Women capacity, community resilience and sustainable post disaster reconstruction: case study from Indonesia

Tri Yumarni ^a*

^a Universitas Jenderal Soedirman, Purwokerto, Jawa Tengah, Indonesia

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ABSTRACT

This paper aims to flesh out women capacity for creating community resilience and practices of sustainable post disaster reconstruction in Bantul district Central Java Indonesia. Based on case study, the findings show women grassroots organizations have insight, information, experience, networks and resources vital within earthquake reconstruction as such capacities increasing resilience. During reconstruction women demonstrated their capacity as income-earners, producers and managers of food production, providers of clean water and fuel, and participants in village voluntary labors for maintaining public infrastructures and environments.

Keywords: *women capacity, community resilience, sustainable post disaster reconstruction*

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1. Introduction

Understanding women capacity in the post-disaster reconstruction contexts is important to achieve better process of disaster management and to enhance sustainability of reconstruction and community resilience. However, the potential of women capacity for supporting community resilience and sustainable post disaster reconstruction is rarely explored (Enarson et al. 2009). This study aims to explore women capacities for creating community resilience and practice of sustainable post disaster reconstruction in Bantul district Central Java Indonesia.

2. Theory

2.1. Women capacity and resilience

Resilience means the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions (UNISDR, 2006). It relates to the ability to 'resile from' or 'spring back from' a shock. The resilience of a community in respect to potential hazard events is determined by the degree to which the community has the necessary resources and is capable of organising itself both prior to and during times of need.

Policymakers and practitioners are using the word 'resilience' to talk about the capacities of communities to cope with the shocks and stresses they experience as a result of natural disasters and climate change (UNISDR, 2006). Building community resilience to natural disasters and climate change includes several actions bundled together. They include actions taken both before and after disasters. All the actions are centred around one core idea: improving community capacities to reduce the impacts of disaster and climate change (Chandra, 2011). Resilience is the capacity of a community to organise itself to reduce the impact of disasters by protecting lives, livelihoods, homes, assets, basic services, and infrastructure (Plough, 2013). Capacities include skills, knowledge, resources, practices and networks. Resilience includes the capacities of communities to advance development processes, social networks and institutional partnerships that strengthen the ability of the community including women to cope with and recover from disasters.

Studies have identified that although natural disasters severely affect women they often provide them with a unique opportunity to challenge and change their gendered status in society (Enarson, 2001). Women have proven that they are indispensable when it comes to responding to disasters (Delaney & Shrader, 2000). For example, following hurricane Mitch in 1998, women in Guatemala and Honduras were seen building houses, digging wells and ditches, hauling water and building shelters (Delaney & Shrader, 2000). Though often against men's wishes, women have been willing and able to take an active role in what are traditionally considered male tasks. This can have the effect of

* Corresponding author. Tel.: +62-274-413736; fax: +62-274-413736; e-mail: mba_trie@yahoo.com

changing society's conceptions of women's capabilities. Women are effective at mobilising the community to respond to disasters since they form groups and networks of social actors who work to meet the most pressing needs of the community.

Enarson (1999) describes how grassroots women's in poor communities are working collectively to improve the lives of their families and communities. These women work hard to make sure that their families and communities have food, shelter, water, sanitation and that their livelihoods and homes are secure. Floods, droughts, landslides, volcanic eruptions, hurricanes and earthquakes deepen and worsen the problems poor women experience as a result of their poverty. Thus, any lack of resources resulting from disaster or climate change reduces their ability to fulfil not only their own needs, but also those of their families and the wider community.

2.2. Women capacity and sustainability of post disaster reconstruction

Sen (2000) have highlighted the fundamental role of women on sustainable development. He states, *"Advancing gender equality may be one of the best ways of saving the environment, and countering the dangers of overcrowding and other adversities associated with population pressure. The voice of women is critically important for the world's future - not just for women's future."* Accordingly, sustainable development is development, which meets the needs of the present without compromising the ability of future generations to meet their own needs (United Nation, 1987). It therefore encapsulates the needs of both women and men. Intra-generational equity cannot be achieved without addressing the gender relations, which underlie prevailing inequity. Nor can inter-generational equity be obtained, or responsibility to pass on a more equitable world to future generations be met, if inequalities continue to be perpetuated. Without serious steps to address gender inequalities sustainable development cannot be achieved.

Gender and built environment studies also highlight that women capacity is one important aspect that should be considered to enhance the sustainability of post disaster reconstruction (Childs, 2006; Delaney & Shrader, 2000). The study of UN-HABITAT (2007) found that when women are empowered, they have the capacity and the inner will to improve their situation and gain control over their own lives and families. This capacity can lead to an equal share in economic and political decision making, and control of economic resources which reduces their vulnerability in disaster situations.

Accordingly, integrating gender equality into post-disaster reconstruction practices makes the reconstruction efforts not only provide opportunities for women to make their decision but also develops their capacities to take up the responsibilities regarding what is better for the present and future of community development (Delaney & Shrader, 2000). This integration is strongly linked with the agenda of sustainable development, which is to promote women and men's role in solving environmental issues and to achieve sustainable development and a higher quality of life for all people (United Nation, 1987). Accordingly, this study aims to identify women capacities and their roles for creating community resilience and practices of sustainable post disaster reconstruction.

3. Case study

The case of post-earthquake reconstruction at Bantul district Central Java is interesting to explore women capacities, community resilience and sustainability of post-disaster reconstruction. Case study was designed to explore women capacities for creating community resilience and practice of sustainable post disaster reconstruction in the district. Primary data was collected through in-depth interviews of policy makers and beneficiaries who dealt with and had knowledge of Bantul earthquake reconstruction. Besides, the representatives of international and local NGOs whose programmes were related to the earthquake reconstruction were also interviewed. Beneficiaries' interviews were conducted separately between women and men in order to avoid male bias as well as to reveal women voices. The case study involves an in-depth interview with 40 respondents, and an additional ten respondents for the verification. This research adapts the grounded theory approach in the analysis of the data

4. Findings

Earthquake is one of most hazardous disaster in Indonesia. The 2006 Yogyakarta earthquake for example destroyed severely most of districts in this province. In less than a minute, the tremor with measuring 5.9 on the Richter scale, killed thousands of inhabitants, destroyed many houses and public infrastructures. Bantul district that located in the centre of Yogyakarta province was the most destroyed area. The powerful earthquake in Bantul left 4,659 people died and around 50,000 injured. The total amount of damage and loss was estimated at US\$3.1 billion. Small and medium scale enterprises, especially in the area's important handicrafts sector, were severely affected. Many of these were home-based industries, and hence the damage to houses had a corresponding impact on economic livelihoods. An estimated 1.3 million workers who are majority women were employed in sectors affected by the earthquake, particularly in the ceramics, furniture, textiles and weaving, silver and leather manufacturing, and food processing industries.

Women are places at the most vulnerable group during Bantul earthquake. They were overrepresented among the 2,456 killed and 35,000 injured (60% of total victims). Limited knowledge about disaster management in the Bantul district contributed to the large number of victims. However, not only did the government lack skills and expertise when dealing with the crisis, the community itself had to face the unexpected and worst situation because they did not know what to do in an emergency. The vulnerability of women was increased soon following the damage of houses and many public infrastructures. The housing sector suffered the most severe damage and loss of any sectors. In total, 77,917 houses were destroyed with badly damaged 71,372 houses and light damaged 6,545 houses. In addition to the damage and loss in the housing sector, the impact in public and private infrastructure was estimated at 397 billion and 153.8 billion rupiah respectively (Bantul Bureau of Statistics, 2006). Large-scale damage to houses and public infrastructures is associated with a lack of adherence to safe building standards and basic earthquake resistant construction methods. Most of the private homes used low-quality building materials, lacked essential structural frames and reinforcing pillars, and collapsed easily because of lateral shaking movements. The poor are the least able to afford building safe houses and many of their homes were damaged. Many public buildings also collapsed due to poor building standards, in particular schools and hospitals. Without

proper houses and limited access to public services, women's survival was threatened. Statistics show that women and children mortality rate in Bantul district one year after disaster was increased by 11 per cent (Bantul Bureau of Statistics, 2006).

4.1. Women community resilience

Bantul district one year after disaster was increased by 11 per cent (Bantul Bureau of Statistics, 2006...Despite women were the most vulnerable groups, their capacity were vital for strengthening community resilience during post-earthquake reconstruction in Bantul. Women capacities into community resilience were shown from their coping abilities, knowledge, skills and collective contribution during reconstruction. The roles of women were shown on three cores of community resilience: First, organisation (i.e. organisations, platforms and constituencies of grassroots women and communities). Second, skill, knowledge, and capacities (i.e. consolidating and transferring knowledge and practices that enable grassroots women to minimize losses and rapidly recover from disasters). Third, engaging institutional actors such as government and local authorities (i.e. engaging and influencing decision makers to ensure coordination between institutions and communities along with responsive, accountable institutional arrangements).

Women have active roles in mobilising and organising disaster management committees. For example, women grassroots organisation have actively involved in monitoring and evaluating reconstruction. Bantul's reconstruction has a different approach in terms of the ways of housing contracting out in which every single household head are a contractor for their own home. As Bantul's policy maker explains the following: *"Bantul's reconstruction is a community driven approach and differs from approaches in which contractors are hired to do the rebuilding. For example, say we were building 15,000 houses. One option would be to get 15 contractors and for each of them to build 1,000 houses. In that case, there would be 15 contractors as active participants of reconstruction and 15,000 passive beneficiaries. In our approach that is not the way to do it. The best thing is to have 15,000 people, each one of them working on their own home"* (Interview with policy maker). With this approach, women and men in the communities were equally involved in procurement and quality control as well as supervision of the construction. Beneficiary satisfaction with the approach is high since they could provide inputs and make changes in the design of the house.

During reconstruction, women used their skills and knowledge to minimize losses and rapidly recover from disaster. For example, women grassroots have actively involved in mapping disaster risk in their communities by identifying the most vulnerable groups. They used their local knowledge to identify and to prioritize target groups for government funding. Using traditional and modern communication system, they initiated early warning and communication systems to protect community members from future earthquake. Bantul women grassroots organisation helps community to recover rapidly from earthquake. For example, they were actively involved in income restoration program, rice retailing, and restoring livelihoods assets, machines, and equipment. Even, in some villages women supports to repair and to construct roads, improving public transportation, create bridge to reach isolated communities. Numerous village women worked in construction: sifting sand, mixing cement, ensuring the right proportions of sand and

cement, and supervising the masons to make sure that they were incorporating earthquake-safe features in the construction.

Women grassroots organisation also engaged with local policy makers within post-disaster reconstruction process. Women organised their work into several committees. First, a water committee responsible for ensuring that water is available for construction-arranging both access and transport to site. Second, a purchasing committee that is responsible for checking the prices and quality of construction materials before buying them. Third, a materials committee that is responsible for keeping records of the materials coming in and the amount used, and for informing the purchasing committee when more materials are needed. Fourth, an accounts committee that is responsible for recording the amounts spent daily on construction, literally tracking every expense from the day the foundation is excavated to the day the walls are painted. Fifth, a supervisory committee that is responsible for the overseeing construction and ensures that masons use appropriate, earthquake safe building techniques. These committees cooperate with local government in accessing local development budgets for sanitation, housing, infrastructure to fund reconstruction. Moreover, they were also active in monitoring program and reducing corruption by ensuring accountability and transparency within reconstruction process.

4.2. Women and sustainable post disaster reconstruction

Post disaster reconstruction can be seen as an opportunity to channel investments to upgrade the living standards of the poor, to enable the most marginalised to participate, and to establish dialogue mechanisms between affected citizens and government to foster accountability. It is a chance to "build back better" and apply principles of sustainable development and hazard reduction to communities and regions that are likely to remain at high risk of future disasters.

None of the three dimensions of sustainable development can be achieved without long-term investments in economic, social and environmental capital. In Bantul, reconstruction of housing, water and sanitation were not only creating healthy environments of affected communities but also protect land and its ecosystem from disasters in the future. Women grassroots include women voluntary labour organisations, women credit and saving associations, and women family welfare groups have vital roles in achieving sustainable post-disaster reconstruction through their capacity in improving environmental, social and economic sustainability.

Women capacity for supporting environmental sustainability was shown from several activities: sustainable farming and food production, friendly housing environment, waste management and recycle, and healthy environment. In agricultural sector, women have promoted to use organic farming and food production rather than modern farming using pesticide. Organic agricultural products (i.e. organic rice, fruits, and vegetables) have become an iconic product of Bantul district since reconstruction. Women roles in creating friendly housing environment were shown across villages. They plants green trees along villages roads and garden. Women grassroots across communities build *TOGA (Tanaman obat keluarga)* groups, which is purposed to protect and to plan indigenous herbs and medical plantation around the houses. Debris and savage management were another issue in which women groups involved to solve it through creative waste recycle contribution (i.e. rubbish bank arcade, vertical garden from soda bootless, and handicrafts). Women were also actively involved within village

voluntary labor or *kerja bakti* and *kampong* improvement program, which aims to create and to maintain healthy and clean community environment across villages in Bantul.

With regard to economic sustainability, women role at improving well-being is vital given the increasing of women poverty following earthquake. Generating income to support their families was a priority for most of the women in Bantul. However, to start their own business most of them did not have enough funding. Therefore, women grassroots organisation initiates to build Rotating and Saving Credit Association (ROSCAs) where each member can access funding. In some villages ROSCAs have enlarge their activities as an income generator. As an women activist explains the following: "*Not only do we save money by circulating low-interest loans but also we have started making and selling products such foods and drinks with the money that we have saved. The profits from the sales go back to our savings group. So it gives us both an income and great empowerment (Interview with a women activist).*" Micro, small and medium enterprises affected by the earthquake are assisted through access to finance combined with technical assistance. Gender inclusiveness is strongly embedded in this program. As reported, 57 percent of borrowers and 44 percent of beneficiaries receiving technical assistance are women, exceeding the target of at least 30 percent participation of women. Targets under the access to finance component have been achieved with 10,056 loans disbursed to micro, small and medium enterprises by 2011. Loans amounting to US 5 million have been disbursed to 26 microfinance institutions with majority were managed by women grassroots organisation.

Social sustainability emphasises that reconstruction activities should recognise the extent to which social values and identities, relationships and social institutions of affected regions can be maintained and adapt to future disasters. Women roles in creating social sustainability in Bantul were shown from their activities in creating community safety and security, strengthening community social capital, access to public services, and improve village decision making. Women groups working together with community members, district government and International donors during implementation. The Javanese cultural tradition of *gotong royong* - working collectively for the common good of the community - provided fertile ground for Bantul's community-driven approach. In times of need, people readily help each other and lend a hand in the spirit of cooperation. Neighbours work together and neighbouring villages and communities come to each other's assistance in rebuilding their home and business. Vulnerable women, children and elderly people are always prioritised first during program implementation. The spirit of *gotong royong* is well suited to a community-based approach; it helped communities in Bantul work together and pick up the pieces after the disaster. The survivors showed great resilience and community spirit. In the aftermath of the disasters, communities across Bantul's village supported each other in rebuilding their lives and their communities to be more secure and safer.

5. Discussion and conclusion

Women are more vulnerable to the effects of natural disaster than men-primarily as they constitute the majority of the world's poor and are more dependent for their livelihood on natural resources that are threatened by disaster (Enarson et al., 2003). Furthermore, they face social, economic and political barriers that limit their coping capacity. Women and men in rural areas in

developing countries are especially vulnerable when they are highly dependent on local natural resources for their livelihood. Those charged with the responsibility to secure water, food and fuel for cooking and heating face the greatest challenges. Secondly, when coupled with unequal access to resources and to decision-making processes, limited mobility places women in a position where they are disproportionately affected by natural disaster (Delaney & Shrader, 2000; Ariyabandu & Wickramasinghe, 2003). It is thus important to identify gender-sensitive strategies to respond to the environmental and humanitarian crises caused by natural disaster.

It is important to remember, however, that women are not only vulnerable to natural disaster but they are also effective actors or agents of change in relation to both mitigation and adaptation. Women often have indigenous skills, knowledge and expertise that can be used to create community resilience and sustainable post disaster reconstruction strategies. Furthermore, women's responsibilities in households and communities, as stewards of natural and household resources, positions them well to contribute to livelihood strategies adapted to changing environmental realities. This study shows that women grassroots in Bantul district have insight, information, experience, networks and resources vital within earthquake reconstruction as such capacities increasing resilience. During reconstruction women demonstrated their capacity as income-earners, producers and managers of food production, providers of clean water and fuel, and participants in village voluntary labours for maintaining sustainability of reconstruction outcomes and building back better community.

In sum, this study highlights that disaster reconstruction initiatives must be inclusive and equitable; that the economic needs and resources of both women and men must be anticipated by policy makers and addressed proactively, and that reconstruction must foster conditions empowering women rather than undermining their capacities and increasing their vulnerability to subsequent disasters.

References

- Ariyabandu, M.M. and Wickramasinghe, M. (2003) *Gender dimensions in disaster management*. Colombo: ITDG South Asia Publication.
- United Nation Brundtland Commission (1987). *Report of the World Commission on Environment and Development*. United Nations.
- Childs, M. (2006) Not through women's eyes: photo-essays and the construction of a gendered tsunami disaster. *Disaster Prevention and Management*. 15 (1). pp. 202-212.
- Enarson, E. (2000) *Gender and Natural disasters*. September 2000. Geneva: International Labour Organisation
- Enarson, E & Chakrabarti, PGD, 2009. *Women, Gender and Disaster*. Sage Publication, India.
- Delaney, P.L. and Shrader, E. (2000) Gender and Post-Disaster Reconstruction: The case of Hurricane Mitch in Honduras and Nicaragua. *Report prepared for the World Bank*.
- Sen, Amartya. 2000. "Population and Gender Equity." *The Nation* (July 24/31): 16-18.
- UNISDR, (2006), *Guidelines for Gender Sensitive Disaster Management*
- Yonder, A., S. Akcar, and P. Gopalan, (2005), *Women's Participation in Disaster Relief and Recovery*, Seeds Pamphlet of Population Council, Number 22, New York.