HerStory: Facilitating participatory disaster risk assessment to the single mothers of flood-prone sub-urban poor resettlement housing in the Philippines

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Abstract. This article summarizes the major findings of the participatory risk assessment of single mothers of Phase 1k, Kasiglahan Village, Rodriguez, Rizal. Using Participatory Capacities and Vulnerabilities Assessment (PCVA), single mothers gauged their vulnerabilities, capacities and exposure to the hazards in their community. With this, HerStory responds to the challenges of previous studies on disaster risk reduction to have a participatory, inclusive, gender-sensitive and pro-poor perspective in understanding disaster risk. The study was able to provide space and venue to the single mothers to share their own experiences in their own voice.

Keywords: single mothers, flood-prone sub-urban resettlement housing, participatory capacities and vulnerabilities assessment, understanding disaster risk

1. Introduction
This research is a response to the Sendai Framework for Disaster Risk Reduction 2015-2030 of which the Philippines is a signatory country. Particularly, it aims to address Priority 1: Understanding disaster risk. The Sendai Framework recognize the need to look at calamities in the context of interaction between the hazard risk and peoples’ vulnerabilities and capacities.

The Philippines is a country highly vulnerable to disasters due to its physical and geographical characteristics and political and socio-economic situation. Located in the Western Pacific Basin, Pacific Ring of Fire and between the Pacific and Eurasian Tectonic Plates, the country is naturally prone to typhoons, earthquakes, and volcanic eruptions. An average of 20 typhoons occur every year, at least 5 of which are destructive. It also has 300 volcanoes, 22 of which are active.

Filipino people are subject to many vulnerabilities – 65 million out of the 90 million are poor. In 2014, the wage gap was PhP 601, with only PhP 481 as the mandated minimum wage compared to the PhP 1084 cost of living. Six out of 10 Filipinos die without seeing a doctor and only 1 in every 10 students were able to graduate in college [1].

Burdened by these vulnerabilities, women are further marginalized due to the beliefs related to gender. Women and girls are still placed in a subordinate position to men, confining them to domestic and child-rearing roles that limit their opportunities for financial independence.
Compared to 74.8% of men who are employed, only 47.6% of women have jobs. The proportion of unpaid family workers is 8.9% of women compared to 3.9% of men [2]. In a disaster situation, the gender disparity widens. During the emergency response for Super Typhoon Haiyan in 2014, there was a considerable lack of data collection and assessment on gender-based violence and in addressing the specific needs of women from humanitarian aid responders. There was also insufficient coordination with local women’s groups all throughout the response [3].

Marginalized women, specifically single mothers, have been silenced into historicizing their accounts [4]. The scarcity of studies focused on the effect of disasters to single mothers is proof that they were deprived of their rights to present their own narratives and were refused to be afforded with the chance to empower themselves.

This study aims to advance the concept that the unheard and unseen people are able to proactively participate in disaster risk management if given the opportunity. I aim to formally record the contribution of the single mothers of Phase 1k, Kasiglahan Village, Rodriguez, Rizal in the advancement of understanding disaster risk through the Feminist Participatory Action Research utilizing Participatory Capacities and Vulnerability Assessment (PCVA).

The single mother participants are the center of this study as they acted both as subject and researchers of their own lived experiences in facing calamities and disaster risk management. Since the main source of information came from their own analysis, I honor their contribution through the inclusion of their names as co-authors of this study.

2. Understanding Disasters: Community Development Paradigm
Community development is defined as a means of “recognizing and building up peoples’ potentials and capabilities, enabling them to define their direction and participate in the process of change through collective action to ensure their well-being” [5]. For several years, disaster risk studies used the hazard-focused paradigm or the human and social dimension paradigm. While the two have proven effective in addressing specific factors affecting disaster management, it lacks the most important part of addressing vulnerabilities that is the people and communities themselves.

Disaster risk is the result of the interaction between hazards and the peoples’ vulnerabilities and capacities, where DR (Disaster Risk) = (H (Hazard) x V (Vulnerability))/ C (Capacity) [6].

In the Philippines, poverty is seen as the single most important factor contributing to the high vulnerability of people. This is reflected in the structure or location of their houses, for example, in hazard-prone areas like flood plains, steep slopes, around volcanoes and mining areas; access to basic services and their livelihoods [7]. In understanding disaster risk, the community development paradigm gives emphasis on the capacity of the people themselves. The participants are given the space to look at their own experiences of calamities and how they were able to cope with it. This empowers the “people scientist” to critically look at and analyze their own actions.

3. Single Mothers and Disasters
In the Philippines, an estimated 3 million household heads are without a spouse, 2 million of whom are women [8]. Stigma adds to the burden of single mothers in terms of employment and security. While employers will not overtly state that they discriminate against single mothers, it is seen as a red flag as it is assumed that they will have loss of time while at work due to problems with child care [9].

There is also a wide wage gap experienced by men and women. In 2017, the average daily basic pay (ADBP) of women in the agriculture sector is PhP 201 compared to PhP 225 for men. In manufacturing, women’s ADBP is PhP 374 to men’s PhP 406. In the service sector, women only earned PhP 452 compared to men’s PhP 480 [10]. As the sole breadwinner for the family, single mothers feel the wage gap burden more than their married counterparts. Single mothers hardly get financial assistance from the father of their children as the law has discriminatory provisions that favor the men [9].

In seeking help from the police, single mothers become easy targets of discrimination and abuse because of the absence of a husband who can otherwise ‘defend’ them. This is also the case when they seek judicial help as single mothers are subjected to sexist treatment by opposing counsel because of
their status and often easily discredited on the grounds of morality and perceived sexual aggressiveness [9]. Following the disaster risk formula of heightened vulnerability in times of disaster, the situation of single mothers can be further exacerbated when a calamity strikes.

4. Research Methodology and Ethical Consideration

4.1 Research Design and Approach

Feminist Participatory Action Research design encourages the active participation of single mothers in the whole process of the study. Participatory Capacities and Vulnerabilities Assessment (PCVA) was used to systematically collect, analyze and synthesize the single mothers’ narratives in the context of calamities they faced. PCVA workshop sessions were conducted last July 8, 15, 22 and 29, 2018. My primary task was to facilitate the PCVA workshops and guided the participants into coming up with their own analysis of the data they shared.

4.1.1 Selection of Research Participants.

The 12 participants were selected through the help of community leaders and officers of the Homeowners Association based on the following criteria: (a) single mother, (b) aged 18-70 years old, (c) resident of the community for at least 10 years, and (d) willing to attend and participate in all the research sessions. The participants attended a consultation meeting wherein the objectives of the research were given.

4.2 Ethical Consideration

The University of Santo Tomas Graduate School Ethics Committee reviewed the participatory questionnaire tools before the actual workshops began. Informed consent was given by the participants.

5. Participatory Findings and Reflections

5.1 Profile of the Community

Phase 1k Kasiglahan Village in Rodriguez, Rizal is a partner community of the University of Santo Tomas. There are about 737 residential houses with 3239 individuals spread out amongst its 10 blocks. Almost half of the population are unemployed [11]. Those who have jobs are contractual and usually work outside of Rizal – as construction workers, jeepney or taxi drivers and laborers in the neighboring National Capital Region. Within their community, informal jobs such as sari-sari (micro retail) stores, manual laundry service, car repair, beauty parlor and pedicab or tricycle driving is the main source of income. Majority of the residents earn below the average salary of PhP 414.50. The community is located near Wawa Dam which causes massive flooding during half of the year. It is at a high risk of earthquake as it is located on the West Valley Fault Line. In 2009, more than 2000 residents were affected by the massive flooding caused by Typhoon Ketsana.

5.2 Regarding HerStory of Hazards in the Community

Participants relocated in the area as a result of fire, demolition or trash slide in their previous communities.

The following table shows the changes in the situation of the participants through the hazards they experienced, its effects on them and the coping mechanisms they utilized. There is a considerable change in terms of their response to the hazard from evacuation to actively cooperating with each other and seeking to minimize the effect of hazards to their homes.
HerStory of Hazards in the Community

| Year                        | Situation of the Participants                                                                 | Hazards experienced                                                                 | Cause of Hazard                                      | Effect of Hazards   | Community’s Response to Hazard |
|-----------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------|--------------------------------|
| Before 2010 (Before the relocation) | Residing at different urban poor areas in Metro Manila                                        | Every time there is a fire and danger of being demolished and relocated              | Alleged Arson                                       | Anxiety             | Evacuation                      |
| 2010                        | Relocated in the community -no access in basic social services -poor condition of residents -no livelihood | Southwest Monsoon Rains -5 feet flooding                                            | Substandard quality of materials in building houses | Fatigue Anxiety Illness Stress | - Preparing for flood - No choice but to cope up - Helping each other |
| 2011-Present                | Residents formulated their own strategies to earn income such as making dishwashing liquid, rags or putting up micro retail grocery stores. Learned to adjust in the flood situation | Southwest Monsoon Rains (every July-Nov.) -5 feet flooding                         | Substandard quality of materials of houses           | Fatigue Anxiety Illness Stress | - Creation of organization for livelihood and community matters (UNLAD-NAI, Samahang Kamanlalakbay) - Learned to partner with the government officials, academic institutions, civic society groups to help our co-residents - Formulation of early warning system - Investing on materials to strengthen the structural integrity of houses. |
From this, the participants shared their reflections:
1. “From fire prone houses, we were relocated to flood prone and earthquake prone area.”
2. “Poor planning and corruption are the cause of substandard quality of houses.”
3. “Flood disrupts our livelihoods and diseases increase because of this.”
4. “If you are poor, you live in risk with no choice. We want to transfer to another area but we do not have the means.”

In the following table, the different hazards were identified by the participants. Their warning mechanisms range from getting information from media to being able to analyze their surroundings.

| Characteristics of Hazards in the Community |
|--------------------------------------------|
| **Hazard**                  | **Warning mechanisms**                                                                 | **Speed of Onset** | **Frequency**                                      | **Timeframe**                                      | **Duration**                                      |
| Flood, Southwest Monsoon Rains, Typhoon  | a. Weather forecast from TV, radio, or social media                                   | One Hour           | 7-15 times during rainy season                     | Every rainy season                                 | 2-3 hours at it will continue to 3 straight days   |
|                             | b. Announcement of water elevation of Marikina River                                  |                    |                                                    | July- November Most often during August            |                                                  |
|                             | c. When Wawa Dam, Angat Dam and La Mesa Dam simultaneously release their water reserve|                    |                                                    |                                                  |                                                  |
|                             | d. When we notice that insects such as cockroaches and ants are more active and present |                    |                                                    |                                                  |                                                  |
|                             | e. When we saw dark clouds in the sky                                                |                    |                                                    |                                                  |                                                  |
| Dengue Fever                | a. Fever, Headache, Nausea, Rashes persistent for 2-3 days.                            | 2-3 days           | Rainy season and after flooding                   | Southwest Monsoon Rainy season                    | One week                                         |
|                             | b. Presence of stagnant water in the environment                                      |                    |                                                    | Most often during August                           |                                                  |
|                             | c. News of outbreak in the neighborhood                                               |                    |                                                    |                                                  |                                                  |
| Earthquake                  | a. Shaking of the ground                                                              | 1-2 minutes        | Rarely happens, 1-2 times a year                   | Cannot be determined                               | 1-2 minutes                                      |

5.3 Vulnerability and capacity of single mothers
The following table shows the seasonal calendar made by the participants. It is divided into three parts: their household and economic activities as single parents, their hazard experience, and common diseases in the community. The [x] shows which month they engage on a activity or experience a hazard. A capitalized bold x [X] is used for when an activity or hazard is more rampant.
One Whole Year Seasonal Calendar of Participants

| Household and Economic Activities | JAN. | FEB. | MAR | APR | MAY | JUNE | JULY | AUG | SEPT. | OCT. | NOV. | DEC. |
|-----------------------------------|------|------|-----|-----|-----|------|------|-----|-------|------|------|------|
| Cleaning of Houses                | x    | x    | x   | x   | x   | x    | x    | x   | x     | x    | x    | x    |
| Cooking                           | x    | x    | x   | x   | x   | x    | x    | x   | x     | x    | x    | x    |
| Taking care of the children       | x    | x    | x   | x   | x   | x    | x    | x   | x     | x    | x    | x    |
| Shopping in the market            | x    | x    | x   | x   | x   | x    | x    | x   | x     | x    | x    | x    |
| Engaging in different jobs        | x    | x    | x   | x   | x   | x    | x    | x   | x     | x    | x    | x    |
| Many expenses                     | x    | x    | x   | x   | x   | X    | X    | X   | X     | x    | x    | x    |
| Hazard Experience                 |      |      |     |     |     |      |      |     |       | x    | x    | x    |
| Flood, Southwest Monsoon Rains    |      |      |     |     |     |      |      |     |       | x    | x    | x    |
| Evacuation                        | X    | X    | X   | X   | X   | x    | x    | x   |       |      |      |      |
| Preparing for Flood and Typhoon   | x    | x    | x   | x   | x   | X    | X    | X   | x     |      |      |      |
| Cleaning of mud after the flood   | x    | X    | X   | x   | x   |      |      |     |       | x    | x    | x    |
| Repairing of damage houses        | x    | x    | x   | x   | x   |      |      |     |       | x    | x    | x    |
| Common Diseases                   |      |      |     |     |     |      |      |     |       | x    | x    | x    |
| Influenza                         | x    | x    | x   | x   | x   | X    | X    | X   | x     | x    | x    | x    |
| Dengue                            | x    | x    | x   | x   | x   |      |      |     |       | x    | x    | x    |
| Diarrhea                          | x    | x    | x   | x   | x   | X    | X    | X   | x     | x    | x    | x    |
| Leptospirosis                     | x    | x    | x   | x   | x   | X    | X    | X   | x     | x    | x    | x    |
| Hypertension                      | x    | x    | x   | x   | x   | X    | X    | X   | x     | x    | x    | x    |
| Fatigue and Physical Exhaustion   | x    | x    | x   | x   | x   | X    | X    | X   | x     | x    | x    | x    |
| Anxiety and Stress                | x    | x    | x   | x   | x   | X    | X    | X   | x     | x    | x    | x    |

In the following table, the vulnerabilities and capacities of single mothers in the context of disasters are shown. Their unique experience as single mothers facing disasters are tackled as well as their motivations in facing the effects of hazards.

Vulnerabilities and Capacities of Participants

| Category of analysis          | Problems and weaknesses | Cause of problem       | Strength                                      | Cause of strength | Effect of hazards in the self, family, community |
|-------------------------------|-------------------------|------------------------|-----------------------------------------------|-------------------|------------------------------------------------|
| Physical, Mental and Emotional| Persistent body pain    | Many household chores  | Capacity to multi-task                        | Children          | Illness                                        |
|                               | Aging                   | Financial burden       | Self-confidence to face the problem on our own| Faith in God      | Pneumonia                                      |
|                               | Different illness       |                        | Thinking Positive                             |                   | Leptospirosis                                  |
|                               | Easily tired            |                        | Resilience                                    |                   | Fever                                          |
|                               | Stress                  |                        |                                               |                   | Mental Stress                                  |
| Material and Financial        | Inadequate income       | Being a single parent  | Capacity to make creative ways to live.       | Personal Talent,  | House is ruined                                |
|                               |                         | with no                |                                               |                   |                                                |
Motivational and Attitudinal

- People look us down because we are “single parents”
- Some instances we are ridiculed and insulted by different people because of our situation
- Absence of the programs for single mothers in the community
- Absence of organization in the community

Skills and Strategy

- Capacity to be a community leader because we are leaders in our household
- Personal Talent, Skills and Strategy
- Not priority in community planning
- Not priority in the development programs in the community

Participants had this to say about their vulnerabilities and capacities as single mothers, especially during calamities:

1. “We experienced double, triple or quadruple burden because we are the sole provider for our family.”
2. “During rainy season these burdens will be intensified in which will result in a detrimental effect on our physical, psychological and economic well-being.”
3. “We have the skill to multi-task and self-confidence to face problems on our own”
4. “During flood, I became a rescuer of my neighbors, in my mind I can do it”

6. Conclusion

Single mothers are vulnerable to experience disaster risk due to pre-existing conditions such as being the sole provider of resources and care for their children. Lack of financial opportunities that will be enough for their and their families’ needs further increase their vulnerabilities. The stigma they face in the community also adds to the heavy burden that they already bear. When a hazard strikes, their vulnerabilities and responsibilities intensify leading to a detrimental effect on their physical, psychological and economic well-being.

However, as the participants themselves, pointed out, they have the capacity to cope with the hazards such as flooding and other emergencies as they are knowledgeable of the safe spots in their community where they can evacuate. They also know how to listen and analyze to early warning systems. It is important to note that some of the participants are currently leaders and coordinators during community evacuation and rescue operations.

From the words of the participants themselves, they were able to move from marginality to inclusivity through:
Learning from each other: “Through this workshop and our sharing of experiences, I learned that we have different ways and strategies in preparing for disasters. I can apply this to my family and share it with my neighbors.”

Self-awareness about the risk in the community: “Thank you for organizing this because I became more aware of the different issues. As a single mother, this was an opportunity where I was able to share my struggles, dreams and hopes for the future with other women like me.”

Cooperation in times of disaster: “We need to cooperate and help each other because no one else will help us.”

Through this study, we are able to contribute to understanding disaster risk from the point of view of single mothers. It advances the concept of inclusivity, gender sensitivity and participatory approach of vulnerable people to become proactive actors in managing and decreasing disaster risk.

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References
[1] CDRC 2014 Philippine Disaster Situation 2014 Understanding the Root Causes of the Country’s Vulnerability to Disasters
[2] Philippine Statistics Authority 2020 Fact Sheet on Women and Men in the Philippines
[3] International Rescue Committee and Global Women’s Institute 2015 Responding to Typhoon Haiyan: Women and Girls Left Behind. A study on violence against women and girls prevention and mitigation in the response to Typhoon Haiyan London and New York City: IRC and Washington DC: George Washington University
[4] Ileto R C 1998 Pasyon and revolution: popular movements in the Philippines, 1840-1910 Manila Philippines
[5] UST Office for Community Development 2011 Compassion in Action: A Guide to the UST Community Development Program Manila Philippines
[6] Wisner B, Gaillard JC, and Kelman I 2012 Framing Disaster: theories and stories seeking to understand hazards, vulnerability and risk in B. Wisner, J.C. Gaillard & Kelman I (Eds.).The Routledge Handbook of Hazards and Disaster Risk Reduction Routledge London
[7] Abarquez I, Parreño N Review of gender equality in disaster risk reduction and management (DRRM)
[8] Cabato R 2018 The cost of being a single mother in the Philippines
[9] Immigration and Refugee Board of Canada 2017 Philippines: Treatment of unwed and single mothers and their children, including treatment of unwed and single mothers when their children are outside the country (2015-February 2017) Ottawa Canada
[10] Ibon Foundation 2020 Gap Between Men and Women Wages Remains Wide