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## **Happiness Behind The Threat of Disaster: Women in The South Merapi Slope**

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### **Abstract**

The study was conducted with the aim of studying the happiness of women in the slopes of south Merapi in the threat of Merapi disaster. Descriptive research, the theme of geography of human environment interaction with the subject of research of women who live and have socio-economic activities in the District Cangkringan. Population are women married living in the study area. Samples were taken purposively as many as 33 respondents. Research variables socio-economic and female demographics and characteristics of happiness and threat of disaster. Quantitative descriptive data analysis used frequency tables to analyze sociodemograph, happiness women and threat of disaster. Analysis of qualitative data in reduction, presentation and verification. The results showed that women in South Merapi Slope who have socio-economic activities in Cangkringan sub-district understand that their residence area is vulnerable to disaster threat. Merapi disaster can threaten the women of the slopes of south Merapi every time but they believe, that Merapi remains friendly with the people on the slopes. The result of eruptions in the form of hot lava and rain lava, will be a blessing source of income and make their territory remains fertile so that their farm has a good prospect. Merapi has been a blessing not as a

disaster, so living in harmony with Merapi can support the happiness of women in the slopes of south Merapi.

[Penelitian ditujukan mengkaji kebahagiaan wanita di lereng Merapi selatan diantara ancaman bencana Merapi. Penelitian deskriptif, tema geografi interaksi lingkungan hidup manusia dengan subjek penelitian wanita yang tinggal dan memiliki kegiatan sosial ekonomi di Kecamatan Cangkringan. Populasi penelitian perempuan yang tinggal di daerah penelitian. Sampel diambil secara purposif sebanyak 33 responden. Variabel penelitian sosio-ekonomi dan demografi perempuan dan karakteristik kebahagiaan dan ancaman bencana. Analisis data deskriptif kuantitatif menggunakan tabel frekuensi untuk menganalisis sosio-demografi, kebahagiaan wanita dan ancaman bencana. Analisis data kualitatif dengan reduksi, presentasi dan verifikasi. Hasil penelitian menunjukkan bahwa perempuan di lereng Merapi Selatan yang memiliki kegiatan sosio-ekonomi di Kecamatan Cangkringan memahami bahwa daerah tempat tinggal mereka rentan terhadap ancaman bencana. Bencana Merapi dapat mengancam para perempuan di lereng Merapi selatan setiap kali tetapi mereka percaya, bahwa Merapi tetap ramah dengan orang-orang di lereng. Hasil letusan dalam bentuk lahar panas dan lava hujan, akan menjadi sumber pendapatan berkat dan membuat wilayah mereka tetap subur, sehingga pertanian mereka memiliki prospek yang baik. Merapi telah menjadi berkah bukan sebagai bencana, sehingga hidup selaras dengan Merapi dapat mendukung kebahagiaan perempuan di lereng Merapi selatan.]

**Keywords:** women of merapi slope; happiness; disaster

## Introduction

Disaster has become a threat to human survival in the earth from the threat of floods, landslides, droughts, earthquakes, volcanic eruptions, extreme weather, and social disaster. Indonesia has 130 active volcanoes and Merapi including the most active volcano that has an effusive (not explosive) eruption type almost continuously and explosively every four years. The recent eruption of Merapi volcano was in October and November 2010 which killed 339 people.<sup>1</sup> Merapi has crowded slopes, including women and children as vulnerable communities. Central

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<sup>1</sup> Tuswadi, and Hayashi, Takehero. "Disaster Prevention Education in Merapi Volcano Area Primary Schools: Focusing on Student Perception and Teachers Performance." in *Procedia Environment Sciences* 20 (2014): 668-67.

Bureau of Statistics (BPS) reported based on data of Susenas 2014 and 2015, the population of Indonesia reached 254.9 million people. BPS data shows the male population reached 128.1 million while women as much as 126.8 million people.<sup>2</sup>

Women of the slopes of south Merapi realize that their daily lives are on active volcanic slopes, when Merapi is erupting can threaten them and their families. Women as part of society Merapi slopes are also involved in rituals such as *labuhan* or alms Merapi performed periodically from generation to generation, women are generally involved in providing ritual equipment. Cultural ritual is believed to be an action to keep the community from the threat of disaster and improve environmental conditions on the slopes of Merapi. South Slope Merapi people believe, recognize the character of Merapi well, although Merapi as active volcanic dangerous, then the balance and harmony between Merapi with the community is well preserved.

The people of the slopes of south Merapi have sufficient experience on adapting to disaster risks due to Merapi eruption, making them better prepared for the disaster and trying to complement their knowledge of disaster risk reduction. Different demographic and socio-economic groups have different levels of resilience. In addition to living in highly degraded areas, groups with livelihoods in agriculture and those with better education have higher resilience. Sex has no effect on survival, but men have a better knowledge of disaster risk reduction than women. Age also has a negative effect on the level of.<sup>3</sup>

The slope of south Merapi is a densely populated area even though it is included in the Disaster Risk Area. People consider Merapi as a blessing because post-eruption they have many advantages, especially the use of sand and stone from the eruption as a source of income, in addition to their agricultural land become fertile by volcanic

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<sup>2</sup> Biro Pusat Statistik, *Indeks Kebahagiaan di Indonesia* (Jakarta: BPS, 2015).

<sup>3</sup> Dani Alfah et al., "Demographic Differentials in Vulnerability and Resilience in a Disaster-prone Community: Evidence from the Longitudinal Study of Merapi 2012 (SurveyMeter)," in *The IUSSP Conference on Demographic Differential Vulnerability to Natural Disasters in the Context of Climate Change Adaptation* (2014), <https://activities.iussp.org/colloquedownload.php?filename=1814.pdf>

ash. The Community of South Merapi Slope after the disaster made a rehabilitation and reconstruction effort to restore all aspects affected by eruption of Mount Merapi. Merapi when eruption caused various disasters for the people especially the location of the settlement is very close to the peak of Mount Merapi and along the river flow where the lava from Mount Merapi.

Merapi for people who live of Merapi slope is a place to rely their lives based on what is provided by Merapi. They live side by side with high risks from the danger of Merapi and live from available natural resources, such as water, sand, rocks, grass, and wood from the forest. Local belief, the arrival of Merapi danger is not sudden (usually begins with natural signs). Livelihood source of the slopes of Mount Merapi feel the adequacy of “Merapi blessing”. This factor affects the perception of the population of Merapi slope in attitude to danger of Mount Merapi.<sup>4</sup> Characteristics of Merapi and Merapi slopes community is quite unique, Merapi as active volcanic dangerous not as a threat to the life of the people of Merapi Slope. The community of Merapi Slope still carry out routine activities without worry when the normal Merapi active. This condition makes the residents of Mount Merapi South still feel the happiness even though the threat of danger of eruption can occur at any time.

The happiness index includes the conditions of income and welfare, employment and income, as well as control of the home, then health status, work and life balance, education and skills, obligations as citizens and government, social interrelation, environmental quality, self-security, and happiness. The happiness index is a composite index measured weightedly and includes individual satisfaction indicators of the ten essential domains / variables. The domains / variables that substantially and together reflect the level of individual happiness include: (1) occupation, (2) household income, (3) housing and asset conditions, (4) education, (5) health, (6) harmony family, (7) social

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<sup>4</sup> Michael R. Dove, “Perception of volcanic eruption as agent of change on Merapi volcano, Central Java,” *Journal of Vulcanology and Geothermal Research*, no.172 (2008): 329–337. <https://www.elsevier.com/locate/jvolgeores>

relations, (8) leisure time availability, (9) environmental conditions, and (10) security conditions.<sup>5</sup>

Yogyakarta Special Region (DIY) as the province with the highest gini ratio in Indonesia, with the percentage reaching 0.43 percent. This figure exceeds the value of the national gini ratio, which is 0.393.<sup>6</sup> Gini ratio describes the level of economic inequality of society, as measured by population expenditure, despite having the highest economic inequality in the country, DIY is the region with the highest happiness index in Java is at 72.93 percent. The unique characteristics of DIY population attracted many researchers to this study.

The study was conducted by looking at the problems of DIY residents who live in the slopes of south Merapi with the threat of disasters that occur periodically but the area has a significant population density. Merapi as the most active mountain in Java is located in the northern part of DIY in an area bordering directly with Central Java. The southern slope of Merapi is included in the area of one of the districts in Yogyakarta Special Region having high population density. People on the slopes of Merapi are faced with the threat of eruption disaster that can happen at any time. Based on these facts it is interesting to study about the happiness of women of Merapi slopes between the threat of disaster considering the slopes of Merapi as part of the region that has the highest happiness rate in Java even in Indonesia.

## **Methods**

Population is women who have married and reside in the research area. Samples taken by purposive sampling as much as 33 respondents. The research variables include socioeconomic as well as female demography on the slopes of south Merapi and the characteristics of happiness and disaster threats. Primary data in the form of sociodemographic characteristics of women and the characteristic of Merapi eruption disaster threat. Secondary data in the form of information and data related to research obtained from related institutions. The primary data collection in the form of quantitative and

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<sup>5</sup> Biro Pusat Statistik, *Indeks Kebahagiaan di Indonesia* (Jakarta: BPS, 2015)

<sup>6</sup> Ibid.

qualitative data is divided into two stages: primary data collection to obtain quantitative data and primary data collection to obtain qualitative data with the understanding that the distinction is not done exclusive, quantitative and qualitative.<sup>7</sup> Analysis of research data is divided into quantitative data analysis and qualitative data. Quantitative descriptive data analysis is used to analyze primary data and secondary data related to female sociodemographic variables. Analysis of qualitative data in accordance with Miles and Huberman is done with data reduction measures, presentation and verification.<sup>8</sup>

### Research Area

The research was conducted in Glagahmalang, Glagahardjo, Cangkringan, Sleman DIY (see Research Location Map). Hamlet Glagahmalang more than half the hamlets covered in volcanic lava when Merapi eruption occurred November 2010. Type of soil in Glagahmalang is regosol, andosol, alluvial and litosol, with climate type in this region is type C according to the classification of rainfall Schmidt and Ferguson.<sup>9</sup> So despite the extensive monitoring systems and associated emergency plans at Mt Merapi, the local residents paid little attention to the official warnings, and refused to come down the volcano. These actions made any volcanologists monitoring role redundant, as it seemed no matter how bad the situation became, local people were not prepared to respond to scientific-based warnings and evacuate.<sup>10</sup>

Glagahmalang including buffer zone, the water that is located and flowing in the area not only for people in Merapi Slope, but for people in Yogyakarta and surrounding areas. Glagahmalang is part of the Merapi region, has biodiversity that became a biological richness used for various purposes by Yogyakarta and its surroundings to a wider society.

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<sup>7</sup> Earl R. Babbie, *The Practice of Social Research* (USA: Thomson Higher Education Corporation, 2007).

<sup>8</sup> M.B. Milles and M.A. Huberman, *Qualitative Data Analysis* (London: Sage Publication, 1984).

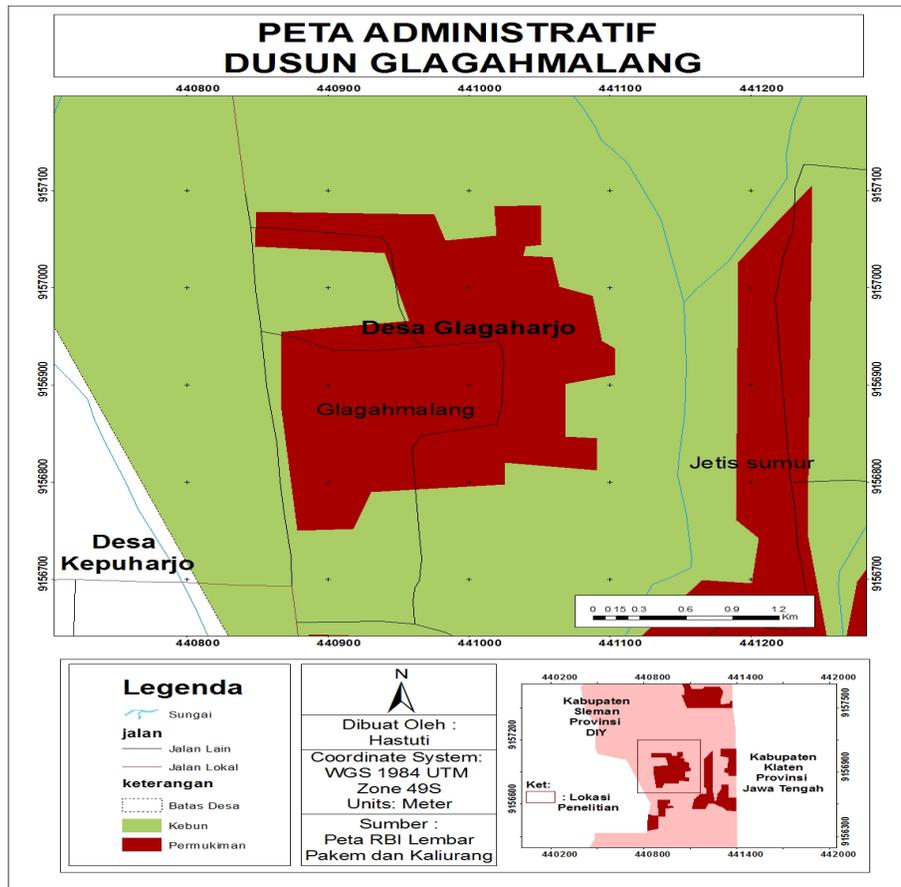
<sup>9</sup> Sutikno Bronto, "Fasies Gunung Api dan Aplikasinya," *Jurnal Geologi Indonesia* 1, no. 2 (2006): 59-71.

<sup>10</sup> Katherine Donovan. "Doing social volcanology: exploring volcanic culture in Indonesia," *Area* 42, no. 1 (2010): 117-126.

Currently Glagahmalang Hamlet residents occupy Glagahmalang permanent dwelling with socio-economic life almost the same as before eruption in 2010. They have a source of income from doing farming, raising, trading, taking sand and stone to meet the needs of the household. Women have carried out routine work on domestic duties and helped conduct productive activities to earn household income. Community social activities are carried out by women in order to maintain their relationships between neighborhoods, village level, and sub-district level. Women conduct interrelation with relatives, attend events, and perform cultural or religious rituals. In the context of the above stated issues, it can be said that the authority and the implementing agency must ensure women's participation in every planning and developmental programs.<sup>11</sup> The activity of delivering school children in the morning and going to the market for household needs is a routine activity of women in Glagahmalang Slope of South Merapi. Women Slopes of South Merapi have the dynamics of domestic and public activities both productive and socially societal.

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<sup>11</sup> Rabiul Islam, "Vulnerability and Coping Strategies of Women in Disaster: A Study on Coastal Areas of Bangladesh," *The Arts Faculty Journal* (2011).



## Results and Discussion

The inclusion of scientific signs has also excluded the eruption from the internal space of local peoples semiosphere, whereby the eruption is considered as an incomprehensible and unpredictable natural phenomenon. On the one hand such inclusions reduce the vulnerability of local people to the natural hazard from their environment, but on the other hand it opens the communities to possible new vulnerabilities like economic crises, political conflicts, governmental failures, and other

vulnerabilities that come from the external spaces of semiosphere.<sup>12</sup> The Women of the Slopes of Merapi have an appropriate level of happiness as indicated in Table 1, covering health, courses and skills, fun and entertainment, environment and security, housing and assets, and life satisfaction including sociodemography ie education, livelihood, and income.

**Table. 1. Happiness and Socioeconomic Women of the Slopes of South Merapi**

No	Happiness and Socio-economic Women of the Slopes of South Merapi	f	%
1	2	3	4
	<b>Health Women Slope of South Merapi</b>		
1.	Experiencing Eye Disorders	2	6.06
2.	Experiencing Disturbance of Breeding	1	3.03
3.	Experiencing Ear Disorders	1	3.03
4.	Experiencing Muscle / Bone	4	12.12
5.	Experiencing Throat Disease	1	3.03
6.	Have other Health Complaints	7	21.21
7.	Health insurance	33	100
	<b>Education</b>		
1.	Graduated Elementary School	3	9.09
2.	Graduated from Junior High School	15	45.45
3.	Graduated from Senior High School	14	42.42
4.	Ever Lecturing in Higher Education	1	3.03
	<b>Courses And Skills</b>		
1.	Courses cooking, sewing, dressing	15	45.45

<sup>12</sup> Muzayin Nazaruddin, “*Natural Hazard and Semiotic Changes on the Slope of Mt. Merapi, Indonesia*” (Master’s Thesis, Department of Semiotics, Faculty of Philosophy, University of Tartu, 2013).

2.	Following the Disaster Course	33	100
3.	Following Entrepreneurship	11	33.33
4.	Etc	5	15.15
	<b>Fun and Entertainment</b>		
1.	Attend / Watch Music Concert / Stage Music Entertainment	7	21.21
2.	Watching Puppet / Folk Art / regional Art	33	100
3.	Doing Recreation	5	15.15
4.	Has Spare Time Availability	33	100
	<b>Livelihood Women</b>		
1.	Farmers (Crop and Livestocks)	17	51.5
2.	Private employee / country	1	3.03
3.	Take sand and rock	9	27.27
4.	Merchants	4	12.12
5.	The other work	2	6.06
	<b>Women Income</b>		
1.	Less 1,000,000 rupiah	7	21.21
2.	1,000,000 – 2,000,000 rupiah	19	57.57
3.	More 2,000,000 rupiah	7	21.21
	<b>Environment And Security</b>		
1.	Availability of Soil Water and Clean Water	33	100
2.	Availability of Good Sanitation	33	100
3.	There are Disaster and Environmental threats	33	100
	<b>Housing And Assets</b>		
1.	Mastering the Land of the Yard	33	100
2.	Mastering the Land of Rice Fields	33	100
3.	Mastering the Moor	33	100
4.	Mastering Livestock	33	100

5.	Mastering Jewelry / Valuables	33	100
6.	Mastering Motor Vehicles	33	100
7.	Mastering Savings / Deposits	33	100
8.	Have Old Age Guarantee	33	100
	<b>Life Satisfaction</b>		
1.	Has Relations With Relatives	33	100
2.	Have Relations With Neighbors	33	100
3.	Have Relationships With Friends	33	100
4.	Implement Rights and Obligations As Residents	33	100
5.	Implement Rights and Obligations as Villagers / District / Nations	33	100

Source: Primary Data 2017

The empirical results indicate a significant happiness effect of earthquake, tsunami and nuclear accident comparable to the distance with the Fukushima site equivalent to 72 percent of annual household income.<sup>13</sup> The happiness of women in the slopes of south Merapi can be seen from health, ie the percentage with eye, ear, muscle and bone disorders, throat and other health complaints is relatively small. Good health conditions make women slopes of Merapi Selatan experience happiness. Women of the slopes of south Merapi all have health insurance that can be utilized when experiencing health problems.

Women's education 97.87 percent graduated from junior and senior high schools, only a few graduated from primary school and never attended university and did not meet women. The courses and skills by women on the slopes of Merapi Selatan are relatively good 45.45 percent more have attended courses related to their domestic duties as women, and even all women participate in disaster-related courses and skills and one-third of women have attended entrepreneurship courses. What public

<sup>13</sup> Katrin Rehdanz, et al., "Well-being effects of a major negative externality: The case of Fukushima," in *Oldenburg Discussion Papers in Economics V-358-13* (Oldenburg: Institut für Volkswirtschaftslehre, Universität Oldenburg, 2013), <https://www.econstor.eu/handle/10419/105042>

policies one ought to adopt and implement about the variety of research scenarios one adopts and maximally on many other things as well. While my personal preference is for a robust definition of education, influences and happiness, other approaches are legitimate and easier to manage.<sup>14</sup>

Indicators related to fun and entertainment, the women of the slopes of south Merapi, all have the opportunity to enjoy the fun by watching the local arts and have the availability of free time. Despite these similarities, several important gender differences were revealed. First, the positive association between adult free time and engagement was slightly stronger among mothers than fathers, suggesting that mothers may benefit more from adult free time. Since mothers have fewer opportunities to spend leisure time in the company of children of are fathers, they may be less inclined to take adult free time for granted, appreciate it more, and consequently feel more engaged.<sup>15</sup>

Kardinah argued that the disaster was present periodically. The disaster is a blessing for the people on the slopes of Merapi. Merapi eruption produces sand and stones that can be a source of income for women and communities of Merapi Slope. Health insurance, property security guarantee makes me happy to stay on the slopes of Merapi. Disaster keeps me in touch with my neighbors and relatives, to reinforce each other when I'm in disaster:

... with my extended family ... with my neighbors ... it is important for my family ... when there is a disaster to strengthen each other ... when we are erupting ... we take turns with our neighbors and relatives ... keeping the property left behind ... thus we are not exhausted from having to walk to the evacuation center ... we share information about the circumstances ... so that our security is maintained

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<sup>14</sup> Alex C. Michalos, "Education, Happiness and Wellbeing. *International Conference on 'Is happiness measurable and what do those measures mean for public policy?'*" (Research Centre of the European Commission, OECD, Centre for Economic and International Studies and the Bank of Italy, 2007).

<sup>15</sup> Shira Offer, "Free Time and Emotional Well-Being: Do Dual-earner Mothers and Fathers Differ?," *Gender & Society* 30, no. 2 (2016): 213–239.

The happiness of women on the slopes of Merapi is evident from the health insurance gained from all women. All women attended disaster post disaster lessons in 2010. Women follow the course in an effort to understand and mitigate disasters when faced with disaster. Fun and entertainment enjoyed by all women of Merapi Slope by watching puppets and having free time. All the women of Merapi Slope (100 percent) have homeownership and asset valuables mastering the land of the yard, the land of rice fields, the moor, livestock, jewelry / valuables, motor vehicles, savings / deposits, and have old age guarantee. This guarantee makes women feel assured of their future in the slopes of Merapi.

Livelihoods were dominated 51.5 percent farmers followed by sand and merchant fishing activities. Women income is dominated between 1,000,000, - up to 2,000,000 rupiah per month reaching 57.57 percent of respondents, and all women in Glagahmalang work to help earn a living for the fulfillment of household needs. The relevance of the present study lies in two features. First, it contributes to the small empirical literature on the impact of interdependent preferences on individual well-being. This is especially true when looking at the studies that, like this one, use micro-data and measure well-being by means of self-reported answers to a life satisfaction question. Second, it differs from other studies, as it tests four different hypotheses of the relation between income and individual well-being.

The main conclusions can be summarized as follows: (1) even if income has a small effect on individual well-being, the effect is not insignificant when compared with other objectives variables; (2) the impact of income on individual well-being is for East of the West Germans, which makes sense, given that Easterners are poorer than Westerners; (3) increases in family income accompanied by identical increases in the earnings of the group. (4) the larger an individual's own income is in the comparison of the income of the reference group, the

happier the individual is; and (5) for Westerners and for the total German sample, the comparison effects are asymmetric.<sup>16</sup>

All women of slopes of Merapi recognize the existence of security and environmental guarantee, asset and housing domination and life satisfaction become component of happiness. Women as a whole recognize, the threat of disaster and the environment become an inherent part of their daily lives. The Fukushima disaster in March 2011 increased environmental concerns between the German and Switzerland. However, there is no evidence that general satisfaction with life in the German, Swiss, or British population decreases as a result of the disaster. This is the case with robust.<sup>17</sup> The happiness of women on the slopes of Merapi can be felt, even though they live among the threat of disaster.

Ratmi (aged 59 years) argued that from birth until now has experienced several events eruption of Merapi, last eruption of Merapi in 2010. Merapi became the source of family life of Ratmi after the eruption:

...Merapi becomes a blessing for families here for generations ... sand and abundant rocks ... arable land becomes fertile...if Merapi does not work (active normal) ... sand and rock are gone ... we must think how to find other sources of income to meet the needs of the household ... Merapi is the source of our livelihood ...

Women on the slopes of south Merapi deeply understand Merapi's character, they assume that Merapi is a blessing in their lives, along with their families for generations to live and earn a living on the slopes of Merapi. The happiness of women in the slopes of south Merapi can be seen from the routine activities of women, Merapi is a livelihood for the

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<sup>16</sup> Ada Ferrer-i-Carbonell, "Income and well-being: an empirical analysis of the comparison income effect," *Journal of Public Economics*, no. 89 (2005): 997–1019. <http://www.elsevier.com/locate/econbase>

<sup>17</sup> Jan Goebel et al., "Natural Disaster, Environmental Concerns, Well-Being and Policy Action The Case of Fukushima," The Winner of CINCH Academy Best Paper Award (2014).

people of Merapi Slope. Routine activities when normal Merapi actively carried out freely, as without any threat of disaster that can occur at any time. They believe that Merapi is considered by many to be a menace as a threat, when Merapi is in turmoil they will follow the direction of the government for their salvation and their families.

Kardinah (47-year-old) comes from outside DIY, has husband from Merapi Slope, meets husband while working in Jakarta, now they live in husband's ancestral home. Since 2008 they and their husbands settled on the slopes of Merapi Selatan by cultivating agricultural land, raising, searching for sand and rocks as a source of income. Kardinah was on standby if she had to step away from their hometown when Merapi was in turmoil:

... every day I help my husband's activities after completing my household duties ... preparing food and clothing for children and husbands ... washing ... doing community social activities .. visiting each other especially if neighbors and relatives have work ...

The happiness of women in the slopes of south Merapi as a whole is reflected in their daily activities when Merapi is normally active, conducting routine household activities, carrying out social functions, helping husbands to earn a living, and accompanying their children in school can be done well. Happiness is seen from the satisfaction of life with an indicator of having relationships with relatives, neighbors, and friends, as well as exercising the rights and obligations as citizens and nationals are implemented by all women.

There is an important role of community life which may have a significant influence on post trauma growth, namely social support. It is very common that during the time of disaster, survivors received assistance from various parties, both physical, financial, social and psychological aids, in turns will facilitate survivors to be able to bounce back and live a normal life.<sup>18</sup> Merapi is a source of life for women and

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<sup>18</sup> Subandi Taufik Achmad et al., *The Role of Spirituality, Gratitude And Hope In Predicting Post Traumatic Growth Among Survivor of Mount Merapi Eruptin in*

people in the Merapi Slope, while they are active, they will temporarily step aside. They understand that after the eruption, it will be obtained a source of income that is sand and stone that can be sold to meet the needs of the household. Women's life on the slopes of Merapi after the disaster in 2010, is now normal again. Abundant sand and stones are a source of income for them. Ratmi (mrs) said that the sand and the rock are running low, so it is difficult to obtain. Ratmi expects another shipment from Merapi after seven years of eruption:

... got it... sand and rocks for sale ... it's getting harder now ... because the fewer supplies ... may soon get sent from Merapi ... sadness when disaster strikes ... paid with happiness ... I'm get money only power capital ... it's Merapi blessing ...

Bond together in carrying the whole burden of life is very important when disaster strikes. Post-disaster reconciliation among citizens is done intensively so that social bonds between citizens can be realized. Social social activities conducted with a variety of activities ranging from arts, games, *pengajian* / religious meetings and recreation together. Efforts to remove the trauma of disaster, strengthening the soul, and improving the business conducted together among residents.

The threat of disaster for women in the slopes of Merapi Selatan can be felt at times when Merapi erupts. Preparedness for disaster threat has been done by women of slope of south Merapi, considering their residence area is disaster prone area.

**Table. 2. Disaster Management**

	<b>Disaster-Related Handling</b>	<b>f</b>	<b>%</b>
1.	Controlling development along the river	3	9.09
2.	Understand the evacuation zonation	11	33.33
3.	The availability of transportation for	33	100

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*Yogyakarta, Indonesia* (Yogyakarta: Faculty of Psychology Universitas Gadjah Mada, Yogyakarta, 2013).

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	mobilization in the event of a disaster		
4.	Availability of clean water management	33	100
6.	Management of sanitation and waste	33	100
7.	Mobilization of food aid in the event of a disaster	33	100
8.	The availability of venture capital during the disaster	7	21.21
9.	Board guarantees, clothing, and food when disaster strikes	15	45.45
10.	Availability of social activities during a disaster	27	81.81
11.	Sensitivity when there is a sign of disaster	19	57.57
12.	Insurance	3	9.09
13.	Post-disaster recovery intensively	33	100

Source: Primary Data 2017

The threat of disaster is dealt with by the preparedness of women slopes of Merapi in a proactive way on any disaster management efforts. All the women of South Merapi Slope suggested transportation availability for mobilization in the event of a disaster. The availability of clean water management, sanitation and waste management, and the mobilization of food aid in the event of a disaster are considered to be fulfilled by all women of the slopes of south Merapi as well as intensive post-disaster recovery is also felt by all women. The low score reflects deficiencies in all assessed aspects of information; lack of knowledge, lack of training and absence of motivation.<sup>19</sup> Preparedness in the event of a disaster is recognized as an important stage for security in order to avoid the impact of disasters that could harm women. Women of Merapi slopes related to disaster management only 9.09 percent who understand the importance of controlling development along the river as an important part in disaster management. Women Merapi Slopes only 33.33 percent who understand the evacuation zoning as an important part

<sup>19</sup> S. Badawy et al., "Disaster Management Measures Adopted at Schools in Alexandria," *Alexandria Scientific Nursing Journal* 17, no. 1 (2015): 195-213. <http://asnj.alexu.edu.eg/index.php/ASNJ/article/view/97>

in disaster management. A better consideration of social as well as material capital in the aftermath of disaster could help community self-help, resilience and positive adaptation.<sup>20</sup> These changes in the agro-ecology of Turgo have dramatically improved the villagers' livelihoods. Since the eruption, Turgo has become the foremost producer of milk in its district. Another measure of improved livelihoods is higher levels of schooling. Many educated children look for work outside Turgo and send back money to invest in cattle. The growth in prosperity also is reflected in the development of non-farm economic activities like food stalls and employment in commercial transport and mountain/tourism guides. The villagers of Turgo themselves summarize these changes by saying that the 1994 eruption ushered in what they call the *jaman ayem* "untroubled age".<sup>21</sup>

The handling of disasters that involve little women is an aspect of the availability of insurance, women who already have 9.09 percent insurance and women who have available business capital during the disaster only 21.21 percent of women. Status did not indicate greater levels of anxiety or depression in elderly victims as compared to non-victims.<sup>22</sup> Capital has become a cornerstone to sustain the economy during disasters, but women have little chance of obtaining business capital as part of disaster management. The establishment of clothing, shelter and food during disasters reaches only 45.45 percent of women, as women have to leave their homes for a while, they evacuate or ride at relatives homes.

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<sup>20</sup> Pauline Eadie and Yvonne Su, "Post-disaster social capital: trust, equity, bayanihan and Typhoon Yolanda," *Disaster Prevention and Management: An International Journal* 27, no. 3 (2018): 334-345. doi: <https://doi.org/10.1108/DPM-02-2018-0060>

<sup>21</sup> Michael R. Dove, "Perception of volcanic eruption as agent of change on Merapi volcano, Central Java," *Journal of Volcanology and Geothermal Research*, no.172 (2008): 329-337. [www.elsevier.com/locate/jvolgeores](http://www.elsevier.com/locate/jvolgeores)

<sup>22</sup> Mary Evans Melick and James N. Logue, "The Effect of Disaster on the Health and Well-Being of Older Women," *The International Journal of Aging and Human Development* (1986).

## **Conclusion**

Women of the slopes of south Merapi have socioeconomic activities vulnerable to the threat of disaster, but they believe that Merapi remains friendly with the people of its slope. Hot lava eruptions and rain lava, became a blessing of income and kept their territory fertile. Merapi is believed to be a blessing not as a disaster, people try to live in harmony with Merapi so as to support the happiness of women in the slopes of south Merapi. Therefore, resolving the problems of environmental hazards was directly linked to drawing up relocation plans. However, after understanding the complicated relation the community formed with the hazardous site, the studio recognized that an effective strategy for eliminating environmental vulnerability may in fact increase economic vulnerability. In this respect, a natural hazard acts as a catalyst where the intricately linked issues of vulnerabilities are brought to the surface.<sup>23</sup> The natural harmony life of the women of Merapi Slope gave birth to daily activities with the orientation of understanding nature. Living side by side with Merapi as an active volcano realized by women from the slopes of south Merapi, from the beginning/since the age of the children through socialization from generation to generation. Women consider Merapi as active volcano is not a frightening natural phenomenon, but alert to the threat of disaster disseminated to all family members in everyday life.

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<sup>23</sup> Sea Eun Cho, Sehyung Won, and Saehoon Kim. *Living in Harmony with Disaster: Exploring Volcanic Hazard Vulnerability in Indonesia*, Sustainability 8, no. 848 (2016). doi: <https://doi.org/10.3390/su80908482>

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