewed as the "main fishers". Women's tasks were limited to the preparation of the fishing gear and supplies, mending nets, helping in fish trap maintenance, processing and selling the catch and sometimes aiding the "main fisher" in offshore fishing when an able-bodied son or male relative was absent.

"Babayi kag lalaki pareho naga pangisda, pero ang lalaki naga bugsay. Sila ang may control sa lawod kay sila ang gapamukot kag nagapanglabay. Ang mga babayi ara sa hunasan, mamulot sang pakinhason sa higad" [Both men and women are into fishing. But men are the ones holding the paddle. They control the sea because they are the ones casting the net and hooks. The women, on the other hand stay at the shorelines, gathering shells. - mother and FGD participant

Gender division of labour also tied women to the household and reduced their access to productive assets and opportunities, particularly access to and control of fishing grounds. The FGDs revealed that women in the study site fished in near shore/shallow waters such as mangrove forests and beaches close to their homes. Their fishing activities were limited to gleaning for shells and shellfish during low tide and fry gathering and fishing along mangrove areas.

The results of the survey affirm the findings in the FGDs. Out of the 305 persons (respondents and household members) engaged in fishing and related activities; women were found in their traditional roles as gleaners (83%) and fish vendors (67%) while men (88%)

dominated offshore fishing (Table 2). Gleaning and fish vending were perceived to be appropriate for women because these were considered lighter and less risky than offshore fishing. Moreover, women's fishing grounds are also conveniently located near their homes so they can still attend to household chores making their fishing activity an extension of their reproductive role.

Table 2. Frequency and percentage distribution of survey respondents and their household members engaged in fishing by sex and fishing activity, Guimaras, Philippines, 2008.

	Male	%	Female	%	Total	%
Fishing	143	88	19*	12	162	100
Gleaning	21	17	101	83	122	100
Fish vending	7	33	14	67	21	100
Total	171	56	134	44	305	100

*Women assisting husband when the young male family member (usually the son) is absent.

Because women could not leave their homes, they had to contend with marginal fishing grounds that produced limited and less valuable fish species. The shells that they gathered from the shorelines commanded a much lower price in the market compared to the species in the men's fish catch. This translated to lower average daily fishing income for women at PhP 67.2 (USD 1.60 at exchange rate: USD 1 = PhP 42.00) compared to the PhP 185 (USD 4.41) daily earnings of men.

The income gap created a perception in the community, including among female fishers, that women's fishing activities were inferior to the "main" fishing activities of men. Most women fishers did not even place monetary value on their catch believing that it was too small, only of subsistence value and does not generate any monetary contribution to the household. They did not to take into account however, that a big part of their family's food intake came from their fish catch.

The difference in men's and women's daily fishing incomes can be attributed to the latter's multiple burdened situations. Women perform numerous and varied tasks everyday by doing both reproductive (household maintenance) and productive (income-earning) work. Women generally have lesser time to fish and therefore earn a much smaller daily income.

The male-female fishing income-gap worsened women's marginalised position in the fishery as it gave the impression that male fishers were better income earners than their female counterparts. The gap however was based on daily income accounting and therefore was not reflective of the actual value of time spent on fishing. Women's daily fishing income was much lower compared to that of men but the disparity becomes insignificant when earnings are expressed hourly. Men spent an average 5.86 fishing hours every day while women's mean fishing time was only 2.18 h. Expressing fishing income on an hourly basis, the male-female income the gap was negligible at USD 0.75 for men and USD 0.73 for women.

Despite the dominance of women fishers in shallow waters, access and control was not exclusive to them. Hence, men had access to these fishing grounds as they were also found fishing alongside women and children in these areas. The men on the other hand, had full dominance over

the more productive fishing grounds offshore. Unlike the shallow waters, offshore fishing grounds are more difficult to reach hence access and control goes only to those with fishing vessels. Since women typically do not own boats, they are unable to enter offshore fishing, leaving these grounds exclusive to male fishers.

Table 3. Average hourly and daily fishing income of respondents and their family members engaged in fishing by sex, Guimaras, Philippines, 2008.

	Men	Women
Average daily fishing income (in USD)	4.41	1.6
Average daily fishing hours (h)	5.86	2.18
Average hourly fishing income (in USD)	0.75	0.73

Source: Survey data.

It is not only in the fishery that coastal women in Guimaras were marginalised. They also experienced the same discrimination when it came to alternative livelihoods, especially those that utilised natural resources such as agricultural lands and forests. Agriculture and agricultural labour were the most common alternative income sources of the fishing households included in the study. Like in the fishery, women were also marginalised in the agricultural sector. Men were engaged in farming activities as hired labourers during planting and harvesting season. Their tasks, e.g. ploughing, were considered as major work as these are more arduous compared to the ones delegated to women. The latter were only hired for minor and lighter jobs such as weeding or harvesting. Hence, there were more male than female agricultural labourers. Another source of livelihood in the area was charcoal making. This livelihood was dependent on the forest for raw materials and was considered a strenuous task. Hence, just like fishing and agricultural labour, it was also predominantly a male activity.

Effect of the oil spill

The oil spill heavily affected the fishery sector more than any livelihood in Guimaras. Fishing activities were disrupted and households were left without their main source of income. Within the fishery however, the impact of the oil spill was much severe on women than on men. Women fishers were more vulnerable due to the relatively higher exposure of their livelihood to the oil spill. They were also more disaster sensitive owing to their subordinate position in the fishery and they lacked adaptive capacity because, as keepers of the household, they had limited alternative livelihood options.

The oil spill severely affected the shorelines, shallow waters and mangrove areas where women conducted their fishing activities (Fig. 2). Tidal action deposited oil along the shores, which made these areas not viable for fishing. Gleaning and shallow water fishing completely stopped for several months, leaving women fishers without any income during the period. Fish vending, a female-dominated activity, was also discontinued because of the stigma that fish from the island were contaminated with harmful chemicals.

The oil spill further exacerbated women's marginalised condition because the disruption in their fishing activities was longer. Clean up operations took time because of the large amount of oil to be removed and the preference of authorities for the less environmentally destructive manual clean up method. Thus shallow water fishing and gleaning did not resume immediately unlike capture fishing. The men were able to return to their fishing activity and began to earn a living earlier than women.



Fig. 2. Map of oil spill affected areas in Guimaras. Source: http://www.upv.edu.ph/oilspill/images/wwf_map.jpg.

The effects of the oil spill on women fishers was not only longer and more severe, but their recovery from these impacts was also more difficult. This can be attributed to the male dominated alternative livelihoods in agriculture and forestry that left women fishers with limited options. Thus, it was harder for them to secure work in farms or exploit forest resources. Moreover, women's recovery from disasters can also be seriously hindered by their household responsibilities because these conflict with income-generating work (Enarson 2000). This was also true for the respondents of the study. While men easily migrated to other places to find employment, women's responsibility in the household prevented them from actively seeking alternative sources of income in other towns within or outside of Guimaras.

Economic marginalisation after the oil spill

In response to the disaster, the government carried out relief operations by distributing food, medicines and other basic necessities to address the immediate needs of affected families. Alternative income sources through temporary cash-for-work, including oil spill clean-up and minor construction work were provided to augment family income and prevent food insecurity. Government agencies and NGOs initiated livelihood projects such as community vegetable gardening and food processing. The oil spill affected fishers also received reparation from the International Oil Pollution Compensation Funds (IOPC Funds) for their damaged gears.

The post oil spill economic assistance from various organisations was generally perceived to have delivered benefits to affected families. These benefits however were unequally distributed, with women getting the lesser share. Similar to findings in post disaster reconstruction studies such as those after the 2004 Indian Ocean Tsunami (Akerkar 2008; Chew and Ramdas 2005) and the 2005 Hurricane Katrina (Weber and Mesias 2012), the institutional responses after the oil spill

disregarded gender specific concerns which consequently lessened women's access to economic benefits and worsened their already marginalised condition.

Relief goods for the affected households were each distributed through the head of the family. The manner of distribution is a typical "one size fits all" strategy that out rightly disregarded individual differences and specific needs of men and women.

The problem with channelling assistance intended for the whole family through the household head became more pronounced in the allocation of economic benefits. Since women were not seen as income earners and productive members of the family, their share of the economic benefits was subsumed under that of their husbands. Data from the provincial government show that the oil spill livelihood assistance projects through the traditional allocation method marginalised women. A total of 65 projects (Table 4) for the affected families were implemented at the time of the research; more than half of these (38 or 58.5%) were vegetable production, about 15 or 23% were construction work, 10 or 15.4% clean and green projects and the rest were animal dispersal (1.5%) and food processing (1.5%). Almost all (97%) of the livelihood assistance projects fall under the first three categories.

Table 4. Types and number of projects for oil spill affected families, Guimaras, Philippines, 2008.

Projects	Number	Percentage
Clean & Green	10	15.4
Vegetable Production	38	58.5
Construction	15	23.1
Animal Dispersal (chicken)	1	1.5
Food Processing	1	1.5
Total	65	100.0

Source of data: Province of Guimaras, Iloilo, Philippines.

Gender disaggregated data (Table 5) of beneficiaries from all oil-spill affected communities showed not only economic marginalisation but also gendered division of labour. Notably, there were more male beneficiaries of projects that are considered masculine, e.g. construction work; while women were the major recipients of stereotypically female projects such as food processing. Unfortunately, the male dominated type of livelihoods had the highest number of projects (63 out of 65) implemented. Consequently, more men (64%) than women (36%) benefitted from post oil spill livelihood assistance.

The respondents of the study experienced the same marginalisation particularly in the cashfor-work and compensation of damages. From the 175 households included in the survey, 239 household members were recipients of livelihood assistance, cash for work and damage compensation. The number of male beneficiaries (70%) was also higher than the female beneficiaries (30%).

Project	No. of projects	Male	%	Female	%	Total
Clean & Green Program	7	79	75	26	25	105
Vegetable Prod	24	218	57	166	43	384
Construction	7	105	91	11	9	116
Animal Dispersal	1	2	11	16	89	18
Food Processing	1	7	32	15	68	22
Total	40	411	64	234	36	645

Table 5. Frequency and percentage distribution of male and female beneficiaries of government assistance program by type of project, Guimaras, Philippines, 2008.

Source of data: Province of Guimaras, Iloilo, Philippines.

The cash-for-work program involved manual clean-up operations in the oil spill area. Only affected male fishers were allowed in the cash for work to provide them with temporary employment until fishing resumes. Women, on the other hand were initially not allowed to participate because it was assumed that they could not tackle the labour involved. Excerpts from the FGDs reveal such bias against women.

"Sang primero indi gid man kasulod ang bayi sa first batch sang clean up. Puro lang laki kay mabugat ang ubra. Bug-at bala maghakwat sang mga dalagku nga butang....bug-at na ipahigad ang mga kahoy kag steel... ginapanulod pa na sa sako...ginapala pa ang mga baras" [In the beginning, women were not allowed in the first batch of workers (to participate in the oil spill clean-up), only men because of the heavy workload.....It is heavy to lift big things...it is heavy to put steel and fallen trees on the side...they had to put them in sacks too... the oiled sand had to be removed as well.] - Woman fisher and FGD participant

Table 6. Frequency and percentage distribution of respondent beneficiaries of selected oil spill assistance projects, by project, sex and amount, Guimaras, Philippines, 2008.

Assistance	Male	%	Average amount (USD)	Female	%	Average amount (USD)	Total beneficiaries	Total %
Livelihood	4	33	16	8	67	17	12	100
Compensation	108	75	316	36	25	195	144	100
Cash for work	55	66	136	28	34	106	83	100
Total	167			72			239	

Source: Survey data.

The women however insisted that they be permitted as clean-up workers. Some of them were allowed eventually but only for a limited number of days or as substitute for an absent male family member. Although men and women earned the same daily wage, women had lesser work days due to the discrimination. Thus when total monetary compensation was accounted for over the whole duration of the cash for work program, women received a much lesser amount compared to that received by their male counterparts.

The disparity in the economic benefits received by men and women affected by the oil spill was highest in the compensation for damages (Table 6) because these payments were based on daily fishing income and damaged fishing equipment. Since men earn more than women on a daily basis they also received higher compensation. The inequality was compounded by the difference in the value of fishing assets. Men used fishing gears (e.g. boats and nets) that were more expensive than the simple tools (containers and trowel/digging tool) utilised by women thus they were able to demand higher damage fees. On the average men received USD 316 (PhP 13,272) while women got only USD 195 (PhP 8,190). The disparity in their average compensation amounted to USD 121 (PhP 5,182), a figure that is much higher than average monthly per capita income (USD 68.6 or PhP 2,880) in the province of Guimaras. The inequality extended further to the number of beneficiaries of damage payments, as there were more men (75%) than women (25%) recipients.

Summary, Conclusion and Recommendations

The Solar I oil spill adversely affected the fishing communities of Guimaras but its economic impacts were more pronounced among women than men. Moreover, the post-oil spill institutional interventions for relief and rehabilitation did little to improve the women's situation.

The economic marginalisation suffered by women fishers after the oil spill is traceable to their already economically marginalised situation prior to the oil spill. This manifested in their lack of access and control over productive fishing grounds, lower daily income due to multiple burdens, and subordinate position in the fishery because of the gender division of labour.

The oil spill further worsened the marginalised condition of women because of their highly exposed fishing grounds. The disruption in their fishing activity was also longer due to the tedious manual clean-up operations. Household tasks also prevented them from seeking employment that would have reduced their economic burden. Moreover, the institutional interventions that predominantly preferred men pushed them even further into the margins through the unequal sharing of economic benefits from the projects that largely favoured men.

The results of the study affirm the findings in existing literature that disasters affect women more than men. The study concludes that in a highly gender biased society, the pre-existing biases against women, economic marginalisation in particular, are magnified and intensified during and after disasters due to their more vulnerable situation aggravated by post-disaster institutional interventions that are blatantly inclined towards men.

The research highlights the importance of using a gender perspective in analysing economic impacts of disasters as well as in designing relief and rehabilitation interventions. A participatory gender needs assessment may be useful in addressing the specific concerns of men, women, boys, girls and the elderly for gender fair relief operations. As for post disaster rehabilitation such as livelihood provision, institutions should have a clear understanding of community social norms specially the roles assigned to men and women to avoid the discrimination of any vulnerable group. Moreover, the allocation or distribution of economic benefits to affected communities can be carried out equitably through gender sensitive targeting of beneficiaries. This entails clear analysis

of economic and social gender vulnerabilities or the identification of areas or pathways where gender discrimination is present such as decision-making power, household and community roles, mobility issues, access and control over resources and spheres of economic activity of men and women.

Without the gender lens, the real economic impacts of the oil spill on coastal women's lives would not have been uncovered and understood. Thus valuation of impacts of disasters must incorporate a gender analytical framework to truly account for the true social loss of these disasters.

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