

## GENDERING DISASTER RISK REDUCTION AND RESILIENCE: A CASE STUDY ANALYSIS IN THE AREA SURROUNDING THE MATINA PANGI RIVER, DAVAO CITY

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### ABSTRACT

Disasters disproportionately affect vulnerable populations, particularly women and children, due to their limited access to resources, decision-making power, and physical capacity. This study examines the gendered aspects of disaster risk reduction and resilience in the area surrounding the Matina Pangi River in Davao City. The region's patriarchal system often excludes women and children from development planning and decision-making processes, resulting in their lack of representation in disaster preparedness activities. During a disaster, women and girls often carry the heaviest burden of unpaid care work. Women's triple roles, characterized by reproductive, productive, and community duties, further limit their active participation in community actions. The study utilizes a Participatory Action Research (PAR) approach, conducting key informant interviews with residents who experienced the 2011 Matina Pangi River System flood. Four case studies shed light on the lived experiences of individuals in the area and their perspectives on disaster preparedness and resilience. The findings highlight gender disparities in disaster preparedness training, with activities often tailored for men and youth. Despite being interested in participating, women face challenges due to conflicting schedules with work. The study recommends empowering vulnerable groups, particularly women and children, through targeted disaster preparedness training and capacity building. Policy-makers and local government units should prioritize weekend training sessions for greater participation. Ensuring proper representation and listening to the voices and suggestions of marginalized groups can lead to more effective disaster risk reduction strategies. By empowering and involving the most vulnerable populations, the study emphasizes the potential for preventing unnecessary deaths and fostering a more profound sense of democracy in disaster management.

**Keywords:** Case Study Analysis, Flood Study, Gendering Disaster Risk Reduction and Resilience.

### 1. INTRODUCTION

The amplification of disaster risks stems from human activities that not only fail to mitigate but exacerbate these dangers. Despite attempts to lessen these risks, our actions tend to magnify and intensify the threats we face from disasters (UNDRR, 2022). The Global Assessment Report (GAR) 2022 presents an alarming conclusion highlighting the adverse impact of our present societal, political, and economic decisions. This comes when there's a global dedication to fortifying resilient communities and forging a sustainable future. Despite these efforts, persistent factors like poverty, inequality, and the rapid decline of our ecosystems continue to influence the course of events significantly. Adding to this complex scenario are the challenges posed by climate change, increased global interconnectedness, and the ongoing repercussions of the COVID-19 pandemic. These collective factors pose systemic risks that loom large, threatening to destabilize the entire human system, potentially leading it to collapse. The GAR 2022 places significant emphasis on systemic risk, elucidating how a single disaster event can create a domino effect, sparking a chain reaction of various other disasters within intricate and unpredictable human systems. This new perspective reshapes our understanding of risk; it's not merely the result of hazards and vulnerability but rather a complex interplay of various factors. It shifts the perception of disasters from isolated incidents to being part of a systemic sequence, originating from patterns of maldevelopment and a series of human actions shaped by perceptions and beliefs about disasters.

#### 1.1 Women's in Development Planning

Children and women are often excluded from development planning and decision-making processes, particularly those living below the poverty line (Sen, 1999). This exclusion is primarily a result of the region's traditional patriarchal system, where decision-making has been historically dominated by men. As a consequence, women and children face

limited access to education and resources, severely hampering their involvement in decision-making. This situation aligns with Moser's (2003) arguments, indicating that men are granted a more prominent role in representing households during community development planning in Third World nations due to prevailing gender and development policies. Furthermore, societal norms grant men an advantage over women and children, perpetuating their underrepresentation in decision-making.

In this context, Moser (1993) introduced the concept of Women's Triple Roles, which emphasizes that women are often unable to actively participate in valuable community actions due to the energy- and time-consuming responsibilities they bear, such as reproductive, productive, and community roles. Additionally, women play a vital role in caring for children, and their contribution is crucial for the well-being of the community. Gascon (2017) noted that women tend to wake up earlier and go to bed later than men, highlighting the unequal distribution of labor and responsibilities between genders.

### **1.2 Women's Disaster Preparedness and Resiliency**

Women often experience shorter life expectancies and higher fatalities in natural disasters compared to men, with the gender disparity becoming more pronounced as the severity of the disaster increases (Neumayer, 2007). For instance, in the 2004 Indian Ocean tsunami, men exhibited better survival rates than women, with 14 deaths of women for every man. Although several factors contribute to this inequality, experts believe that cultural rather than biological or physiological causes are predominant, particularly in areas where women have lower financial positions and less authority.

The higher vulnerability of women after major tragedies is not attributed to biological factors but rather to prevailing social, cultural, and gender norms that assume men to be physically stronger than women (Vlassoff, 2007). Consequently, women and girls often have less access to resources and control over critical tools needed to cope with hazardous situations, such as knowledge, education, health, and wealth.

These gender disparities persist not only during emergencies but also in daily life, increasing risks and reducing life chances for women and girls. Thus, addressing the intersection of gender, catastrophe, and development becomes essential in fostering resilience and bringing about lasting change.

In 2011, Davao City experienced a flash flood at approximately 11:00 PM on June 28, triggered by the overflowing of the Matina Pangil River due to heavy rains. The flood impacted five barangays, namely Ma-a, Matina Aplaya, Matina Pangil, Matina Crossing, and Talomo Proper, affecting 13,752 families and resulting in 30 deaths, with one person reported missing. Drowning was the primary cause of death for the victims, and a significant proportion of those who died were women and children between the ages of 4 and 65, with 22 out of the 30 fatalities belonging to this group. The disaster was deemed one of the worst floods in terms of lost lives, prompting the researcher to focus on the women residents living in Matina Riverbanks.

## **2. OBJECTIVES**

This study will look at the study participants residing in the Matina Pangil River System using qualitative methods. Specifically, this will try to achieve the following study objectives:

- 1) To describe the socio-economic profile of the study participants (age, family income, occupation, ethnicity, religion, educational attainment);
- 2) To identify the most pressing issues and concerns confronted by participants;
- 3) To identify a solution to the problem identified by study participants;

## **3. METHODOLOGY**

This study utilized Participatory Action Research (PAR) to identify the most pressing issues in the Matina Pangil River System, related to disaster preparedness and resilience. Key informant interviews were conducted directly with residents who experienced the 2011 flood in the area. PAR is a democratic process that involves learning through action and critical reflection, aiming to address local problems (Ariyadasa, 2014; McIntyre-Mills, 2014).

The researcher engaged with study participants, exploring their understanding of disaster preparedness and resilience. The initial findings presented in this report are based on interviews with four individuals.

The researcher made an effort to closely capture the realities faced by victims of the 2011 flooding by profiling and interviewing only those who lived through the disaster. Furthermore, the study seeks to describe the socio-economic profile of the study participants, providing valuable insights into the community's vulnerabilities and needs.

#### **4. RESULT AND DISCUSSION**

This section presents four case studies based on the lived experiences of people living in the Matina Pangi River System.

Case Study 1 focuses on Imelda, a resident of Barangay Matina Crossing, who chose to rebuild her house near the Matina Pangi River System, despite being considered an informal settler by the barangay. Case Study 2 introduces Paeng, a Barangay Auxiliary Worker (Barangay Tanod), residing in the Barangay of Matina Crossing, who also experienced the flooding in 2011. Case Study 3 explores the experiences of Rosa, an abled youth residing in Barangay Matina Crossing, who was also affected by the flooding in 2011. Lastly, Case Study 4 centers on Richard, a male tricycle driver residing in Matina Pangi, providing insights into his perspective and experiences related to the flooding events.

##### **4.1 Case Study 1 - Imelda**

Despite experiencing the disaster in 2011, Imelda, not her real name, a mother of six who is now a single mother because her husband has already passed away, chose to rebuild her home near the Matina Pangi River System.

She said:

“Kung mo hawa mi diria wala man sad mi kabalhinan, akoang mga anak dria pud sila ga trabaho kay duol ug ma lakaw ra kung kailagan, kung ibalhin mi mangita nasad mig pamaagi okay na dria dili naman pareha dati na taas dyud kung mag baha naa naman sad mga kural run”

translation:

“If we leave this place here, we won't have any place to transfer to. My children also work here because it's close, and they can just walk if necessary. If we relocate, we will look for another way to survive. This place is already fine for now; it's not like before when the water was really high during the flood, and there are now flood protection measures in place.”

The statement above shows the basic concept of what (Chambers, 1997a) presented, the "Deprivation Trap," which can be translated to the "non-ending poverty cycle." Despite the fact that she already experienced the worst flood in terms of lives lost and knew that the area was a flood-prone location, she and her family still chose to stay in the same location.

When the researcher asks Imelda about the question about disaster preparedness and resiliency and are they able to participate the disaster preparedness in the barangay her answer was:

“Akoang na baluhan pag mo taas ang tubig mo sulti ang mga volunteer kung need ba mo balhin na naa man daw na silay color coding level sa tubig, sa mga training.x dili man kaau maka participate kay pang batan on mana ug kasagaran mga lalaki kay mga kusgan.”

translation:

“The knowledge I possess is that in the event of rising water, the volunteers will prompt an evacuation based on the water's color coding level. Those actively engaged in Disaster Risk Reduction and Mitigation training are predominantly young males, selected for their physical strength.”

Imelda said that participating in disaster training is not for her, saying, “pang batan on mana kasagaran mga lalaki kay kusgan,” which translates to “Activities relating to disaster preparedness is often for males and youth because they're stronger.” This statement also correlates to the statement of (Agarwal, 2012) that women's work is non-economic.

##### **4.2 Case Study 2 - Paeng**

Paeng is a male, 36 years old, residing in the same Barangay as Case Study 1 – Imelda. When ask about his experience during the 2011 flooding said:

“Paspas ang panghitabo gabie nangatulog mi kusog ang ulan mga tunga tunga sa gabie ni overflow ang sapa, may nalang layo layo mi gamay dli dyud daplin sa sapa naka mata mi sa tingog sa mga silingan ug dali dali nang gawas after ma safety akoang pamilya ni tabang ko sa mga silingan kay labina tanud ko dria sa amoang barangay, Mahadlok ko pero panan-aw nko sa akoang lawas atu kaya man nako, na training man sad mi atu ginagmay kay mura naman mig responder gud pud as tanud.”

translation:

“The events happened quickly that night while we were sleeping, heavy rain pouring in between and then the river overflowed. We were quite far from the river, but we could hear our neighbors' voices, so we quickly went out after ensuring the safety of my family. I helped my neighbors because I am also a barangay tanod (Barangay Auxiliary)

here in our barangay. I was scared, but I trusted in my capabilities, knowing that I have undergone training, and I can respond as a rescuer if needed."

Despite the risk of drowning, Paeng still chose to help his neighbors during the flooding incident, stating that "Mahadlok ko pero panan-aw nako sa akoang lawas kaya man nako" which translates to "I was scared, but I trusted in my capabilities, knowing that I have undergone training." In addition to that, Paeng said that "Na training man sad mi atu gamay kay mura naman sad mig responder gud pud as tanud" which translates to "Being a Barangay Auxiliary Worker is beneficial for him because he was trained like a responder as well". Both quoted statements show male dominance in the field of disaster preparedness and resiliency, showing that there is really a gender difference in terms of disaster preparedness and resiliency.

#### **4.3 Case Study 3 - Rosa**

Rosa, a woman 27 years old, is a resident of Barangay Matina Crossing. is an abled woman and is still in her youth but already working since she's the only one who graduated college among her siblings. When asked about if she was able to participate at the barangay level or city level in terms of disaster preparedness and resiliency training. She said:

"Na invite man ko atu sa una dria sa amoang barangay kay amoang Sk Chairman nang kuha man tug mga mo tambong kaso katu na time ting duty man gud to nako mao wala ko ni join atu kasagaran man gud sa activity weekdays which is ting trabaho sad nako, pero kung matunong nag weekends or kanang rest day nako pwede kaau ko mo join ana tabang sad na sa ahoa."

translation:

"I was invited before to attend an event in our barangay because our SK Chairman organized it to gather those who is willing to participate. Unfortunately, during that time, it coincided with my work schedule, so I wasn't able to join. Most activities are scheduled on weekdays, which overlaps with my work. However, if it happens on weekends or my rest day, I can definitely join, as it would also be helpful for me."

Rosa said that she is willing to join the activity in fact she is invited to join one training before, as stated in her own words " Kung matunong nag weekends or kanang rest day nako pwede kaau ko mo join." However, she was not able to join because she had to attend work, which is the training activity is scheduled during weekdays; this has been a problem because the local government unit works from Monday to Friday only does the conflict in the schedule will really occur especially to those people who are working.

#### **4.4 Case Study – Richard**

Richard, a male tricycle driver who resides in Barangay Matina Pangil, is one of those people whose income is below the poverty line set by the Philippine Statistics Authority. When asked about his knowledge in terms of disaster preparedness and resiliency and his skills in terms of it, he said:

"Para nko, prepared ba ka in case nay mo abot sakuna dria sa atuang lugar or kung naa bay mga emergency kit na mga dala or andam kung sakali mahitabo na, Kabalo man ko mo langoy kung sakali ug katung 2011 na baha paman nuon ang grabe nabaha nahitabo pero murag labo naman to mo balik kay ni dako dako naman ang sapa ug naa nay mga barrier pero nuon dapat andam."

translation:

"In my opinion, are you prepared in case a disaster occurs in our area or if there are emergency kits available or ready if something happens? I know how to swim just in case, like during the severe flooding in 2011, but it seems uncertain if it will happen again because the river has widened, and there are barriers now. Nevertheless, being prepared is essential."

From the statement of Richard, "Kabalo man ko molangoy kung sakali," which translates to "I know how to swim in case it will come back again (flooding)," although he thinks that it won't come back anytime soon since the Matina Pangil River System has already undergone a widening and already has a barrier. Richard shows that he doesn't have any problem if the flood comes back since he knows he can do something about it, but he doesn't take into consideration the children, women, and elderly who will be affected by the future flooding. It can be seen here that there is a gender difference in terms of disaster preparedness and resiliency.

### **5. CONCLUSION AND RECOMMENDATION**

During a disaster, women and children often carry the heaviest burden of unpaid care work. Disasters pose significant threats to the most vulnerable populations, particularly women and children. Their lack of access to resources, limited decision-making power, and heightened vulnerability to health risks make them disproportionately affected by natural disasters. The study's findings reveal the existence of gender disparities in disaster preparedness and resiliency,

evident in women being left behind in training and capacity building. This is exemplified by Imelda's statement, expressing how training opportunities are often geared towards men and young individuals, leading to a sense of self-doubt among women like herself. For women like Rosa, balancing family responsibilities and work further complicates their participation in disaster preparedness activities, necessitating flexible training schedules such as weekends.

To address these gender disparities and enhance disaster preparedness, the local government units, especially at the barangay level, should empower vulnerable groups, particularly women and children. To facilitate greater participation, policy-makers and local government units should schedule disaster preparedness training sessions on weekends. This will accommodate the conflicting work schedules of women and enable their active involvement in the training activities. It is crucial to address the lack of training and knowledge in disaster preparedness and resiliency among these vulnerable groups, as developing their skills and basic survival instincts will enable them to respond effectively to future disasters. Moreover, it is vital to provide platforms for these marginalized communities to voice their suggestions and concerns to those working at the barangay or city level and even policy-makers. Proper representation and communication are essential for fostering cooperation between different stakeholders. Empowering the most vulnerable individuals with a basic understanding of safety, resiliency, and disaster preparedness can significantly reduce the number of deaths during calamities. It is imperative to foster a culture of active participation and inclusivity, ensuring that each individual is equipped to contribute effectively during future disasters. This research also offers practical insights and policy recommendations to strengthen disaster preparedness efforts within local governance by looking into the problem of underspending the Local Disaster Risk Reduction and Management Fund (LDRRMF) Utilization.

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